California Health Information Exchange Strategic and Operational Plans

March 31, 2010

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California Health Information Exchange Strategic Plan

October 21, 2009

1. Introduction

California is a beacon for technology innovation and health system transformation. Health providers in the State have long recognized the importance of health information technology ("health IT") and the vital role it plays in establishing and maintaining a safe, high quality, and efficient health care delivery system that is patient-focused. California is home to many of the most sophisticated health care institutions in the world and these providers have invested billions of dollars in health IT to support improvements in efficiency and quality. Emerging health information exchange organizations ("HIOs") are on the forefront of interoperability as they endeavor to support community health care and improve care for the underserved. State government also has significant investments in systems including Medi-Cal and various state registries that can be leveraged to create value in healthcare settings.

Health IT and health information exchange ("HIE") figured prominently in the Governor's comprehensive health care reform efforts and was a central plank (as it is now nationally) in the overall drive to reduce costs and improve outcomes. This commitment was initially demonstrated in Governor Arnold Schwarzenegger's Executive Order S-12-06[1], issued in July 2006, which resulted in the California Health Information Technology Study[2]. In March 2007, Governor Schwarzenegger issued Executive Order S-06-07[3] calling for the advancement of statewide health IT adoption to increase quality, strengthen transparency and promote accountability in the health care sector. The Order called for "100 percent electronic health data exchange" within ten years, and it identified key actions for the state to pursue, including providing state leadership, leveraging state purchasing power, developing a quality reporting mechanism through the Office of the Patient Advocate, and strengthening the ability of the Office of Statewide Health Planning and Development to collect, integrate and distribute data.

The American Recovery and Reinvestment Act ("ARRA") provides a tremendous opportunity to rapidly accelerate implementation of health IT and advance HIE in the state with a particular focus on Medicare and Medicaid providers. The Act commits more than $48 billion[4] in grants, loans, and incentives to Medicare and Medicaid providers to support meaningful use of health IT in a secure, patient-centric environment. California is well positioned to respond to ARRA. Soon after ARRA was enacted, the Governor's newly appointed a Deputy Secretary of Health IT within the Health and Human Services Agency ("CHHS") and the Secretary of Health and

[1] Executive Order S-12-06 by the Governor of the State of California, July 24, 2006. http://gov.ca.gov/executive-order/2616

[2] California Health Information Technology Study: Input to the California Health Data Exchange Roadmap, Accenture, January 2007. See http://www.hmohelp.ca.gov/library/reports/news/CA%20HIT%20Study%202007.pdf

[3] Executive Order S-06-07 by the Governor of the State of California, March 14, 2007. http://gov.ca.gov/index.php?/executive-order/5626/

[4] See estimate released May 2009 by the U.S. Department of Health and Human Services, available at http://www.hhs.gov/recovery/index.html. This includes an estimated $46.8 billion in Medicare and Medicaid electronic health record incentive payment funding and $2 billion to be distributed through the Office of the National Coordinator in a series of grants, loans, and technical assistance programs designed to support provider EHR use and to spur health information exchange. See also the CMS ARRA Implementation Plan, available at http://www.hhs.gov/recovery/reports/plans/hit_implementation.pdf and the ONC Implementation Plan, available at http://www.hhs.gov/recovery/reports/plans/onc_hit.pdf. Note that this estimate is significantly larger than the Congressional Budget Office's official score of the ARRA conference agreement, which was released February 13, 2009.

Human Services convened an HIE Advisory Board to provide guidance in the development of this and related strategic plans whose collective goal is to achieve statewide electronic health data exchange, uniform interoperability standards and adoption of health information technologies.

Over the course of four months, from April 2009 to August 2009, the state guided an open, inclusive, and transparent strategic planning effort described in Section 2.4. This planning effort involved input of over 600 stakeholders and resulted in this Strategic Plan. The planning process included:

- Monthly meetings with the HIE Advisory Board to obtain their input and guidance,
- An environmental scan of the State to assess the level of health IT adoption and use of HIE,
- Assessment of selected states' governance, technical, business and finance strategies,
- A review of how a statewide governance entity must be structured to comply with State law and create statewide policy guidance,
- Development and vetting of elements of HIE governance models that incorporate health outcome priorities and a statewide approach to technical infrastructure, privacy and security and financing, and
- Extensive public input through web-based surveys, public forums, and stakeholder teleconferences and a health IT and exchange summit.

As anticipated in such a large and complex state, the strategic planning effort uncovered differing opinions regarding how best to implement and operate statewide HIE services. However, there is agreement among stakeholders on:

- The value of health IT and HIE,
- The need for statewide governance to lead decision making and gain statewide efficiency,
- The principle that statewide technical infrastructure must build upon the many strengths and technical assets of existing provider and HIE organizations, and
- The desire to continually improve and foster innovation.

While there is much promising activity underway, California currently lacks an organizing and convening framework that will allow it to meet its vision for a patient-centric health system that is supported by health information exchange. This Strategic Plan addresses that shortcoming and charts a path to rapidly resolve it.

This Strategic Plan responds both to the requirements identified in the State's planning process and the requirements outlined by the Office of the National Coordinator in its "State Health

Information Exchange Cooperative Agreement Program". Importantly, the Strategic Plan sets forth a set of immediate actions including:

1. Develop statewide HIE services, the goals of which are to address specified health outcomes that include individual and population health status elevation and that is governed by and implemented cooperatively by the public and private sectors.

2. Develop and enforce policy requiring all statewide HIE participants to comply with a common set of privacy and security guidelines and policies.

3. Develop and enforce vendor agnostic statewide technical guidance requiring all statewide HIE participants to comply with a common set of protocols and standards.

4. Develop an approach for sustainable financing that does not rely on federal, state, or private grant-based funds.

5. Coordinate an integrated approach with Medi-Cal and state public health programs to enable information exchange and support monitoring of provider participation in HIE as required for Medicaid meaningful use incentives.

6. Select a not-for-profit organization that can function as a statewide governance entity (the "HIE Governance Entity"). The HIE Governance Entity must 1) have a diverse board that accommodates broad stakeholder representation and State leadership, 2) engender trust and collaboration between and among all stakeholders, 3) convene stakeholders to generate statewide policy guidance but not operate HIE systems except as requested by and driven from the stakeholders, and 4) employ robust administrative and financial processes to support sustainability, transparency and accountability.

The State recognizes the need to play a continued leadership role in determining the path and optimizing the model for exchange of health information. The Strategic Plan will be implemented through the California HIE Operational Plan that will outline a corresponding and comprehensive set of activities to achieve statewide HIE and enable California's providers to demonstrate meaningful use and receive the maximum incentive reimbursement while avoiding future reimbursement penalties. The Strategic Plan envisions the completion of the California HIE Operational Plan by December 31, 2009.

2. Environmental Scan

2.1 HIE Readiness & Extent of HIE Adoption

The roadmap to build HIE capacity must begin with an assessment of the state and its providers' readiness to adopt and implement health IT to achieve meaningful use. California not only boasts the largest population of the 50 United States – approximately 37 million residents[5] - it is also the third largest state geographically, bordering Oregon, Nevada, Arizona and Mexico. Approximately 80% of California is rural, yet 85% of the population lives in urban areas, creating diverse scenarios around access to care in both rural and urban communities.

Health care services are delivered to Californians through 400 hospitals, over 60,000 active physicians, 100 federally qualified health centers (FQHCs) and 263 rural health clinics.[6] Several large health systems including Adventist, Catholic Healthcare West, Kaiser Permanente, Sutter Health and Tenet provide services in multiple regions around the state and many operate in more than one state.

Most insured Californians, 49%, receive health insurance through their employers, 16% are covered by Medi-Cal, 9% by Medicare, and 7% by individual plans.[7] The remaining 19% of the population is uninsured.[8]

Nationally, it is estimated that only 7.6% of non-federal hospitals and 13% of ambulatory providers have implemented "basic" EHRs that include certain clinical documentation but not clinical decision support.[9] California providers rank above the national estimate with 20% of medical groups and 13% of physician groups estimated to be using EHRs.[10] Similarly, among individual physicians, California physicians reported greater use of EHRs than the national average with 37% of physicians reporting EHR use in comparison to 28% nationally.[11] This uptake may in part be explained by the presence of large medical practices (10 or more physicians) in California as 57% of physicians in large practices report using EHRs, compared to 25% of physicians in small/medium practices and 13% of solo practitioners. However, two-thirds of physicians work in small and solo practices. Virtually all Kaiser Permanente physicians now use EHRs.

California's health care safety net facilities and providers in underserved communities generally face significant fiscal and resource challenges and these challenges impact their ability to

[5] 2009 Population Estimates, U.S. Census Bureau, Population Estimates Program.
[6] Id.
[7] "California: Health Insurance Coverage of the Total Populations, States (2006-2007), U.S. (2007." Kaiser Family Foundation. State Health Facts.org. Accessed on August 19, 2009.
[8] Id.
[9] *See* Jha, Ashish K., M.D., M.P.H., et. al. "Use of Electronic Health Records in U.S. Hospitals." *New England Journal of Medicine.* Published at NEJM.org on March 25, 2009 and C.M. DesRoches, et al, "Electronic Health Records in Ambulatory Care – A National Survey of Physicians," *New England Journal of Medicine.* 359, no. 1(2008): 50-60. Generally speaking, researchers in these two studies considered "basic" EHRs to be those that included certain clinical documentation but not clinical decision support and select other functions.
[10] The State of Health Information Technology in California. California HealthCare Foundation. 2008.
[11] Id.

implement EHRs. While less than a third of community clinics report they are actively pursuing EHRs, the majority of community clinics have some form of health IT in place, most commonly in the form of diabetes and immunization registries.[12]

2.2 Assessment of Current HIE Capacities

California's current HIE efforts fall broadly into two categories: (i) large health systems, affiliated providers and ancillary services implementing integrated EHRs, and (ii) community-driven efforts that aim to ensure ubiquitous availability of data within a region or across the State. Multiple uncoordinated HIE efforts have been spawned over the past 15 years as largely regional initiatives. Of these efforts only three today are exchanging clinical data. The remaining efforts are primarily focused on organizing, fundraising, and piloting their solutions and lack the resources and capital to make a meaningful impact.

Community HIE Efforts

California's HIE activity is characterized by a wide range of local initiatives that have remained largely independent. There are over 20 self-characterized HIEs throughout the state with informal jurisdictions largely based on a regional or geographic boundary. The efforts are predominantly overseen by Boards of Directors comprised of local stakeholders and health care leaders, and representatives of organizations who are or plan to be participating in the HIE.

Community HIE efforts have historically been driven and motivated by the perceived health care needs of their local communities. These efforts are often closely linked with the predominant provider organizations in the community who pay special attention to the community's unique health needs (e.g. diabetes, behavioral health, etc.). The majority of efforts have planned their initial implementation around a use case or specific health outcome priority identified through a collaborative process among both participating organizations and other community stakeholders.

While community HIE efforts often share a common mission to improve health care in their communities through HIE and health IT, the efforts do not all share a common technical approach and are in various stages of technical development. Some efforts are foundational, organizing stakeholders and developing an approach to HIE; others are pre-implementation, selecting vendor partners and obtaining the necessary agreements among participants to enable HIE; others are mid-implementation, pilot testing the exchange of limited administrative data among a small number of users; and only a few are operational and exchanging clinical data. Three efforts exchanging clinical data are: Eastern Kern County Information Technology Association (EKCITA), Redwood MedNet and Santa Cruz HIE. The majority of community HIE efforts are pursuing some variation of a federated technology model and are working to be compliant with anticipated federal standards to enable interoperability. Please see Table 1: Community HIE Efforts below outlining many of the state's community HIE efforts and their respective technology models.

In addition, several San Francisco Bay Area health organizations are exchanging clinical data including lab results, prescription information and clinical referrals. This exchange processes

[12] Id.

more than 500,000 per month, connecting 3,000 providers, 950,000 patients, two major national laboratory services providers and several major healthcare provider organizations.

Table 1: Community HIE Efforts

Please note that this table is a snapshot in time of health exchange activity in California as of October 2009. Health exchange efforts in the state are and have been rapidly evolving, and this table is not meant to describe all health exchange activity in the state. For example, new additions since this Strategic Plan was submitted to ONC include that OCPRIO is now live; Kaiser Permanente has launched a demonstration project which is exchanging live data with the Department of Defense and Veterans' Administration, and John Muir RelayHealth as example of a form of exchange that is not represented here. The Governance Entity will develop a process for tracking HIOs and their stage of progress in state.

HIE	Year	Region	Org	Technology	Operational*	NHIN	Clinical Priorities	Financing to Date	Sustainability Model
Access El Dorado (ACCEL)	2004	El Dorado County	Unincorporated	Federated	Public health, mental health, 7 clinics, 2 hospitals	NA	Care coordination; public health, medical home	Grant, county, First 5, hospitals	In development
CalRHIO	2006	Statewide	501(c)3 (2009)	Regional overlays; HIE backbone	First ED in Orange County went live in October 2009	NA	ED	Grant, Loan	Shared savings
EKCITA	2004	Eastern Kern County	501(c)3 (2009)	Hybrid open source system	3 clinics; 2 private practices; 1 hospital	NA	Diabetes & Regional public health issues	Grant	Minimum volume of users
Health-e-LA	2004	Los Angeles County	Unincorporated	Federated	NA	NA	Safety net	Grant, private	In development
Long Beach Network for Health	2003	Long Beach	501(c)3 (2007)	Hybrid federated model	NA	Yes	ED & Patient safety	Grant	Minimum volume of users
OCPRHIO	2007	Orange County	Unincorporated	Federated	NA	NA	ED	Grant	In development
Redwood MedNet	2003	Mendocino, Sonoma, Lake Counties	501(c)3 (2005)	Federated with decentralized network	30 providers, 8 practices, 5k transactions/ month	Yes	Clinical data; Lab results, radiology, ePrescribing	Grant and private	Cooperative health data access service

HIE	Year	Region	Org	Technology	Operational*	NHIN	Clinical Priorities	Financing to Date	Sustainability Model
Santa Cruz HIE	1995	Santa Cruz	IPA & hospital based	Push model; vendor outsourced	Local hospital; county clinics; IPA 90k transactions/ month	Yes	Clinical messaging; results delivery; eRx	IPA support	Hospital & IPA contributions

The majority of community HIE efforts operate as charitable organizations with 501(c)(3) or state-recognized non-profit status, and have traditionally been funded by philanthropic grants. The reliance on grant funding and lack of long-term funding commitments has limited the ability of many HIEs to hire and retain staff, relying on heavy use of volunteers' time and resources. The pursuit of ongoing funding and development of a sustainable business model is a priority of most, if not all, community HIEs that are operating or planning operations today. Many efforts assert that they will pursue some form of either a transaction-based or shared savings model once they are operational, and they articulate an upfront need to measure and document actual savings to potential participants. This approach faces some considerable challenges: First, the determination of where savings might be generated and to whom those savings might accrue is virtually impossible to determine absent a complex financial analysis that traces funding of all aspects of the health care system from the payor (including patient) to the plan (where one exists) to the numerous providers involved in an individual patient's care; second, such measurement is difficult without the active exchange of clinical data.

As highlighted in Table 1, several of California's HIE efforts have participated in the Nationwide Health Information Network (NHIN) demonstrations, successfully testing the exchange of clinical information using NHIN standards and protocols. Those organizations that have participated in NHIN demonstrations include Kaiser Permanente, Long Beach Network for Health (LBNH), ER Connect-Orange County, Redwood MedNet and Santa Cruz HIE. Some of these HIE efforts have not only demonstrated the capability to connect via the NHIN gateway to other California HIE efforts, but also to efforts outside of California. The ability of community HIE efforts to successfully participate in and test the NHIN gateway demonstrates their commitment to interoperability and national data exchange standards.

CalRHIO

The California Regional Health Information Organization (CalRHIO) was founded in 2006 as a collaborative effort to bring health care stakeholders together around the use of health IT to improve health care safety and efficiency in California. Planning efforts around the organization's structure and mission took place from 2005 – 2006 through collaborative stakeholder work groups. To date the CalRHIO Board of Directors has included representatives from California's hospitals, medical groups, consumers, privacy advocates, local and state government agencies, health plans, safety net providers, and regional health information efforts.

CalRHIO selected the improvement of patient care in the emergency department (ED) as the first phase of its statewide HIE. CalRHIO is currently engaged in a pilot with the Orange County Partnership Regional Health Information Organization (OCPRHIO) to aggregate data from CalOptima, a Medi-Cal provider, and 23 EDs. As part of the pilot, CalRHIO plans to provide various technical services including an MPI, RLS and patient consent.

CalRHIO has developed a sustainability plan based upon a shared savings model. In April 2009, UnitedHealthcare became the first national health plan in the country to agree to pay for HIE

services statewide when it entered into an agreement with CalRHIO.[13] However, questions remain as to the viability of the CaRHIO business model and with respect to how the details of the model will be implemented. The CalRHIO model does not require health plans to make upfront investment in the HIE services and places the total risk of performance on the HIE to produce savings. Furthermore, prior experiences with shared saving models have shown that measuring of savings is complicated to implement successfully. CalRHIO is seeking to address some of these issues; recently it contracted with RAND and the University of Southern California to measure cost savings resulting from the use of its statewide datasets deployed to hospital EDs as part of an effort to isolate savings that could be used to support itself.[14]

California Telehealth Network

The California Telehealth Network (CTN) was created in response to the Federal Communication Commission's (FCC) Rural Health Care Pilot Program. This program, tasked with significantly increasing access to acute, primary and preventive health care in rural America, awarded $22.1 million to California in 2007. Significant investment of additional capital has been made by other partners. The funds, to be spent over three years, will be leveraged to build upon existing telehealth investments and initiatives across the state. The CTN aims to create a statewide broadband network dedicated to health care, connecting public and non-profit health care providers in rural and urban locations.[15] The CTN project has received an overwhelming response and plans to connect over 300 sites to the nationwide broadband network.

Integrated Health Systems

Several of California's integrated health systems currently exchange data between and among their affiliated physicians and hospitals. Many of these systems have multiple locations and facilities spread across Northern and Southern California, with some systems extending into neighboring states. While many of these systems offer a suite of health IT applications and modalities to their hospital-based clinicians, health systems vary in their provision of health IT outside of the hospital walls. Over the past decade, these health systems have made significant investments in their health IT infrastructure and staff. While technical approaches and vendors vary among health systems, all of the health systems follow national standards and many participate in technical workgroups at the state and national levels. Today health systems vary in their interactions with and participation in community HIE efforts, ranging from no involvement to participation in collaborative activities.

Health systems largely operate as closed networks and their information will largely remain proprietary and locked within those networks unless addressed through statewide collaboration.

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[13] Press release. "United Healthcare Partners with CalRHIO to expand electronic health information statewide." May 20, 2009. http://www.calrhio.org/crweb-files/press/20090520_FINAL_UHC-CalRHIO_RELEASE.pdf

[14] Press release. "CalRHIO Selects RAND-USC to Evaluate Savings Resulting from Use of Statewide Health Information Exchange". June 29, 2009. http://docs.google.com/gview?a=v&q=cache:mGAKSDKp5CYJ:www.calrhio.org/crweb-files/press/2009.06.29_CalRHIO_RAND_Savings_Evaluation.pdf+RAND+press+release&hl=en&gl=us

[15] The California Telehealth Network. Frequently Asked Questions. http://www.caltelehealth.org/ Accessed on 08/20/2009.

Their investments in these integrated systems should be leveraged as statewide HIE advances but their business interests must be protected at the same time. Their implementations should be considered and incorporated into state HIE efforts in a collaborative and opportunistic way to ensure interoperability across all of California's providers.

IPAs and Medical Groups

Of California's approximately 400 IPAs and Medical Groups, as many as 70 have begun to implement an EHR infrastructure and adoption program.[16] With few exceptions, EHR adoption has been incremental with only a portion of an IPAs or Medical Group's affiliated physicians fully operational on a system.

2.3 California Health IT Collaboratives

There are numerous existing collaborative efforts that have emerged through public and private sector funding and leadership to support the adoption of health IT and HIE in California. These collaboratives serve as a strong foundation for joint decision making and promulgation of best practices, policies, and guidance. Some of these efforts are profiled briefly below.

Accelerating Quality Improvement through Collaboration (AQIC). A statewide effort to spur the adoption of quality improvement methods and the use of electronic data by community clinics and health centers, AQIC implemented a common quality reporting system and processes for improving diabetes care across community clinics and health centers. It is coordinated by the California Primary Care Association (CPCA) and managed in collaboration with 14 regional health center consortia. It was funded by the California HealthCare Foundation (CHCF).[17]

Building Clinic Capacity for Quality (BCCQ). The BCCQ program is focused on creating learning opportunities and collaborations between safety net clinics in Southern California to enhance their delivery of high quality healthcare through the use of health IT and quality improvement strategies. The project helped 51 community clinics and health centers and three clinic consortia in five Southern California counties measure their capacity for implementing health IT. [18]

California Cooperative Healthcare Reporting Initiative (CCHRI). CCHRI, a collaborative of health care purchasers, plans and providers, was convened in 1993 by the Pacific Business Group on Health to help consumers and purchasers make informed health care purchasing decisions. CCHRI's mission is to collect and report comparable and reliable performance data for stakeholder use. The degree of cooperation among participants in CCHRI is unique. All participants adhere to pre-established rules for data collection and reporting and abide by an established framework for decision-making. Governance is provided by a 15 member executive committee comprised of equal representation from each of the stakeholder groups: purchasers,

[16] Source: California Association of Physician Groups. http://www.capg.org/home/index.asp?page=1
[17] Accelerating Quality Improvement through Collaboration. California HealthCare Foundation. http://www.chcf.org/topics/chronicdisease/index.cfm?itemID=133784 Accessed on 8/20/2009.
[18] SOUTHERN CALIFORNIA CLINICS, HEALTH CENTERS AND CONSORTIA BUILDING CLINIC CAPACITY FOR QUALITY (BCCQ). UniHealth Foundation. http://www.unihealthfoundation.org/highlight_2.html. Accessed 08/20/2009.

plans and providers. Decisions are made by majority vote. [19]

California eHealth Collaborative (CAeHC). CAeHC is a grass roots effort formed in February 2009 as an open collaboration to address emerging issues related to all eHealth technologies. Since its inception CAeHC has hosted a series of educational eHealth webinars and in-person town hall meetings to gather stakeholder input on eHealth.[20]

California E-Prescribing Consortium. The California E-Prescribing Consortium is an open stakeholder collaborative composed primarily of health care providers, payers and pharmacies dedicated to identifying and resolving issues related to e-prescribing in California. The Consortium plans to host a web-based E-Prescribing Information Center in August 2009 as a resource for e-prescribing stakeholders.

California Improvement Network (CIN). CIN was established as a social network to share ideas about improving care delivery. Since 2005, it has sponsored training for more than 600 health care professionals in specific quality improvement skills and has evolved into an organization of partners (see list below) who care for some 20 million Californians and actively work with more than 1 million patients with one or more chronic conditions. The CIN partner organizations work with clinicians from a broad range of outpatient settings in California. They include statewide organizations as well as regional groups, and represent private commercial medical groups, private community clinics, public hospital clinics, a county health department, and two Medi-Cal managed care health plans.[21]

California Privacy and Security Advisory Board (CalPSAB). CalPSAB operates under the auspices of the Secretary of the California Health and Human Services Agency and provides private and public collaboration to address and coordinate HIE privacy and security efforts in California. CalPSAB emerged out of the AHRQ and ONC funded Health Information Security and Privacy Collaboration (HISPC) efforts that brought many HIE stakeholders together beginning in 2006. CalPSAB prepares and submits privacy and security recommendations to the Secretary of the Health and Human Services Agency for review and approval. CalPSAB is a public-private advisory board and it oversees the recommendations and activities of four active committees that meet regularly to analyze issues and develop corresponding solutions: Privacy, IT Security, Legal and Education. A significant accomplishment that CalPSAB and CalOHII oversaw was the production of the California Health Information Law Identification (CHILI) search tool, a web-based tool that enables users to search HIPAA and California statutes and regulations for information pertinent to the privacy and security of patient health information.[22]

California Quality Collaborative (CQC). CQC is a healthcare improvement organization dedicated to advancing the quality and efficiency of patient care in California. CQC's expert quality improvement programs transform healthcare delivery across physician groups through collaboration. The organization is supported by a state-wide leadership alliance of healthcare purchasers, providers, and health plans, all working toward a shared goal of accelerating quality

[19] California Cooperative Healthcare Reporting Initiative, http://www.cchri.org/index.html. Accessed 8/23/2009,
[20] California eHealth Collaborative Introduction. http://caehc.org/. Accessed 08/20/2009.
[21] California Improvement Network. California HealthCare Foundation. http://www.chcf.org/topics/chronicdisease/index.cfm?itemID=112543. Accessed 08/20/2009.
[22] http://www.ohi.ca.gov/chili/index.php

improvement.[23]

Integrated Healthcare Association (IHA). IHA is a statewide leadership group that promotes quality improvement, accountability, and affordability of health care in California. IHA membership includes major health plans, physician groups, and hospital systems, plus academic, consumer, purchaser, pharmaceutical and technology representatives. The IHA's principal projects include pay-for-performance, medical technology assessment and purchasing, the measurement and reward of efficiency in health care, and prevention programs directed at obesity.[24]

Tools for Quality. Tools for Quality is a two-year effort to assist community clinics and health centers with their purchase of chronic disease management systems. The program is initially providing matching funds to 33 community clinics and health centers to support the facilities' software acquisition and training.[25]

2.4 Statewide HIE Readiness Preparation

California recognizes that it must demonstrate its ability to effectively use planning and implementation funds to advance HIE and meaningful use and in April 2009 embarked on a strategic planning process. The process tasks were designed to ensure stakeholder participation, including:

- Convening a public-private HIE Advisory Board to review and provide input on the process and deliverables associated with state implementation of HIE. The HIE Advisory Board was co-chaired by Health and Human Services Secretary Kim Belshe and Dr. Paul Tang, Vice President and Chief Medical Information Officer, Palo Alto Medical Foundation.[26]

- Interviews with eight HIEs, six health systems, and the California Telehealth Network to determine the stage of implementation of initiatives underway at these institutions (e.g. planning, preliminary implementation, operational), planned or current functionality (e.g. e-prescribing, clinical data exchange, administrative payment processing), technical architecture, key stakeholders and population served. Please see Appendix 9.3 for the HIE and health system interview protocols utilized during these interviews.

- An assessment of selected states' HIE governance, technical, business and finance strategies; the states selected include Indiana, New York and Tennessee.

- A review of State procurement laws pertinent to the selection and empowering of an HIE Governance Entity.

[23] California Quality Collaborative. http://www.calquality.org/. Accessed 8/23/2009.
[24] Integrated Healthcare Association. http://www.iha.org/. Accessed on 08/20/2009
[25] Press Release. "Better Chronic Disease Care Through Technology: Health Care Foundations Unveil $4.5 Million Program." California HealthCare Foundation. June 11, 2008.
[26] Please see Appendix 9.6 for HIE Advisory Board membership.

- Development of potential models for California HIE using information gathered in the assessment process, outlining options for governance, health outcomes, technical approach, privacy and security and financing.

- Convening three stakeholder meetings to obtain input around the potential models and the organizational and structural criteria for an HIE Governance Entity. More than 200 stakeholders attended these meetings in Sacramento, Los Angeles, and Fresno, representing hospitals, physician groups, privacy advocates, consumer advocates, health plans and insurers, employers, providers, clinics, public hospitals, long-term care facilities, allied health professionals, legislative staff, vendors and systems integrators.

- Hosting a Health IT & Exchange Summit attended by almost 200 people to participate in and support the strategic planning process.

- Development of a web-based information collection tool to facilitate additional public participation and feedback around HIE; over 135 responses have been submitted to date and reviewed for incorporation into the planning process. Please see Appendix 9.5 for the web information collection tool.

- Finalizing the California HIE Strategic Plan.

3. HIE Development and Adoption

3.1 Vision Statement

Health care in California is built on a solid foundation of health information exchange that provides safe and secure patient and provider access to personal and population health information dramatically improving the health and wellbeing, safety, efficiency, and quality of care for all Californians.

3.2 Goals of Health Information Exchange

To achieve the vision of Health Information Exchange in California, we have established the following goals:

1. To ensure patients have safe, secure access to their personal health information and the ability to share that information with others involved in their care

2. To engage in an open, inclusive, collaborative, public-private process that supports widespread EHR adoption and a robust, sustainable statewide health information exchange

3. To improve health care outcomes and reduce costs

4. To integrate and synchronize the planning and implementation of HIE, health IT, telehealth and provider incentive program components of the federal stimulus act

5. To ensure accountability in the expenditure of public funds

6. To improve public and population health through stronger public health program integration, bio-surveillance and emergency response capabilities

3.3 Priority Objectives

California must align its health information exchange implementation and priorities with the current federal definition of meaningful use to ensure that its eligible providers are able to demonstrate meaningful use and are positioned to receive the maximum incentive reimbursement and avoid future reimbursement penalties. With reaching meaningful use as an imperative, the following, immediate priorities are delineated to support Medicare and Medi-Cal providers:

- Electronic eligibility and claims transactions
- Electronic clinical laboratory ordering and results delivery
- Electronic prescribing and refill requests
- Electronic public health reporting
- Quality reporting
- Public and population health
- Children’s health and vulnerable populations

- Prescription fill status and/or medication fill history
- Clinical summary exchange for care coordination and patient engagement

3.4 Continuous Improvement

Against the backdrop of the immediate priorities defined above, it is important to define specific indicators of progress toward those priorities, but to recognize that these priorities and associated measures are only the first step. Priorities must be continually evaluated and re-set. As with any complex process, and particularly a complex technology issue, change and innovation will continue. Driven from a patient-centric perspective and embraced by consumers, HIE will radically transform all aspects of health care delivery so a continuous improvement system must be developed that can adapt to this as-yet-uncharted world. Beginning with Healthy California 2020, health outcomes targets will be developed and timelines for their achievement established. Using the data that will be available through the HIE, an assessment and evaluation process will be created. The HIE Governance Entity will have a specific evaluation and re-prioritizing function that focuses on ensuring that progress is being made toward the goals, that course corrections are implemented as needed and that issues that are beyond the purview of the HIE Governance Entity are raised to the attention of State government or other appropriate responsible parties.

3.5 Patient Engagement

Central to the long-term restructuring of the health care delivery system is actively engaging patients in their care. Physician dedication to patient engagement is centrally important in this effort and the physicians will be most able to influence patient behavior.

A critical early priority of the HIE Governance Entity will be to concretely define what specific patient engagement objectives can be accomplished as rapidly as possible and to define metrics and measurement tools to assess progress toward those objectives. As California refines its patient consent format based on state and federal law, California can make each point of care a point of patient engagement where the patient's physician guides the patient in understanding and participating in the promise of HIE. At the same time, the HIE Governance Entity's privacy and security function must maintain a focus on assuring safe and secure access to records by only authorized providers.

In addition to physician engagement to promote patient involvement, the HIE Governance Entity will develop a specific strategy that is focused on consumer engagement. Broad reach of consumers is a long-term effort that requires a multi-pronged outreach strategy. It must begin in advance of full implementation and be an integral part of physician engagement. In addition, the consumer education must specifically focus on how HIE increases integration of care for children and those with disabilities and improves outcomes, as well as issues such as guarding private data, information-sharing standards, and personal responsibility. Consumer education must also address how personal health records factor into overall health management, and the best ways to use personal health records to advance consumer empowerment and improvement of outcomes.

The HIE Governance Entity also needs to develop policy levers that incentivize information

exchange and create demand for HIE services. Encouraging entrepreneurship and a burgeoning competitive commercial marketplace for secure and sound HIE products and services will draw patients into the process of effective use of HIE and will likely motivate patient engagement more effectively than broad-based education programs.

3.6 Health IT Adoption and Provider Connectivity

The California Health and Human Services Agency (CHHS) serves as the lead agency on HIE and HIT issues for the State. CHHS works with the State Chief Information Officer (OCIO), the Business, Transportation and Housing Agency and the Department of Managed Health Care to oversee the State's HIE and HIT related efforts. To develop a coordinated approach to health IT adoption and provider connectivity across the state, CHHS initiated six workgroups involving stakeholders representing public and private entities. These workgroups include:

- EHR Loan Funds,
- Regional Health IT Extension Centers
- Research and New Technologies
- Workforce Training and Development
- Broadband/Telehealth, and
- Health Information Exchange

On July 20, 2009, CHHS hosted its first California Health IT and Exchange Summit. The summit was attended in person by almost 200 people; dozens also participated by phone and webcast. The summit reviewed draft strategic plans for each workgroup and discussed next steps to finalize and publish the plans for public comment. The final plans will provide an integrated approach and guide California's health IT and HIE operational plans.

4. Governance

4.1 Overview

To date, the California market has been characterized by multiple uncoordinated HIE initiatives. These initiatives have addressed specific regional needs or the needs of a specific health system and have resulted in valuable lessons learned. However, a coordinated statewide governance approach is required to meet California's vision and goals for HIE, to take advantage of significant federal investment in health IT, and to create a policy infrastructure that allows California's providers to meet the goals of meaningful use including the ability to exchange health information.

As part of the this strategic planning process, CHHS performed an extensive environmental scan of the California market place, surveyed approaches of multiple other states to leverage the lessons learned and experience, and has gone to great lengths to engage California stakeholders to relate the information gathered and to understand their interests and requirements. As described in Section 2, there is a lack of consensus with respect to how to many of the details of how best to pursue information exchange. However, there is agreement of a number of fundamental principles, including:

- There is value in health information exchange and it is important to harness and use well the meaningful use incentive program,
- There is a need for a state-wide approach with respect to privacy and security,
- The imperative to include rural areas and safety-net providers and their patients as full participants in the benefits of HIE,
- The importance of a technical architecture that uses standards-based protocols for interoperability based on federal standards and the NHIN implementation platform,
- The need to adopt an approach that leverages existing HIE and Health IT investments, and
- The importance of flexibility to permit some level of regional variation to accommodate California's size and diverse regional needs and priorities.

During this process, we considered multiple governance models along a continuum that included a market-driven approach, a state-run governance structure with collaborative stakeholder advisory process, and a statewide governance entity with strong state participation.

A market-driven approach was considered to be ill-suited to the realities of the HIE marketplace today. It is true that many vendors are investing significant amounts in developing EHR, EMR and PHR technology that is intended to satisfy evolving technical standards. However it is equally true that the health care economy is extraordinarily complex, and patients and providers have shown themselves to be reluctant to spend scarce resources on new health care information technology. We therefore concluded that absent a state-level, coordinated governance and policy initiative the trust among patients and providers that is an essential foundation for HIE will be slow to develop and may be haphazard (and likely to underserve more vulnerable

constituencies). Significantly, we also were uncertain how a market-based approach would participate in federal grants to states to promote health information technology.

We therefore concluded that a state-based policy and governance initiative is required to serve California's needs. We carefully examined the concept of a state-run governance entity with a collaborative stakeholder advisory component. We concluded that many of the key functions that we perceive for the state-level governance process simply are not appropriate government functions. For instance, we believe it will be important for the HIE Governance Entity to interact with physicians and other providers to develop common contract forms for the exchange of clinical information; to engage with the vendor community to evolve technical standards for products and services; to resolve disputes among stakeholders and determine how stakeholders that do not conform to collaboratively-developed business rules should be sanctioned.

We concluded that the preferred model for California is an HIE Governance Entity that is a not-for-profit organization with a diverse board and an open and transparent governance process and has strong state participation to ensure achievement of public policy goals. Stakeholders will be invited to participate in governance and working groups at many levels, and will be asked to bind themselves contractually to participate in governance and to observe and be bound by technical, business and legal rules for HIE that are adopted as statewide policy guidance through an inclusive, fair, transparent and collaborative decision-making structure. This approach seems to combine the critical elements of securing wide community participation while assuring the achievement of public health goals, thus meeting the needs of patients, providers, payors, government and other participants by involving all in the collaborative governance process.

The HIE Governance Entity will establish the roles, responsibilities, and relationships between parties to organize, promulgate and oversee activities among stakeholders and across state, regional, and local levels and implementation of associated accountability mechanisms. The HIE Governance entity will formally coordinate activities with both CalPSAB and regional extension centers to drive to timely and meaningful results.

In addition, the HIE Governance Entity will be responsible for ensuring that its activities, workgroups and actions reflect the needs of California's residents. California's residents are diverse in geographic distribution, linguistics, health status, ethnic and racial composition, education levels, abilities and age. The HIE Governance Entity will ensure that objectives, requirements, and structures of health information exchange incorporate these considerations to assure maximum consumer access and engagement.

The principal short-term tasks of the HIE Governance Entity will be to organize the statewide collaborative process, establish appropriate workgroups staffed with subject matter experts and to manage the process of developing an Operational Plan for HIE in California. This program will include tasks such as:

- Creating standards, certification requirements and a technical plan that builds off existing assets and allows for broad access to HIE services that will support meaningful use.
- Creating policy guidance for privacy and security that is uniform, coordinated with federal policy, consistent and widely supported by stakeholders.

- Developing cost estimates, staffing plans and schedules to enable statewide HIE services.
- Developing and implementing controls and reporting requirements.
- Considering which state-level shared services should be implemented and in what order of priority.

4.2 Role of the State

California state leadership anticipates fulfilling the roles and responsibilities outlined for states in the HIE Cooperative Agreement Program. The State has already taken an important step in that direction by appointing a Deputy Secretary of Health IT in the Spring of 2009 to coordinate HIE and Health IT activities across California. A key part of the Deputy Secretary's duties has been to facilitate an open, fair, inclusive and responsive process to encourage public engagement in the development of California's strategic plan for HIE and other areas of Health IT, including Regional Extension Centers. In addition to the Deputy Secretary's leadership, the state will use its authority, programs and resources to:

- Develop state level directories and enable technical services for HIE within and across states.
- Remove barriers and create enablers for HIE, particularly those related to interoperability across laboratories, hospitals, clinician offices, health plans and other health information trading partners.
- Convene health care stakeholders to ensure trust in and support for a statewide approach to HIE.
- Ensure that an effective model for HIE governance and accountability is in place.
- Coordinate an integrated approach with Medi-Cal and state public health programs to enable information exchange and support monitoring of provider participation in HIE as required for Medicaid meaningful use incentives.
- Develop or update privacy and security requirements for HIE within and across state borders.

While the HIE Governance Entity will lead the process of convening the statewide collaboration process to develop statewide HIE services, the State is committed to playing a strong role in the HIE Governance Entity through direct CHHS involvement in the HIE Governance Entity board and through coordinating activities across Medi-Cal and state and local public health programs.

Governance Entity Board. The California Secretary of Health and Human Services and the Deputy Secretary of Health IT will hold voting positions on the governance entity's board of directors. At the request of the Secretary of Health and Human Services, additional seats may be required for the State of California such as Medi-Cal and Public Health. This role on the board allows the state to:

- Directly monitor and guide progress of all HIE activities,

- Coordinate activities in conjunction with the governance entity across multiple diverse organizations including Medi-Cal and state public health programs in order to ensure integration and support of a unified approach to information exchange without

duplicating efforts,

- Ensure conformance with state priorities and principles, and
- Monitor the use of funds and administrative processes to support transparency and accountability.

Defining State Priorities The state priorities include the assurance that hospitals, clinics and other providers are able to demonstrate meaningful use in order to obtain the Medi-Cal and Medicare payment incentives. To achieve meaningful use it is critical that California's health information exchange capabilities are expanded rapidly and aligned with the specific elements and timeframes required to support meaningful use. The state is charged with keeping its plans and priorities consistent with and complimentary to the Medicaid and Medicare plans for the implementation of meaningful use as they are developed. The Deputy Secretary of Health IT will continue his current role with the HHS HIT Policy Committee Health Information Exchange Workgroup as well as actively monitor emerging HHS and Federal activity. In addition, the state will monitor other states and engage directly with their activities to ensure the ability to exchange information across state boarders. California's priorities for HIE are currently defined as:

- Electronic prescribing and refill requests, including prescription fill status /medication fill history
- Clinical laboratory ordering and results delivery
- Clinical summary exchange for care coordination and patient engagement
- Electronic public health reporting (i.e., immunizations, notifiable laboratory results)
- Electronic eligibility and claims submission
- Children's health and vulnerable populations
- Public and population health reporting

Coordination with Medi-Cal and Public Health. Medi-Cal is already engaged in a planning process to coordinate the role that HIE will play in improving health outcomes for its constituencies. The State will coordinate activities across Medi-Cal and state and local public health programs and to avoid duplication of efforts and to ensure the integration and support of a unified approach to bi-directional information exchange.

Participation with VA, DoD, SSA and IHS The Deputy Secretary of Health IT will work with the governance entity to engage directly with organizations, such as the Department of Veterans Affairs (VA), Department of Defense (DoD), The Social Security Administration and the Indian Health Service (IHS) to ensure that the state can meet the various federal requirements in order to engage in health information exchange with these federal delivery systems.

Identification, selection and contracting for a Statewide HIE Governance Entity Through the environmental scan that was conducted as part of this strategic planning process a number of regional and statewide organizations for HIE have been identified as documented in Section 2. However, no single organization, public or private, has been identified with the resources and stakeholder support required to be the governance entity that will develop and implement

statewide HIE services in California. In August of 2009, CHHS initiated an RFI process to identify the closest fit for a governance entity. Through this process the State expects to work closely with an organization to shape it into a governance entity that meets both federal requirements as well as the requirements identified by the state and detailed in the next section. California intends to select the governance entity by December 31, 2009. Once selected, California will contract directly with the governance entity to perform statewide HIE convening, coordinating, and management activities.

4.3 Role of the Governance Entity

The current HIE planning process is being carried out so as to align with emerging federal guidance. In addition, California is adding to the governance entity requirements based on state and stakeholder requirements defined through the planning process described in Section 2. As such the governance entity to be identified will be required to:

- Be a not-for-profit organization under California Law
- Be private-sector led with State government collaboration and representation on the board
- Have a diverse board composition from multiple types of organizations from regions throughout the state
- Be seen as a trusted, transparent, independent and collaborative organization for education, negotiation and decision-making among diverse stakeholders
- Have the ability to convene and coordinate a state-wide public-private collaborative process for Health Outcomes, Privacy and Security, Technical Approach, Sustainability, and Health IT Adoption
- Adopt a contractual model of adherence to legal, business and technical rules that are adopted through the collaboration process whereby stakeholders will agree to abide by these rules and to processes to enforce them
- Abstain from inserting itself into operations except as requested by and driven from the stakeholders.
- Have the ability to manage complex, integrated work streams across stakeholder and subject matter spectrums
- Have experience in the development and administration of grant-making processes, consistent with State and Federal guidelines
- Have the ability to define with Stakeholders and participating HIEs the need for shared services and the specific means by which those services will be delivered
- Have experience in raising funds from multiple sources – both public and private

- Employ robust administrative and financial processes to support transparency and accountability, including adherence to GAAP and all federal and state laws

The HIE Governance Entity will need to evolve its governance structure to become not only an organization that can accelerate development and adoption of HIE but also one that can play an on-going institutional role in supporting, monitoring and improving sustainable and self-supporting statewide HIE services in California. We expect that the HIE Governance Entity will evolve a multi-tiered organizational structure to accomplish its work, consisting of:

- A diverse board of directors that will be comprised of qualified thought leaders from a broad spectrum of stakeholder groups

- A working group or committee structure of subject-matter experts that can study and recommend policy decisions to the board

- A professional staff that can provide the necessary level of support to the board and working groups.

CHHS will work with the governance entity to coordinate activities across California and its many stakeholders, including Medi-Cal, State and local public health programs. The governance entity primary responsibilities would at a minimum include:

- Developing an operational plan that addresses the key components for statewide HIE services identified in this strategic plan and using this plan as the starting point. It is anticipated that these efforts are substantial and it will require consistent effort and coordination to avoid silos.

- Establishing a technical architecture that leverages California's information technology infrastructure (e.g., leveraging systems used in California hospitals, providers, health plans, health information organizations, etc.) to enable the rapid propagation of information exchange services across the state.

- Convening a broad array of providers and other stakeholders to agree to and support a set of shared services.

- Ensuring that the specific issues and needs of safety net providers are considered and addressed so that an equitable foundation for success is established.

- Determining the most efficient way to spend limited funding to support the identified priorities of lab data exchange, pharmacy / Rx history, continuity of care, and public health, and other priorities as identified by the institutions engaged in health information exchange.

- Perpetuating and supporting HIE beyond stimulus funding by identifying sustainable business models and implementing them through a business plan.

- Adhering to all Federal accountability and transparency requirements as well as the

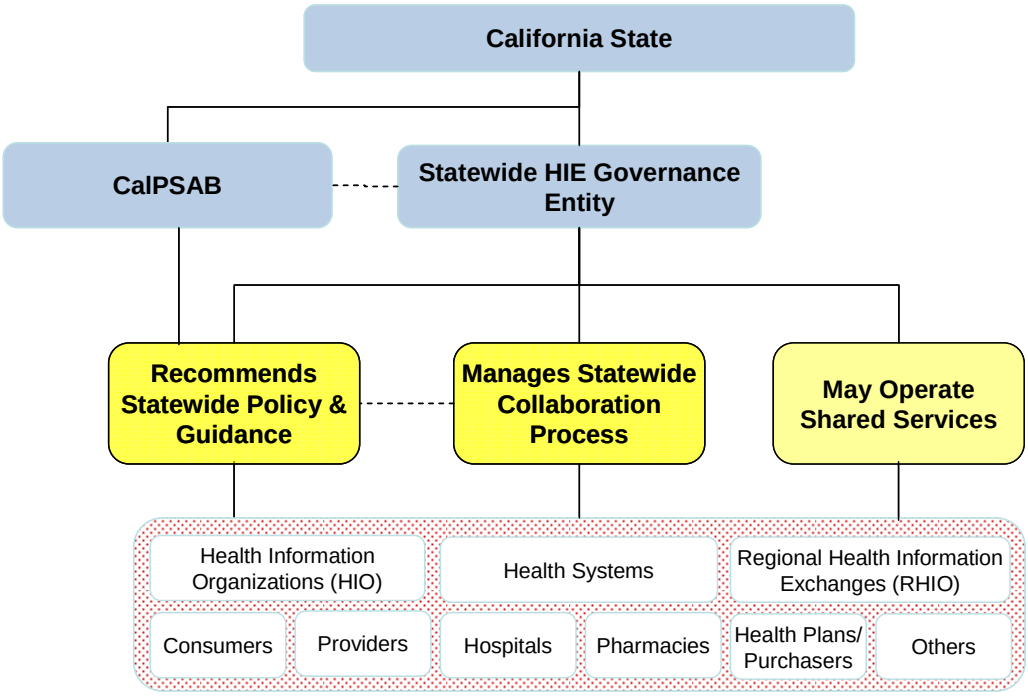
accountability and transparency requirements identified in Section 4.4.

The HIE Governance Entity's responsibilities fall into three primary areas:

Convene	Coordinate	Manage
• Provide neutral forum for all stakeholders • Educate constituents & inform HIE policy deliberations • Advocate for statewide HIE services • Serve as an information resource for local HIE and health IT activities • Track/assess national HIE and health IT efforts • Facilitate consumer input	• Develop and lead plan for implementation of statewide standards, rules and solutions for interoperability. • Facilitate alignment of statewide, interstate, & national HIE strategies, RECs, Medi-Cal, etc. • Coordinate with CalPSAB around privacy and security policies • Promote consistency and effectiveness of statewide HIE policies and practices • Support integration of HIE efforts with other healthcare goals, objectives, & initiatives	• Issue and manage grants • Develop legal analyses • Oversee accounting and budgeting • Enforce state policy guidance • Possibly contract for statewide shared services such as master patient index • Evaluate and assess progress • Develop accountability measures • Develop sustainable business models for HIE

The diagram below presents the conceptual view of the relationship between the State, the HIE Governance Entity, CalPSAB and stakeholders.

Figure 1: HIE Governance Relationship Model



4.4 Accountability and Transparency

Through this plan, a number of measures will be put into place to ensure accountability and transparency of the governance entity, its use of federal, state and private funds, as well as HIE operations. These include:

- Contract between the state and the governance entity.
- CHHS participation on the board of governance entity.
- A governance structure whereby directors and officers are responsible for working with management to set strategy and adopt policies for HIE operation and subsequent oversight.
- Documented financial and operational policies and procedures that include reporting mechanisms to track expenditure and activities of the governance entity as well as from any entity to which it grants funding.
    - To maximize the transparency and accountability of funds authorized under the American Recovery and Reinvestment Act of 2009 (Public Law 111-5) (ARRA) as required by Congress and in accordance with 45 CFR 74.21 and

92.20 “Uniform Administrative Requirements for Grants and Agreements”, as applicable, and OMB A-102 Common Rules provisions, recipients agree to maintain records that identify adequately the source and application of ARRA funds.

  - Inclusion of all data elements required to comply with the Federal Funding Accountability and Transparency Act of 2006 (Public Law 109-282).

- Documentation of organization activities that are open to the public and described in an annual activities report. This is also important to ensure trust and buy-in of all stakeholders.

5. Finance

5.1 Sustainability

The creation of a robust health information exchange infrastructure in California will depend on its ability to secure the financial capital to build infrastructure capabilities and develop ongoing revenue streams to maintain operations. Designing, piloting and implementing interoperable HIE is a complex, multi-year process requiring a long-term commitment of funds. In addition to this complexity, there are a few entrenched tensions that must be reconciled. First, conventional wisdom is that while the burden of interoperability falls on providers, the anticipated benefit of cost efficiencies accrues to the payers. Second, it will be some time before the savings that are enabled through HIE are demonstrable and defensible. It is critical that all stakeholders realistically understand the timeline and are committed to that timeline.

The HIE Governance Entity will play a critical role in developing sustainable business models for HIE in California by undertaking activities such as:

- Incentivizing information exchange among the "trading partners" of providers (labs, pharmacies, radiology, etc.) and thus in helping to create demand for HIE products and services.

- Creating and implementing shared directories and technical services to facilitate statewide HIE services.

- Convening stakeholders and developing policy recommendations for business models that may require State legislative or regulatory action.

The HIE Governance Entity will have a critical role in considering and recommending how ARRA administrative matching funds and Medicaid and Medicare "meaningful use" incentive payments can be used to support development of sustainable business models for HIE.

5.1.1 Start up Capital

ARRA grant programs authorized in HITECH represent significant funding streams to jumpstart state upfront capital programs. In addition to the ONC State HIE Cooperative Agreement Program, HITECH includes $46.8 billion or more in incentive payments to eligible professionals for adoption of meaningful use through certified EHR technology. The legislation establishes connectivity to an HIE as one of the criteria for a provider to be treated as a meaningful user. HITECH also includes the creation and support of regional health information technology centers ("RHITECs") to provide technical assistance and accelerate HIE connectivity. Careful consideration has been given on how best to coordinate HITECH grant resources and maximize available efficiencies.

In addition to the HITECH grant funds, HITECH authorizes a 90 percent federal match for

expenditures incurred by states in administering the EHR payments and enabling the Medicaid technical architecture to accommodate statewide HIE services and health IT adoption.[27] Medi-Cal will work closely with state leadership to explore both start up capital and ongoing funding options through these funds.

Recognizing that federal funds through ARRA are inadequate to meet upfront capital requirements for statewide HIE services, California may choose to explore other options that have been effectively utilized by other states including capital budgeting, special purpose funds, and special assessments.

- Capital funding through bonds has been successfully used by several states to support statewide health IT projects. In Rhode Island, the state established a $20 million revenue bond to create the state's HIE. The revenue bond is contingent on contributions from other stakeholders such as health plans. The state will pay for the share of costs for public program populations. Given California's current fiscal situation, General Obligation bonds are not likely feasible. An analysis of the potential to use lease-revenue bonds should be undertaken.

- Special purpose funds refer to funding sources that are not subject to traditional legislative appropriation processes, such as settlements derived from legal cases or federal Medicaid waivers. In June 2007, Connecticut allocated the transfer of a total of $1 million over a two year period from the Tobacco and Health Trust Fund for the Connecticut Health Information Network (CHIN).

- Special assessments. The primary objective of a special assessment is to advance a benefit that is targeted in nature. The Lifeline assessment charged by telephone companies to consumers to support low cost services for the very poor is an example of a special assessment. In order to support its state-level HIE efforts, Vermont used a special assessment to create the Vermont Health IT Fund. Beginning October 1, 2008, each health insurer operating in Vermont began paying a quarterly fee into the fund. [28]

5.1.2 Ongoing Operations

The goal of achieving statewide interoperability does not end with implementation. In order to remain viable over the long-term, users of HIE must determine that it delivers value and are thus willing to support it. To do so, HIE participants must participate in its development to support the prioritization of HIE components and the HIE development and implementation process. This participation provides an opportunity to leverage the participants' infrastructure and

[27]Department of Health and Human Services. American Recovery and Reinvestment Act - Improving Accountability and Information Technology Security." Centers for Medicare & Medicaid Services: Medicare and Medicaid Incentives and Administrative Funding". May 19, 2009, page 3. http://www.hhs.gov/recovery/reports/plans/hit_implementation.pdf

[28] Vermont Information Technology Leaders. "Press Release: Vermont's Legislature Establishes Health IT Fund." May 18, 2008.

expertise, and allows all stakeholders to articulate their expected HIE value proposition. As with the identification of capital mechanisms, states typically identify a set of core principles to guide the identification and selection of sustainability options. Clearly how HIE services are paid for by providers and payors will be a vital issue for the State and HIE Governance Entity to tackle – it is imperative that the cost of these services to be equitably spread and shared among all stakeholders who will benefit both directly and indirectly from ARRA incentives.

New models are being tested that leverage HIE to complete transactions electronically that are traditionally processed by paper, such as Social Security Administration's recently announced grant program to process disability claims requests through the connection to the NHIN. As robust statewide HIE service infrastructure develops, it is anticipated that additional administrative, clinical, and other viable business models will emerge.

The HIE Governance Entity will need to quickly establish a workgroup focused on sustainability of all efforts (including local and regional efforts), the California Telehealth Network and public health reporting. [29]

29

https://www.fbo.gov/index?s=opportunity&mode=form&id=df343db1bf298ef9336bb8da0e723863&tab=core&cck=1&au=&ck=. Accessed 8/23/2009

6. Technical Infrastructure

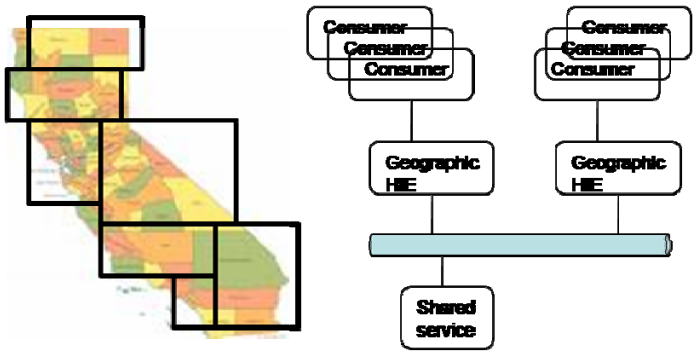
California is committed to a statewide technical architecture that leverages the existing investments of community HIEs and health care providers and allows for regional flexibility while maintaining overall statewide standards and protocols. These existing efforts have produced outstanding results within their institutional foci. In order to take these efforts to the next level, California must work to create a technical architecture that will integrate these independent efforts for the benefit of both state level and community efforts. By adopting a standards-based approach to interoperability, California can create an environment that enables the development of shared services based on existing capabilities where possible. In addition, California can align these efforts to satisfy the requirements for ARRA funding, especially by creating services that fulfill meaningful use criteria.

6.1 Context

While California has a strong point of view about its approach to statewide technical architecture, there were divergent opinions among stakeholders about some important issues. There was broad agreement that the state should identify and enforce standards-based protocols for interoperability based on federal standards and the NHIN implementation platform. There was also broad agreement that there were significant advantages to developing shared services that could be made available statewide.

However, there were divergent opinions about the connectivity model to achieve these broad objectives. Some favored a geographic exclusivity model whereby the state would create geographical regions, and access to shared services would have to proceed through a single designated entity within each region.

Figure 2: Exclusive HIE Geographies

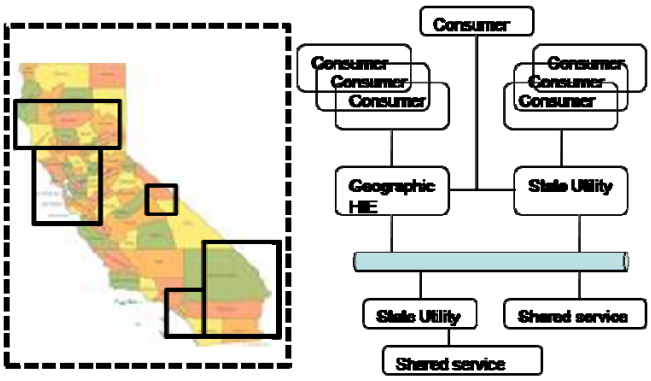


Exclusive geographic entities provide connectivity to state services or other geographies

Proponents argued that this hierarchical connectivity model would promote more rapid assimilation of information sources by preventing competition that confuses providers of information with limited resources to connect to an HIE, improving liquidity of HIE in California. Further, it would eliminate "white spaces", ensuring that all Californians have access to HIE resources.

A second approach articulated is a state-supported utility provider model.

Figure 3: State Supported Utility

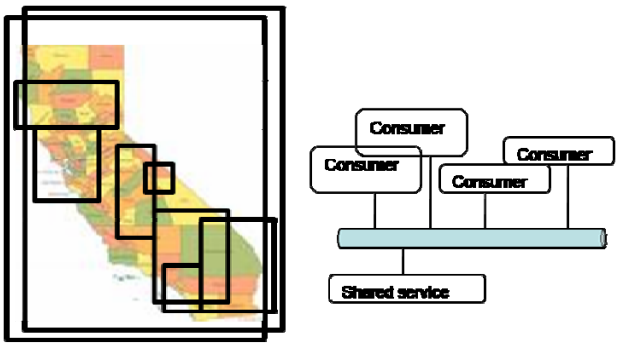


Various geographic exchanges exist and the utility provider overlaps, enhancing geographic exchanges and filling in "white spaces"

The state government designates a preferred provider of certain services that can also serve as a provider of last resort to institutions without the resources or availability of a regional HIE to which they can connect. The utility provider would have significant economies of scale, lowering costs and making services more rapidly available.

A third point of view was expressed in favor of a neutral connectivity model, a direct peer-to-peer connection approach. Under this model no discrimination is made between entities exchanging information. Any entity that meets the criteria established can connect and be both a provider and consumer of services.

Figure 4: Neutral Connectivity Model



Any entity that complies with the statewide technical architecture and policies can connect, either to request services or to be a provider of services, or both

The argument in favor of this model was that it has the most flexibility to adapt to California's complex healthcare ecosystem, where many large institutions have significant geographic distribution across California. A further advantage was that any entity can be a shared service provider, making it easier to leverage existing capabilities.

California favors this neutral connectivity model for the above reasons and because further:

- It pushes operations and deployment away from a centralized model and emphasizes governance and coordination at the state level.

- It enables new shared services to be more innovative and more rapidly deployed since any entity is capable of being a shared service provider.

6.2 Approach

The statewide technical architecture to implement the neutral connectivity model is defined by principles, patterns and processes as described below.

6.2.1 Principles

The principles listed below will be followed to achieve a statewide technical architecture that is both flexible and adaptable:

- The process for defining the statewide technical architecture will be open and inclusive, and will emphasize the precise identification of the needs of the community (patients, providers, payors, vendors, government, etc.), the identification of priorities and a clear statement of the value proposition of HIE.

- Aggressively identify and deploy shared services in alignment with "meaningful use" as defined by the federal government. California has substantial capabilities based on the enormous investments already made, and these investments should be leveraged into shared services available on a state wide basis. Priority should be given to those services identified in the ONC State HIE Cooperative Agreement Program: eligibility and claims, electronic prescribing and medication history, lab orders and results delivery, public health reporting, quality reporting, summary exchange. The program further encourages the development of shared infrastructure services such as: MPIs (providers, labs, radiology providers and health plans), patient matching, provider matching, consent management, secure routing, advance directives, and clinical messaging.

- Build upon federal standards and implementation efforts including NHIN and the ONC HIT Standards Committee. These standards are rapidly being adopted by vendors, institutions, and other states, and basing California's approach on these standards will accelerate adoption of the statewide technical architecture. Further, support of these protocols is a requirement to receive ARRA funds.

- Adoption of protocols based on open standards. The statewide technical architecture will adopt a set of protocols at both the system level (e. g. TCP/IP, HTTP, HTML, WS-Security) and in healthcare specific contexts (e. g. HITSP TP13, HITSP C32, HL7 2.5). The use of protocols enables 'loose coupling' so that different systems can proceed with independent development and yet interoperate through the adopted protocols.

- Adopt a set of shared services that manage integration with legacy systems rather than demanding that the integration be placed into the legacy systems.

- Use the latest binding possible. Protocols in healthcare are typically not stable, and to ameliorate this problem the statewide technical architecture will apply the late binding principle at the protocol level to insulate underlying implementation shifts. Late binding allows for flexibility of a system by delaying binding a specific implementation until there is sufficient information to make a precise choice.

- NHIN and federal standards adopted by the ONC HIT Standards Committee and adopted by HHS are necessary but not sufficient to implement a functional network. Policy decisions with technical implications must be addressed, for example: who controls the issuance and revocation of digital certificates used for authentication, and who specifies what models of authentication are implemented within the standards frameworks defined through the ONC HIT Standards Committee and adopted by HHS and implemented in the NHIN. The consent framework specified by the ONC HIT Standards Committee and adopted by HHS and implemented in the NHIN platform will also need to be closely examined and possibly supplemented in order to properly implement California's legal and regulatory requirements for consent and authorization. Many similar issues must be addressed; the essential principle is to recognize the importance of this effort and tackle it through the establishment of appropriate processes.

- Vendor and technology neutrality. This principle is somewhat redundant because the use of open protocols and standards-based approaches assures a large measure of vendor and technology neutrality. It is stated here to emphasize the importance of being diligent around these issues given the dynamism in the marketplace.

6.2.2 Patterns

Architectural patterns describe coherent frameworks that help guide implementations that adhere to the architectural principles. California will base its statewide technical architecture on these patterns:

- Service Oriented Architecture (SOA). SOA is a well understood architectural pattern that defines services implemented by service providers and utilized by service consumers. Interactions between providers and consumers of services are standardized through messaging protocols, enabling widespread interoperability among distributed systems.

- Enterprise Service Bus (ESB). An ESB is an architectural pattern often used to implement SOA. It provides a mediation layer that has advantages when implementing an SOA, including translating various lower-level messaging formats so that service providers and consumers are less dependent upon specific formats, and the use of a service registry to enable late binding between service providers and consumers. These patterns improve interoperability of an SOA.

- A Peer to peer services topology will be considered. This pattern specifies that there are no constraints on the connectivity allowed between service providers and consumers. This is the most flexible connectivity pattern, enabling any service consumer to connect to any service provider. Note that more constrained connection topologies (for example a hierarchical connectivity topology that forces all service consumers to connect through a specified set of network nodes) can be imposed through policy.

6.2.3 Processes

The HIE Governance Entity will bring together California's state and private technical leaders to pursue the following activities:

- Develop a collaborative process with strong technical representation from stakeholders so that the technical architecture is consensus-based and practical.

- Develop use cases that span multiple systems as well as multiple entities to link the statewide technical architecture to the delivery of value in the healthcare environment. Patient-centric use cases must be developed to ensure that implementation maintains a focus on patient involvement and inclusion.

- Prioritize implementation activities to correspond to meaningful use objectives to maximize ARRA funding opportunities.

- Develop the policy guidance for the minimum necessary statewide technical architecture to enable practical implementations based on the architectural patterns, for example specifying service level agreements for service providers.

- Ensure access to Medi-Cal data and other state health IT resources by collaborating with CHHS to create interfaces to these assets that are interoperable through the statewide technical architecture.

- Develop the enforcement mechanisms to ensure adherence with technical and policy guidance.

- Incorporation of universal design principles to ensure access for people with disabilities.

- Identify and prioritize candidate shared services, and coordinate implementation.

- Leverage the collective power of the collaborative to create favorable arrangements with service providers.

- Work with other states that are engaging in similar efforts and incorporate applicable best practices.

7. Legal Policy

7.1 Privacy and Security

California originally adopted state statutes that establish standards for confidentiality of individual health information in 1979 which were significantly amended in 1981. As described in Section 2.4, the California Privacy and Security Advisory Board (CalPSAB) has been established under the auspices of the Secretary of the California Health and Human Services Agency as a platform for collaboration between government and the private sector to develop and propose HIE privacy and security policies for California.

CalOHII has conducted a detailed inventory and analysis of the existing state laws in California that apply to privacy and security of personal health information. , CalPSAB is finalizing a set of initial priority targets to harmonize existing policies and requirements that may be interpreted differently, are not consistent with one another, and may not be uniformly applied. CalPSAB has established a committee structure with a flexible multi-year agenda of tasks to endeavor to resolve the issues being identified.

California believes that it is imperative to develop widely-accepted legal and business rules with uniform consent forms and procedures that will enable the exchange of health information for clinical treatment purposes while assuring confidentiality and security of the information. The conflicting understanding of the law impacts the existing mechanisms and procedures in California and put at risk the efficient and effective exchange of health information.

CalPSAB will address these policy issues by engendering and fostering its statewide collaborative process that will initially result in a set of guidelines to which participants in HIE in California will agree to adhere . CalPSAB will continue to benefit from the experiences in other states where multi-stakeholder collaborative processes have also developed legal rules for the implementation of privacy and security principles in the actual exchange of clinical data, and where contractual mechanisms are being developed to enforce adherence to those rules. The HIE Governance Entity will provide support to the CalPSAB to enhance its collaborative process and, where appropriate, augment its knowledge of other states' efforts.

7.2 Development of Policies and Rules

CalPSAB will utilize its statewide process for further development of statewide privacy and security policy guidance. The HIE Governance Entity will establish a statewide process for development of state HIE policy guidance for legal, technical and business rules, other than privacy and security, such as, but not limited to software/hardware compatibility, data standards, data format, network connectivity, sustainability, fee limitations, disclaimers, user liability not related to privacy and security, indemnifications, insurance, etc . The HIE Governance Entity will oversee the process to develop a contractual framework for assuring adherence to the legal, business and technical rules that are developed through this process and CalPSAB process.

Consistent with the neutral connectivity technical model that California proposes to adopt (see Section 6.1), the HIE Governance Entity is expected to require that participants in the statewide

collaborative process bind themselves by contract to participate in the HIE Governance Entity's processes and to adhere to the statewide policy guidance that is adopted through the two processes described above.

The board of directors of the HIE Governance Entity will have specific "dotted-line" reporting authority to its HIE Policy Process to ensure full coordination of the working group's activities with the regulatory role and agenda of CalPSAB and the Secretary of the Health and Human Services Agency. The HIE Governance Entity's HIE Policy Process working group will be charged with coordinating their work so that CalPSAB's work to date can be leveraged and inform its the statewide collaboration process.

The HIE Policy Process will identify priorities and objectives that will need to be informed by and coordinated through the HIE Governance Entity. When issues of legal conflict or disharmony are identified, the HIE Governance Entity in conjunction with its HIE Policy Process working group will need to collaboratively identify a pathway for resolution, including recommending legislation to CHHS, if necessary. The HIE Policy Process and CalPSAB shall collaborate when priorities and objectives overlap or intertwine.

The objective of this joint work will be to achieve the following:

- Ensure the flow of individual health information to improve the quality of health care while safeguarding the privacy of the information,
- Achieve clarity and uniformity in the application of privacy and security rules,
- Assure security in the exchange of clinical data,
- Harmonize California law, court orders, regulations, guidelines, and federal law,
- Coordinate California's requirements with evolving rules at the federal level, and
- Strive to harmonize disparate requirements of neighboring states to enable efficient administration.

For the CalPSAB, initially the goal is to develop trust and consensus around basic privacy and security principles, propose resolution to current statutory disincentives to permitting data exchange, and advance policies and forms for patient consent. More complex issues such as consumer access and secondary uses of data will then be addressed as part of a set of uniform statewide policies regarding purposes for use and disclosure, authentication, authorization, access. and audit. For the HIE Policy Process, initially the goal will be to develop the contractual framework which will be utilized between entities participating in the HIE.

7.3 Contractual Framework for Enforcement of Privacy and Security Policy

An essential element of a comprehensive and uniform statewide policy framework for the exchange of health information is the foundation of trust that must exist between patients on the one hand and providers and users of data on the other, and among the providers and users of data themselves. California has concluded that the most effective way to establish this level of trust is

to provide an opportunity for participants in HIE to have an open and transparent process for development of policy and to agree to adhere to the policies that result.

California has examined the experience of other states where adherence to common and uniform state policies has been sought to be enforced through the terms of grant agreements governing state funding provisions or as a condition of participation in the use of state resources such as technology platforms. California has concluded that each of those models has deficiencies that can be initially addressed through a contractual model of participation and adherence.

In the contractual model, participants will be invited to participate in the statewide collaboration process to develop legal, business, and technical rules that will govern health information exchange in California. The resulting agreement will require the HIE participants to adhere to the rules that are adopted through this process. A component of the contractual framework may be a common data use and reciprocal services agreement (a "DURSA") so that each HIE participant will know exactly the legal, business, and technical rules, including privacy and security guidelines to which each participant is bound.

The HIE Governance Entity will ensure that appropriate oversight and enforcement mechanisms are established. Mechanisms could include an arbitration forum in which disputes can be resolved, and authority to withdraw access to statewide shared services for a non-conforming data requester, provider, or user.

8. Evaluation

8.1 Overview

Health IT is a potentially transformative yet its value is still largely unproven. Achieving statewide HIE goals is a systems-focused effort, involving multiple stakeholders, and incremental processes. Additional work needs to be done to define the measures and mechanisms that will be used to assess the near term effects and systemic impact of statewide HIE development efforts. The ARRA highlights the importance of supporting health care system improvements e.g., the quality of health care, such as promoting care coordination and improving public health.

California is dedicated to demonstrating that progress has been made toward these ends by employing a robust evaluation program. The goal of the evaluation effort is to demonstrate the economic and quality value of health IT investments and the effects of investments on providers and consumers, determine what is working and what needs to be improved, disseminate these lessons learned broadly within the state as well as at a regional and national level, and iteratively refine health IT in the state.

California will allocate a portion of the funding received through the State Health Information Exchange Cooperative Agreement Program to an independent evaluation process. Likewise, as the long-term funding model is defined, it will include a mechanism to fund on-going evaluation and analysis.

The state and the Governance Entity will work jointly together to define the details of the evaluation process as part of the Operational Plan. In addition, California will leverage technical assistance offered from the federal government. At a minimum, the evaluation process will include:

- Continuous evaluation, reassessment and revision of the state strategic and operational plans.
- An annual evaluation that will be coordinated with the national program evaluation.
- Reporting requirements specified in the State HIE Cooperative Agreement program plus additional reporting requirement identified during the development of the operational plan.
- Performance metrics specified in the State HIE Cooperative Agreement program plus additional performance metrics identified during the development of the operational plan.
- Coordinate with national program evaluation and leverage technical assistance from the federal government for the California evaluation in an effort to implement lessons learned that will ensure appropriate and secure HIE resulting in improvement in quality and efficiency.

8.2 Reporting Requirements

Specific reporting requirements required by the ONC State HIE Cooperative Agreement program are included below. This list will be augmented with additional criteria developed in support of the operational planning effort.

- Governance
    - What proportion of the governing organization is represented by public stakeholders?
    - What proportion of the governing organization is represented by private sector stakeholders?
    - Does the governing organization represent government, public health, hospitals, employers, providers, payers and consumers?
    - Does the state Medicaid agency have a designated governance role in the organization?
    - Has the governing organization adopted a strategic plan for statewide HIT?
    - Has the governing organization approved and started implementation of an operational plan for statewide HIT?
    - Are governing organization meetings posted and open to the public?
    - Do regional HIE initiatives have a designated governance role in the organization?
- Finance
    - Has the organization developed and implemented financial policies and procedures consistent with state and federal requirements?
    - Does organization receive revenue from both public and private organizations?
    - What proportion of the sources of funding to advance statewide HIE services are obtained from federal assistance, state assistance, other charitable contributions, and revenue from HIE services?
    - Of other charitable contributions listed above, what proportion of funding comes from health care providers, employers, health plans, and others (please specify)?
    - Has the organization developed a business plan that includes a financial sustainability plan?

- Does the governance organization review the budget with the oversight board on a quarterly basis?
- Does the recipient comply with the Single Audit requirements of OMB?
- Is there a secure revenue stream to support sustainable business operations throughout and beyond the performance period?

- Technical Infrastructure
  - Is the statewide technical architecture for HIE developed and ready for implementation according to HIE model(s) chosen by the governance organization?
  - Does statewide technical infrastructure integrate state-specific Medicaid management information systems?
  - Does statewide technical infrastructure integrate regional HIE?
  - What proportion of healthcare providers in the state are able to send electronic health information using components of the statewide HIE Technical infrastructure?
  - What proportion of healthcare providers in the state are able to receive electronic health information using components of the statewide HIE Technical infrastructure?

- Business and Technical Operations
  - Is technical assistance available to those developing HIE services?
  - Is the statewide governance organization monitoring and planning for remediation of HIE as necessary throughout the state?
  - What percent of health care providers have access to broadband?
  - What statewide shared services or other statewide technical resources are developed and implemented to address business and technical operations?

- Legal/Policy
  - Has the governance organization developed and implemented privacy policies and procedures consistent with state and federal requirements?
  - How many trust agreements have been signed?
  - Do privacy policies, procedures and trust agreements incorporate provisions allowing for public health data use?

8.3 Performance Measures

Performance measurement is a critical element of continual improvement, particularly in a situation like this where implementation will span several years. As such, the measures will necessarily evolve over time, so that forward progress is accurately identified and charged. This section defines some preliminary measures applicable to the implementation phase of the cooperative agreement. Additional performance measures will be identified as part of the development of the operational plan. This initial set of measures is intended to establish state-specific and national perspectives on the degree of provider participation in HIE enabled state level technical services and the degree to which pharmacies and clinical laboratories are active trading partners in HIE. E-prescribing and laboratory results reporting are two of the most common types of HIE within and across states.

- Percent of providers participating in HIE services enabled by statewide directories or shared services. ONC will negotiate with each state to determine best way to further specify this measure based on the statewide directories and shared services pursued within each state under this program.

- Percent of pharmacies actively supporting electronic prescribing and refill requests.

- Percent of clinical laboratories actively supporting electronic ordering and results reporting.

Recipients will also be required to report on additional measures that will indicate the degree of provider participation in different types of HIE particularly those required for meaningful use. Future areas for performance measures that will be specified in program guidance will include but are not limited to providers' use of electronic prescribing, exchange of clinical summaries among treating providers, immunization, quality and other public health reporting and eligibility checking.

California Health Information Exchange Operational Plan

April 5, 2010

EXECUTIVE SUMMARY

California is committed to advancing health information technology (HIT) and health information exchange (HIE), and is pleased to submit the California HIE Operational Plan (Operational Plan) for review by the Office of the National Coordinator for Health Information Technology (ONC) under the State HIE Cooperative Agreement Program. The Operational Plan addresses ONC's stipulated domains in the State HIE Cooperative Agreement Program, and supports Governor Schwarzenegger's Executive Order S-06-07, which calls for statewide HIT adoption to increase quality, strengthen transparency and promote accountability in the health care sector.[1]

Statewide HIE Planning

To create the Operational Plan, the State and California's HIE stakeholders collaborated in an open and transparent statewide HIE planning process. This process was overseen by the California Health and Human Services Agency, in coordination with several state agencies, and began with the development of the Strategic Plan and the selection process for the State Health Information Exchange Governance Entity. Through the collaborative efforts of public and expert workgroups, the financial and technical models for statewide HIE were developed, as well as strategies and tactics to engage providers, enable a patient-centric experience, and provide better care for vulnerable and underserved populations. Throughout the process, the State ensured widespread involvement and transparency of activities through stakeholder bulletins, open meetings, and a collaborative drafting process for the Operational Plan conducted using a wiki - a collaborative website. The GE will develop more specific workplans and milestones as part of an implementation planning process to be conducted within the 90 days following the publication of the Operational Plan. Throughout this time period, the GE will continue to provide all stakeholders and the public the opportunity to comment on the Implementation Plan, as well as on the Strategic and Operational Plans, as they are revised and refined.

Governance

Responsibility for leading this process will rest with Cal eConnect, the State-selected GE, in concert with California Health and Human Services Agency (CHHS), the Department of Health Care Services and other state agencies. In the planning process, the workgroups, representing both public and private stakeholders, developed the HIE governance model to oversee the technical infrastructure, manage the related policies and procedures, and determine funding mechanisms. The governance framework for Cal

[1] Executive Order S-06-07 by the Governor of the State of California, March 14, 2007. http://gov.ca.gov/index.php?/executive-order/5626/.

eConnect ensures close coordination with federal, state and private efforts in HIT. Importantly, the governance framework provides for coordination among Medi-Cal and state public health programs to support provider participation in HIE, as required for Medicaid meaningful use incentives.

Landscape and Capacity

California is well-positioned to adopt HIT, with high levels of electronic health record (EHR) adoption and several regional HIEs; however, its large, diverse health care delivery system is characterized by provider organizations of widely varying sizes, funded by a mosaic of payment mechanisms. This heterogeneity is further complicated by the diversity of California's population, 20% of whom lack health insurance.[2] The Operational Plan describes a stepwise plan to leverage current status of regional HIE in California to move to operational statewide HIE.

Technical Infrastructure for Statewide HIE Services

The technical architecture for statewide HIE services leverages the achievements of regional and local health information organizations (HIOs), while connecting individual providers to services they require for meaningful data exchange. The technical architecture for statewide HIE services in California is detailed in the Operational Plan as a set of core and non-core services, an infrastructure model that accommodates the basic data exchange needs of all providers in the state for Stage 1 of the meaningful use criteria for EHRs, while enabling connections to more advanced services needed for care improvement. The technical architecture stipulates specific standards for participation by regional exchange organizations and individual providers, and employs several use cases to exemplify how exchange will work in practice.

In addition, the Operational Plan includes a process and implementation plan for connecting California providers and patients with other states and the federal information services including Nationwide Health Information Network (NHIN) and NHIN Direct, and to coordinate with other state and federal grant programs.

Business and Technical Operations

The development of policies and procedures for statewide HIE services is a collaborative effort, with state-level shared core services operated through Cal eConnect. The Operational Plan details the process and workplan, starting with the recommendation for Cal eConnect to develop the operational

[2] *Number of Uninsured Jumped to More Than Eight Million from 2007 to 2009*, UCLA Center for Health Policy Research, March 16, 2010: http://www.healthpolicy.ucla.edu/pubs/Publication.aspx?pubID=401

requirements for shared services. After the requirements are determined, Cal eConnect has the authority to decide how services are developed, retains authority over the procurement process and ensures contractual compliance with state policy guidance, including remediation for contract violations or unmet milestones. Cal eConnect will also develop standard operating procedures (SOPs) for its core services. These SOPs will be referenced in all contractual and participatory agreements between Cal eConnect and participants in HIE.

The State will continue to manage information systems related to Medicaid Management Information System (MMIS) and public health programs, and will coordinate requisite interfaces with state-level core services.

Patient and Consumer Engagement

Throughout the planning process, stakeholders expressed the need for a patient-centric health care experience for all Californians. The Operational Plan details how California will augment outreach and education strategies to engage patients with a model for services that place the patient at the center of each data transaction. This commitment to patient-centric care is articulated in the use cases supporting the proposed technical architecture.

Vulnerable and Underserved Populations

Importantly, the planning process included a detailed assessment of the unique needs of vulnerable and underserved populations, specifically in terms of greater needs for enhanced privacy provisions, increased health literacy, administrative simplification, specific and dedicated data management tools, and a focus on greater coordination of care.

Legal and Policy

The Operational Plan details the means to develop privacy and security guidance, ensure that guidance is observed by all participants in statewide HIE services, and employ robust administrative and financial processes to support sustainability, transparency and accountability to stakeholders in California. The Operational Plan also details the California Privacy and Security Advisory Board's (CalPSAB's) leadership in developing guidance and SOPs that ensure privacy and security of protected health information.

Financial Model for HIE Services

The State expects to meet the needs of its citizens through a combination of public and private investments in HIT and HIE and the potential of leveraged purchasing. Cal eConnect will sustain the HIE infrastructure using predictable revenues sufficient to support operations and plans to adopt a mixed delivery model that will include both centralized and local/regional HIE services.

It is anticipated that revenues will be derived from the broadest possible sources: public and private payers (e.g. per member per month), data providers (e.g., laboratories, radiology groups, hospitals) and fee models (e.g. utility add-ons such as special land and cellular telephone line excises), or other broad based revenue sources. The Operational Plan contains guidance on updating the detailed budget provided as part of the State HIE Cooperative Agreement Program application.

Evaluation

The Operational Plan concludes with a description of the evaluation logic model and performance metrics for achieving the objectives of statewide HIE. An independent evaluator will use the logic model and metrics to assess the progress of building and deploying statewide HIE while meeting the needs of all stakeholders in California.

Conclusion

The Operational Plan reflects the high priority that California places on advancing HIE and expanding the adoption of EHRs, while ensuring that the interests of consumers and the general public are protected. This commitment is articulated in clearly defined goals established to achieve effective HIE in California.

1. Introduction

The Health Information Technology for Economic and Clinical Health Act (HITECH) provides a tremendous opportunity to accelerate HIT adoption throughout the state, as well as strong incentives to rapidly advance HIE, with a particular focus on Medicare and Medicaid providers. HITECH commits up to $27.3 billion in grants, loans and incentives to Medicare and Medicaid providers to support meaningful use of EHR technology in a secure, patient-centric environment.[3]

In response to HITECH, the Centers for Medicare and Medicaid Services (CMS) issued a Notice of Proposed Rule Making (NPRM) establishing the EHR Incentive Program, which provides a framework for defining "meaningful use of certified EHR technology" and the rules by which eligible professionals and eligible hospitals will demonstrate meaningful use for Medicare and Medicaid programs. The proposed approach to meaningful use is an incremental, phased implementation across three stages, reflecting the expectation that the HIT infrastructure will change over time. The Operational Plan focuses on meaningful use criteria for which HIE is "essential," and those for which it is an "enabler," recommending strategies to optimize access to incentives while moving toward HIE.

California is well positioned to respond to ARRA and HITECH requirements, and is committed to advancing HIT and HIE, as demonstrated by Executive Order S-12-06, issued in July 2006, which resulted in the California Health Information Technology Study.[4,5] In March 2007, Governor Schwarzenegger issued Executive Order S-06-07, calling for the advancement of statewide HIT adoption to increase quality, strengthen transparency and promote accountability in the health care sector.[6] Soon after ARRA was enacted, the Governor appointed a Deputy Secretary, Health Information Technology (Deputy Secretary) within CHHS. In addition, the CHHS Secretary convened an eHealth Advisory Board to provide guidance in the development of the Strategic Plan and the Operational Plan. CHHS is responsible for working with the Office of the State Chief Information Officer (OCIO), the Business, Transportation and Housing Agency, the Department of Managed Health Care (DMHC), the Department of Health Care Services (DHCS, administrators of the Medi-Cal program) and the California Department of Public Health (CDPH) to oversee the State's HIE and HIT related efforts.

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[3] Centers for Medicare and Medicaid Services (CMS) regulatory impact analysis on Notice of Proposed Rulemaking for the EHR Incentive Program. The estimated range is substantially less than the $44.7 billion CMS previously assumed in its ARRA implementation plan.

[4] Executive Order S-12-06 by the Governor of the State of California, July 24, 2006.http://gov.ca.gov/executive-order/2616.

[5] California Health Information Technology Study: Input to the California Health Data Exchange Roadmap, Accenture, January 2007. See http://www.hmohelp.ca.gov/library/reports/news/CA%20HIT%20Study%202007.pdf

[6] Executive Order S-06-07 by the Governor of the State of California, March 14, 2007. http://gov.ca.gov/index.php?/executive-order/5626/.

1.1 Strategic Plan

Over the course of four months, from April to August 2009, the State guided an open, inclusive and transparent planning effort to develop its HIT Strategic Plan, to act as the foundation of the State's Operational Plan and implementation effort.[7] Importantly, the Strategic Plan sets forth a vision for statewide HIE, outlining goals and priority objectives. In addition, it includes an environmental scan of HIT adoption and level of HIE use in California; provides an analysis of technical, business and finance strategies to achieve statewide HIE; outlines requirements for a not-for-profit organization that can function as a statewide GE; and provides an approach to coordinate with Medi-Cal, public health and other health programs to support providers in HIE, as required to obtain meaningful use incentives.

1.2 ONC Application

After completion of the HIT Strategic Plan, CHHS submitted an application to ONC to participate in the State HIE Cooperative Agreement Program, recently receiving confirmation of an award for $38.8 million to promote and support HIE.[8] As part of the application, CHHS received and submitted to ONC collaborative letters of support from 61 organizations, representing broad commitment across California's health care industry. In addition to the $38.8M from the State HIE Cooperative Agreement funding, additional funding has been received by one of the State's applicants to be a Regional Extension Center (REC) - $31 million was granted to the California Health Information Partnership and Services Organization (CalHIPSO, formerly CalREC) to support providers in northern and southern California, excluding Los Angeles and Orange Counties, to adopt EHRs and meet meaningful use criteria. Separate funding was also received for health care workforce development with $31.4 million awarded to California community colleges and not-for-profit organizations, for a total of over $100 million awarded across the state to date for HIT adoption and implementation.

1.3 Operational Plan

The Operational Plan details how the Strategic Plan will be executed to enable statewide HIE. The Operational Plan outlines specific actions and roles of various stakeholders in the development and implementation of HIE services. It includes an annual budget over the four-year grant program, in addition to high-level timelines and major milestones. Importantly, the Operational Plan outlines an approach for continual improvement and evaluation. The Operational Plan is consistent with the

[7] Health IT Strategic Plan: http://www.ehealth.ca.gov/eHealthPlan/tabid/72/Default.aspx
[8] Application for State Health Information Exchange Cooperative Agreement Program: http://www.ehealth.ca.gov/eHealthPlan/tabid/72/Default.aspx.

State HIE Cooperative Agreement Program Funding Opportunity Announcement and addresses all five ONC required HIE domains: [9]

- Governance
- Finance
- Technical Infrastructure
- Business and Technical Operations
- Legal and Policy Issues

1.4 Vision Statement

California's vision is to dramatically improve safe and secure patient and provider access to personal and population health information and decision-making processes, benefiting the health and well-being, safety, efficiency, and quality of care for all Californians

1.5 Goals

The following goals were established to achieve effective HIE in California:

1. Ensure that patients have safe, secure access to their personal health information (PHI), and the ability to share that information with others involved in their care.
2. Engage in an open, inclusive, collaborative, public-private process that supports widespread EHR adoption and robust, sustainable HIE throughout the state.
3. Improve health care outcomes and reduce costs.
4. Maximize California stakeholders' access to critical ARRA funds.
5. Integrate and synchronize the planning and implementation of HIE, HIT, telehealth and provider incentive program components of ARRA.
6. Ensure accountability in the expenditure of funds.

[9] Funding Opportunity Announcement: http://healthit.hhs.gov/portal/server.pt?open=512&objID=1336&mode=2&cached=true.

7. Improve public and population health through stronger public health program integration, bio-surveillance and emergency response capabilities.

1.6 Priority Objectives

California must align its HIE implementation and priorities with federal requirements to support its eligible providers in achieving and demonstrating meaningful use, positioning them to receive the maximum incentive reimbursement and avoid future reimbursement penalties.

The Operational Plan reflects the federal vision for EHR implementation with the goal of supporting providers' achievement of meaningful use in the phased approach as detailed by CMS:

Stage 1 is based on "current available technological capabilities and providers' practical experiences." Stage 1 criteria are effective for 2011 and focus on:

- Electronically capturing health information in a coded format;
- Using information to track key clinical conditions;
- Communicating captured information for care coordination purposes; and
- Reporting of clinical quality measures and public health information.

Stage 2 criteria for 2013, will likely expand upon Stage 1 criteria in the areas of disease management, clinical decision support, medication management, support for patient access to their health information, transitions in care, quality measurement, research and bi-directional communication with public health agencies. For Stage 2, CMS may also consider applying the criteria more broadly to both inpatient and outpatient hospital settings.

Stage 3 criteria for 2015, will likely focus on achieving improvements in quality, safety and efficiency, specifically on national high-priority conditions and decision support, patient access to self management tools, access to comprehensive patient data and improving population health outcomes.

1.7 Scope of Operational Plan

The GE will consider both short- and long-term requirements for determining the scope of HIE and making business and technical decisions. The short-term requirements of the HIE infrastructure in California will focus on those HIE capabilities needed to support the meaningful use criteria and related

EHR certification criteria. Only a subset of these criteria is related to HIE, which may be divided into two groups: criteria for which HIE is an *essential* element and criteria for which HIE is not essential but may be an important enabling capability. Table 1 and Table 2 below list the meaningful use criteria in each group, and the HIE capabilities related to each one. These HIE capabilities, therefore, comprise functional requirements integral to the HIE infrastructure.

The federal government has not yet specified the criteria required for meaningful use beyond 2011. However, given the effort and lead-time required to build-out the HIE infrastructure, it is also important to consider the HIE capabilities that will be needed to support future meaningful use criteria. The meaningful use NPRM provides some general guidance in this area:

> "For other objectives that are reliant on the electronic exchange of information, we are cognizant that in most areas of the country, the infrastructure necessary to support such exchange is not yet currently available. We anticipate raising the threshold for these objectives in future definitions of meaningful use as the capabilities of HIT infrastructure increases. *The intent and policy goal with raising this threshold is to ensure that meaningful use encourages patient-centric, interoperable health information exchange across provider organizations regardless of provider's business affiliation or EHR platform*."[10]

The italicized sentence characterizes the general long-term goals of the HIE infrastructure that are key considerations in short-term planning and implementation decisions.

Table 1. Meaningful Use Criteria for Which HIE is Essential

Meaningful Use Criterion	Relevant HIE Capability
1. Generate and transmit permissible prescriptions electronically.	Infrastructure for an EHR or EHR module to correctly address and securely* transmit an electronic prescription (e-prescribing) to the desired dispensing pharmacy in the specified standard format. The transmission may occur directly or via a third-party.
2. Incorporate clinical laboratory-test results into EHRs as structured data.	Infrastructure for laboratories to securely* transmit structured laboratory results to the EHR or EHR module of the appropriate provider(s) in the specified standard format. The transmissions may occur directly between laboratories and EHRs or via a third-party.

[10] Notice of Proposed Rulemaking Medicare and Medicaid Programs: Electronic Health Record Incentive Program (Document ID CMS-2009-0117-0002)

Meaningful Use Criterion	Relevant HIE Capability
3. Check insurance eligibility electronically from public and private payers.	Infrastructure to securely* query a payer, either manually via a web browser or automatically via Electronic Data Interchange (EDI), in the specified standard format and to receive an electronic response, either via a web browser or automatically via EDI, in the specified standard format. These transactions may occur directly between providers and payers or via a third-party.
4. Submit claims electronically to public and private payers.	Infrastructure to securely* transmit claims from a provider organization to a payer in the specified standard format. These transactions may occur directly between providers and payers or via a third-party.
5. Provide patients with an electronic copy of their health information/discharge instructions upon request.	HIE capability is required if the electronic copy is to be transmitted to the patient via a network, either directly (e.g. via secure email) or through a third-party patient-authorized entity (e.g., a Personal Health Record [PHR]). In these cases, the capability is required to correctly address and securely* transmit the information in an accepted format to the patient or the patient-authorized entity.
6. Capability to electronically exchange key clinical information among providers of care and patient-authorized entities.	Infrastructure to correctly address and securely* transmit the specified types of information (e.g., problem list, medication list) in an acceptable data format from one provider to another, from a provider to a patient-authorized entity or from a patient-authorized entity to a provider.
7. Provide patients with electronic access to their health information within 96 hours.	HIE capability may simplify electronic access provided to patients via a third-party patient-authorized entity, such as an "untethered" PHR. In this case, the same capability is required as for 6 above.
8. Provide a summary-of-care record for each transition of care and referral.	HIE capability will simplify and promote the transition of care or referral made to a different organization, and most easily facilitate transfer of the summary-of-care record.
9. Capability to submit electronic data to immunization registries and actual submission where required and accepted.	Infrastructure to securely* transmit immunization events from any hospital or outpatient facility to the appropriate immunization registry for the appropriate patient in a specified data format, and to allow immunization registries to securely* exchange data.

Meaningful Use Criterion	Relevant HIE Capability
10. Capability to provide electronic submission of reportable laboratory results to public health agencies and the actual submission where it can be received.	Infrastructure to securely* transmit laboratory results from any hospital laboratory to the appropriate public health agency in a specified standard format.
11. Capability to provide electronic syndromic surveillance data to public health agencies and the actual transmission according to applicable law and practice.	Infrastructure to securely* transmit relevant clinical data from any hospital or outpatient facility to the appropriate public health agency in a specified standard format, including de-identification of the data, if required.

** See Section 5.1.1 for discussion of security requirements for meaningful use.*

Table 2. Meaningful Use Criteria That Are Enabled by HIE

Meaningful Use Criterion	Relevant HIE Capability
12. Generate lists of patients by specific condition to use for quality improvement, reduction of disparities and outreach.	The required capability will enable secure* transmission of clinical data from the source organization to the aggregating organization, as well as resolve patient-identity discrepancies in the data at the time they are requested or received.
13. Report ambulatory quality measures to CMS or to states.	Accurate generation of ambulatory quality measures may require the electronic aggregation of clinical data from multiple organizations (as above). In this case, the same HIE capability is required as for #12 above.
14. Perform medication reconciliation at relevant encounters and each transition of care.	Accurate medication reconciliation may require the electronic aggregation of medication data from multiple organizations where care was received or medications dispensed, either via (1) an ongoing collection of data from various organizations into an EHR, disease registry or data warehouse, (2) a real-time distributed query to the various organizations holding the relevant patients' medication history data, or (3) a real-time query to a third-party organization that aggregates patients' medication history data. In each case, an infrastructure is required to securely* transmit clinical data from the source organization to the aggregating organization and to resolve patient-identity discrepancies in the data at the time they are requested or received.

** See Section 5.1.1 for discussion of security requirements for meaningful use.*

2. Statewide HIE Planning

Based on the guidance provided by the Strategic Plan, and in order to develop a coordinated approach to HIT adoption that incorporates the views of California's diverse stakeholders, the State enabled a multi-stakeholder planning process by establishing public workgroups. The operational planning process was conducted with a commitment to inclusion, transparency and collaboration. Accountability was ensured by:

- Utilizing a governance structure whereby all participants are responsible for working with the State and Operations Team (see Section 2.2) to set strategy and adopt policies for HIE operation and subsequent oversight;
- Documenting activities via public updates and meeting summaries archived on the State's public website; and
- Opening participation in workgroups to all interested, and using online tools to enable open collaboration in the operations planning process and drafting of the Operational Plan.

2.1 eHealth Advisory Board

The eHealth Advisory Board was created in April 2009, to review and provide input on the process and deliverables associated with State implementation of HIE. Co-chaired by CHHS Secretary Kim Belshe and Dr. Paul Tang, Vice President and Chief Medical Information Officer, Palo Alto Medical Foundation, Advisory Board meetings are held in-person at the CHHS offices in Sacramento, California.[11]

2.2 Operations Team

The State convened an Operations Team, comprising the Deputy Secretary, Health IT; the Chief, Policy Branch, CalPSAB; the Chief, Office of Health Information Technology, Department of Healthcare Services (DHCS), who serves as Medi-Cal's lead for the EHR incentive program; the Deputy Director, Health Information and Strategic Planning, CDPH; Chairs of the individual workgroups; and consultants engaged by CHHS.[12] The Operations Team is responsible for coordinating with CalPSAB, the Medi-Cal EHR Incentive Program, workforce training, RECs, public health programs and other programs as appropriate. Other responsibilities included coordinating activities among the workgroups, drafting the Operational Plan, and managing the public comment and review process.

[11] See Appendix 6 for a list of the eHealth Advisors.
[12] See Appendix 7 for a list of Operations Team Members.

2.3 Workgroups

Under the authority of the CHHS Secretary, the operational planning workgroups were convened in November 2009, and report to the Deputy Secretary. Three public workgroups were formed, open to all interested participants: Patient Engagement, Vulnerable and Underserved Populations, and Finance. Two workgroups focusing on the technical architecture were also formed: Technical Advisory Committee and Technical Working Group. The primary responsibility of each workgroup during the operational planning process was to encourage and coordinate input, and review draft content for the Operational Plan. The workgroups are chaired by volunteers selected by the Deputy Secretary, and meet weekly on open conference calls. Minutes of these meetings are maintained and publicly available on the State's eHealth website.[13] Documents and work products are edited and reviewed by all participants via an online wiki. Activities across the workgroups, as well as issues resolution, were coordinated by the Operations Team during the interim period prior to the selection of the GE.

Shortly after their creation in November 2009, workgroups created, reviewed and finalized individual group charters, stating the purpose, principles and goals of each workgroup.[14] Workgroups also determined the specific inputs and dependencies into the Operational Plan, including a timeline of workgroup activities and milestones for each workgroup throughout the implementation process (2010 – 2015), risk and issue mitigation, cost and staffing estimates over the implementation period, and evaluation performance measures and metrics.

Throughout the operational planning process, workgroup activities were managed by the Chairs of each group, who led meetings, guided discussion, and coordinated each workgroup's tasks and input into the Operational Plan. Chairs acted as the primary liaisons to each workgroup through their role as members of the Operations Team, providing progress updates, bringing issues for resolution and mitigation, and ensuring coordination with other State and regional activities.

2.3.1 Patient Engagement Workgroup

The Patient Engagement Workgroup's purpose was to develop innovative approaches to engaging and empowering patients and their families, and recommend how to incorporate these approaches into the State's HIE services. A guiding principle of the workgroup was to enable each point-of-care as a point of patient engagement where the patient's physician guides him or her in understanding HIE and using the

[13] The state's eHealth website can be accessed here: http://www.ehealth.ca.gov/.
[14] See Appendices 3 for workgroup charters and members, including biographies of chairs.

services available to take an active role in his or her care. The goals of the Patient Engagement Workgroup were to:

- Contribute to the operational planning process a sound strategy for engaging patients and their families with HIE services;
- Define key elements, a timeline and resources required for a patient and family engagement strategy, including specific tools to ensure that patients and families have access to and control of their health information;
- Create educational materials for patients and families, design and conduct patient awareness initiatives, and address educational needs to encourage patients' and families' participation as technology- and data-enabled partners in the care process as critical to improving the patient's health outcomes;
- Recommend patient and family engagement programs to assist the GE and the State to put the $38.8 million in HITECH grant funding to the best and highest use;
- Develop patient- and family-centric use cases to ensure that implementation maintains a focus on patient involvement and inclusion;
- Define metrics and measurement tools to ensure that patient and family engagement objectives are being met; and
- Garner support, consensus and endorsement from California providers, policymakers, consumer advocacy networks, eHealth and Health 2.0 innovators in patient self-management tools, providers, payers and other stakeholders working to foster patient and family engagement with HIE services.

2.3.2 Vulnerable and Underserved Populations Workgroup

California is the most culturally and demographically diverse state in the United States. The vast population and geography is coupled with diversity of inhabitation, from densely populated urban areas of more than 30 million people, to remote frontier and isolated mountain and desert regions that are home to more than 5 million residents. The Vulnerable and Underserved Workgroup was charged with ensuring that the design of HIE addresses the specific needs and disparities among the multiple types of vulnerable populations. This workgroup was tasked with identifying the vulnerable populations, the health care providers who serve these populations, and suggesting to the technical and finance committees specific

eHealth needs and including the existing/established electronic platforms that are currently in place and integrated into the various services and care provided to these vulnerable populations. The types of vulnerable populations identified are far-ranging, including children in foster care programs, aging and disabled population (including those dual eligible for both Medicare and Medicaid, and those beneficiaries being served through Medi-Cal Managed Care plans), behavioral health (i.e., users of mental health and alcohol and drug treatment services) and the uninsured, children who have been abused and/or witnesses to domestic violence, ethnic populations with unique health care needs, lesbian, gay, bisexual and transgender populations, and other isolated populations living in rural and frontier areas of the state, where a health workforce shortages exist. The charge of the vulnerable population workgroup is to not only identify the vulnerable populations in California, but to identify the unique types of health care providers that serve them, and incorporate their needs into the Operational Plan. The Workgroup developed a communication and outreach strategy to ensure that the considerations and disparities among vulnerable and underserved populations were known and addressed. The goals of the Vulnerable and Underserved Workgroup were to:

- Address the specific needs of the vulnerable and underserved, and ensure that those specific needs are addressed in the operational planning process so that HIE works to eliminate disparities in care;
- Ensure that federally defined and California Medi-Cal requirements for addressing the needs of these populations are met to assist the GE and the State to put the $38.8 million in HITECH grant funding to the best and highest use;
- Ensure that requirements for the expected participants in HIE are incorporated into specific tools and functions developed for these populations; expected participants include: consumers, hospitals, ambulatory care providers, health plans, HIOs, government and others;
- Garner support, consensus and buy-in from California advocacy groups representing these populations, starting with the development of the initial operations plan, continuing through the implementation of the Operational Plan;
- Ensure that HIE needs of the various programs providing critical services to these populations are addressed and met through the HIE services to be developed; and
- Ensure that communication strategies are developed that allow these populations and the programs that serve them to access HIE services.

2.3.3 Finance Workgroup

Recognizing that ubiquitous HIE in California will depend on the ability to secure the financial capital to build infrastructure capabilities and develop ongoing revenue streams to maintain operations, the Financing Workgroup developed financing strategies and sustainability models.

The goals of the Finance Workgroup were to:

- Develop financing strategies that will enable the provision of valuable HIE services, including those that support meaningful use;
- Estimate the cost to achieve HIE throughout the State;
- Develop policy recommendations for financing strategies and sustainability models;
- Develop and compare alternative financial models for sustaining the GE;
- Ensure that the requirements for expected HIE participants are incorporated into and supported by the HIE infrastructure. Expected HIE participants include consumers, hospitals, ambulatory care providers, health plans, HIOs, State and local governments and others; and
- Build support, consensus, and buy-in from California stakeholders around financing strategies and sustainability models for HIE in California.

2.3.4 Technical Workgroups: Technical Advisory Committee and Technical Workgroup

Two workgroups addressed the design and development of the technical architecture of the State HIE. The Technical Advisory Committee (TAC) developed the business processes that the HIE services should support, and defined the high-level priorities for the Technical Working Group (TWG), which developed detailed technical requirements based on the TAC priorities. The aim of both groups was to design valuable HIE services that support the transformation of California's health care delivery system and the achievement of meaningful use, protect patient data and privacy rights, and ensure that these services remain accessible, scalable, sustainable and supportable for and by all exchange participants in California.

The goals of both workgroups were to:

- Design a technical architecture to enable HIE, including a core set of shared software services, which is consistent with and provides connectivity to NHIN;

- Ensure that federally defined and California Medi-Cal specific meaningful use criteria and functions are supported by HIE services;
- Prioritize requirements to assist Cal eConnect and the State to put the federal HITECH grant funding to the best and highest use;
- Ensure that requirements of the expected participants in HIE are incorporated into the design. Expected participants include patients and families, hospitals, ambulatory care providers, health plans, HIOs, government and others;
- Employ best practices in technical design and development to enable adaptability in a rapidly changing environment, are sustainable in the short and long run and can scale to California's size and accommodate its heterogeneity;
- Develop a technical architecture that is practical; prioritizing what services must be supported in the short-, medium- and long-term; and
- Garner support, consensus and buy-in from California stakeholders.

2.4 Stakeholder Calls and Bulletins

Monthly stakeholder calls, open to the public, are conducted by the Deputy Secretary, and include both teleconference and webcast components. The content of the stakeholder calls includes a review of the visions and goals of HIE, an update on State and federal activities and funding opportunities relating to HIE, updates from each public workgroup and the Operations Team, and activities of related State agencies' work on privacy and security, and workforce development. Each meeting concludes with an open 'Question and Answer' session. Audio recordings of the proceedings are posted publicly after each call.

The State also issues periodic "California eHealth Bulletins." The purpose of these bulletins is to communicate the status of California's eHealth initiatives, including the development of the Operational Plan and progress of proposals to the federal government to support HIT, HIE, and broadband and telehealth programs.

2.5 Website and Online Collaborative Tools

The State maintains a public website at www.eHealth.ca.gov to keep stakeholders informed of the operational planning process. The website provides access information for stakeholder calls, materials and

minutes, California eHealth Bulletins, and a link for stakeholders to sign up for public workgroups and participate on the workgroup wikis.

Each workgroup and the Operations Team have online portals and online collaborative workspaces where workgroup participants can review and edit shared documents (such as the workgroup charter and content for the Operational Plan), create discussions and provide comments. Workgroup meetings are announced via online portals and email distribution lists, and meeting materials and minutes are posted online.

Review and revision of the Operational Plan was conducted in a multi-stage, open process via online collaboration. In the first stage, each workgroup defined its portion of the plan. Then, the draft of the Operational Plan was posted for all members of the public workgroups to review and comment on a wiki that allowed real-time editing of the document, as well as active discussion. After feedback was incorporated, the revised draft was posted for comments by all stakeholders and the general public.

2.6 HIE Summits

On July 20, 2009, CHHS hosted its first California Health Information Technology and Exchange Summit. The Summit was attended in-person by approximately 200 people, with many more participating by teleconference and live webcast. The Summit reviewed draft strategic plans for each workgroup, and addressed next steps to finalize and publish the plans for public comment.

On March 11, 2010, the State held another statewide Summit to collect input into the Operational Plan. Workgroup representatives provided short summaries of each section of the Operational Plan, raising key issues and questions for discussion and resolution in the open forum, with the resulting comments and feedback being incorporated into the final Operational Plan. The Summit was open to the public, with 123 in-person attendees, another 160 attendees via teleconference, and 298 attendees (at the highest attendance point) via live webcast.

3. Governance

California Senate Bill No. 337, introduced by Senator Elaine K. Alquist, Chair, California State Senate Committee on Health, on February 25, 2009, gave oversight authority to CHHS to select and manage an SDE to govern statewide HIE based on the vision and goals outlined in the Strategic Plan. It was ultimately determined that the GE would fulfill the SDE role.

3.1 Selection

On August 25, 2009, CHHS initiated a Request for Information (RFI) process to select an organization to serve as the GE for California. The RFI listed a set of requirements for the responsibilities of the GE and specifying that the GE was to be a public-private not-for-profit entity.[15]

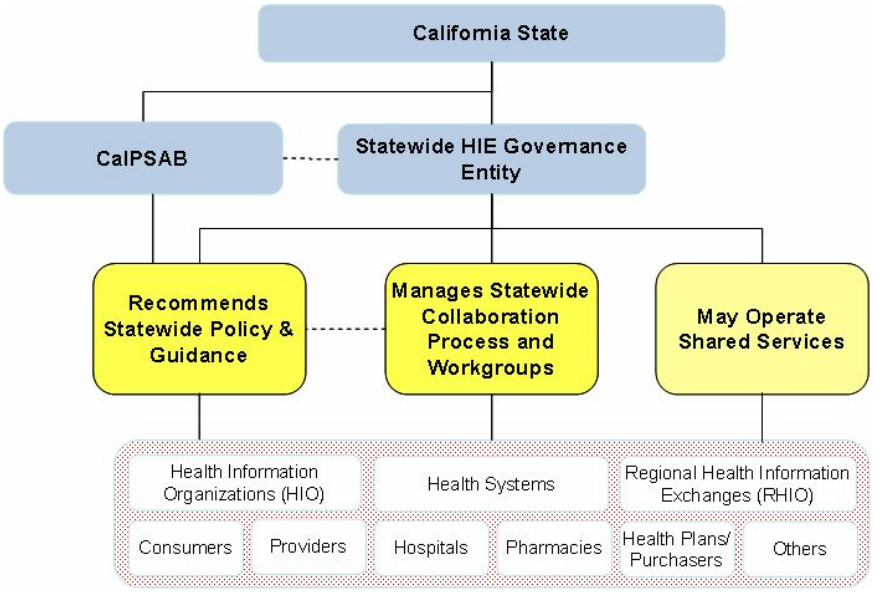
CHHS received seven proposals, with two organizations, the California eHealth Collaborative (CAeHC) and California Regional Health Information Organization (CalRHIO), scoring significantly higher than the others but did not meet all of the State's criteria. On November 20, 2009, after detailed discussions with both organizations, CHHS asked leaders of both organizations to explore submitting a joint proposal. On December 24, 2009, the two responding organizations agreed to submit a joint proposal, and on January 11, 2010, the joint application that proposed creating a new organization, Cal eConnect, was received by the State. On March 15, 2010, the Governor and CHHS announced the selection of the new organization, Cal eConnect, as the GE, pending approval from ONC and award of a State sub-grant.

Cal eConnect is charged with convening, coordinating, overseeing and managing the implementation of HIE services throughout the state under the State HIE Cooperative Agreement Program. Cal eConnect establishes the roles, responsibilities and relationships between parties; promulgates and oversees activities among stakeholders and across State, regional and local levels; and oversees implementation of associated accountability mechanisms. Cal eConnect will coordinate its activities with the Medi-Cal EHR Incentive Program, the Department of Public Health, CalPSAB and the California RECs to support achieving and demonstrating meaningful use of EHRs consistent with federal standards.

Figure 1 below presents the conceptual view of the relationship among the State, Cal eConnect, CalPSAB and stakeholders.

[15] See Appendix 12 for the Governance Entity Request for Information.

Figure 1. Relationships Among Entities



Stakeholder input collected throughout the strategic planning process recommended that the State's role specifically should be to bind participants in statewide HIE to comply with policies and procedures through explicit contractual obligations. Thus, the State will require participants to bind themselves contractually to participate in governance, and to observe and be bound by technical, business and legal rules for HIE that are adopted as statewide policy guidance through an inclusive, fair, transparent and collaborative decision-making structure. To ensure fair enforcement of these contractual obligations, Cal eConnect Board members and staff will be asked to disclose any conflicts of interest, and will develop a policy regarding decisions relating to entities in which they have an interest or pre-existing financial relationship.

3.2 Role of the State

The State government will have four voting positions on the Cal eConnect Board of Directors including the Chairs of the Assembly and Senate Committee on Health, the CHHS Secretary, and a California Administrator such as the Chief Deputy Director of DHCS or CDPH or their designees. These positions enable the State to:

- Directly monitor, guide progress and engage in governance activities;
- In conjunction with Cal eConnect, coordinate activities across multiple diverse organizations, including the Medi-Cal EHR Incentive Program and State public health programs in order to ensure integration and support of a unified approach to HIE without duplicating efforts;

- Ensure conformance with State priorities and principles;
- Monitor the use of funds and administrative processes to support transparency and accountability; and
- Directly engage policy makers within State government.

3.2.1 Privacy and Security Governance

Provisions related to security should be clear, flexible and technology-neutral, and should allow entities to conduct risk analyses and implement physical, administrative and technical safeguards based on the entity's determination of what is reasonable and appropriate for facilitating secure HIE under current State and federal law. The governance model recognizes and supports this integration through its organized structure, which supports the standardization of privacy and security rules for health care entities exchanging electronic health information.

As described in Figure 1, Cal eConnect will collaborate directly with California's Office of Health Information Integrity (CalOHII) to ensure standardization of privacy and security policies. The eHealth Policy Branch of CalOHII supports HIE privacy and security initiatives, and its key responsibilities are the facilitation of CalPSAB, harmonization of State and federal privacy and security laws, creation of a uniform set of privacy and security rules for California health care entities performing HIE, and facilitation of demonstration projects. The eHealth Policy Branch will consider State and national issues, including review of the federal Data Use and Reciprocal Support Agreement (DURSA) to align, to the extent possible, State and federal privacy and security policy.

While the eHealth Policy Branch is immediately responsible for the privacy and security policy landscape, Cal eConnect is responsible for developing operational privacy and security policies that both participants of the cooperative shared services and recipients of funding under this program will be bound contractually to use. Cal eConnect will also oversee the implementation of the privacy and security policies in the technical configuration of the HIE architecture. The eHealth Policy Branch will work closely with Cal eConnect to develop use cases that align with the overall strategy of California's HIE implementation. The eHealth Policy Branch will test each use case with an end result of clear policy that Cal eConnect can implement as HIE services are established.

Additionally, the eHealth Policy Branch is responsible for the development of a guideline enforcement policy. The eHealth Policy Branch will facilitate an Enforcement Committee to develop this policy, and will include reporting and auditing requirements for entities participating in HITECH funded HIE activities in California. The committee will also be a public-private collaborative with participants

including, but not limited to, Cal eConnect, State departments, Public Health Licensing and Certification, Consumer Affairs, and the Office of Privacy Protections.

3.2.2 Guideline Development

The HIE privacy and security guideline development process relies upon an iterative methodology that is managed closely by the eHealth Policy Branch. Utilizing CalPSAB's public and private health care industry stakeholders for development and evaluation, preliminary privacy and security guidelines have been drafted. The guidelines were developed using the Health Insurance Portability and Accountability Act (HIPAA) rules and existing California law as the baseline. The guidelines will evolve over time as laws are harmonized, issues are resolved and testing through demonstration projects is completed. The result will be standardized privacy and security rules, or statewide policy guidance and trust framework for HIE. Entities receiving funding or services through Cal eConnect and the ARRA funding will be required to adhere to the HIE Privacy and Security Guidelines (see Interim HIE Privacy and Security Guidelines, Public Comment Version). To ensure consistency and trust across trading partners, statewide policy guidance will be enforced through contract and grant agreements. Similar to users of DURSA, all entities that use any of the HIE services developed through the State HIE Cooperative Agreement Program, or who receive grant or contract funds through this program, will be required to adopt these guidelines in their exchange activities.

The process for adhering to security and privacy guidance in the adoption, use, and sustainability of all services managed by Cal eConnect will be expressly articulated in the implementation plan over the next three months. This process will include how adherence to security and privacy guidelines is managed in staffing, long term audit functions, and a unified commitment to security and privacy.

Case law in California will be considered in development of HIE use cases, in particular pertaining to sensitive information. Addressing privacy and security issues, in has been part of CalPSAB's work to develop Interim Privacy and Security Guidelines, which have been published as guidance to all State entities.[16] Cal eConnect and CalPSAB will work collaboratively to revise the interim guidelines and develop operational privacy and security policies to support HIE services.

[16] The Privacy and Security Interim Guidelines can be accessed here: http://www.ohi.ca.gov/calohi/LinkClick.aspx?fileticket=yLyFEJ10JNE%3d&tabid=56.

3.3 Role of Cal eConnect

Cal eConnect is responsible for ensuring that its activities, workgroups and actions reflect the needs of California's residents, a group diverse in geographic distribution, language, health status, ethnic and racial composition, economic status, education levels, abilities and age. Cal eConnect is responsible for ensuring that objectives, requirements and structures of HIE incorporate these considerations to ensure maximum consumer access and engagement.

Cal eConnect is also responsible for overseeing and managing the implementation of HIE services under the federal grant program. Cal eConnect will manage a collaborative, open and inclusive process to establish ground rules by which health information may be shared safely, securely and appropriately among stakeholders. Cal eConnect is responsible for establishing a set of priorities that will help eligible providers and hospitals obtain meaningful use, while operating in and supporting an open and transparent environment that fosters trust among all stakeholders. In addition, Cal eConnect is responsible for maintaining the flexibility, both in governance and staffing, to align with emerging nationwide HIE governance.

Cal eConnect will have grant-making abilities. Grants are intended for the purposes of ensuring a statewide HIE infrastructure that enables connectivity throughout the state. Cal eConnect will develop a process in the first 90 days of activity to ensure that grants are awarded in a fair and transparent manner. In areas where viable regional solutions exist, they are to be leveraged. In addition, the State will require that in the grant-making process, Cal eConnect articulates how decisions are made in a transparent manner.

Cal eConnect will develop more specific workplans and milestones as part of an implementation planning process between April and June, 2010, and will continue to give all stakeholders and the public the opportunity to comment on that implementation plan, as well as the Strategic and Operational Plans, as they are revised and refined during this period.

3.3.1 Structure of Cal eConnect

Consistent with the requirements of California Senate Bill 337, Cal eConnect has a 22 member Board of Directors, including members of State government, public and private organizations, with the majority of the Board comprising non-governmental employees. The Board has a diverse composition, representing a variety of groups (from providers to payers) and geographies (urban to remote, coastal to valley, and north to south). The Board of Cal eConnect is initially co-chaired by David Lansky, Chief Executive

Officer (CEO), Pacific Business Group on Health, and Don Crane, CEO, California Association of Physician Groups. The Board consists of the following members:

- California Assembly Committee on Health Chair (or his or her designee)
- California Senate Committee on Health Chair (or his or her designee)
- CHHS Secretary (or his or her designee)
- California State Administrator (determined by the State, may include the CDPH, DHCS, DMHC or other departments)
- CEO of Cal eConnect

The Board will also include the following representatives:

- Workgroup Co-chair (two at-large representatives from different workgroups)
- Consumer (two representatives)
- Employer
- Health Informatics
- Health Information Exchange Organization (two representatives from different organizations)
    - Private Health Plan
    - Public Health Plan
    - Private Hospital
    - Public Hospital
    - Labor
    - Independent Physician
    - Physician from a Medical Group
    - Local Public Health Officer

- Safety Net Clinic

The Initial Board has been established, is represented by ten individuals, and is tasked with identifying the remaining Board members, hiring a CEO, establishing bylaws, policies and procedures, reviewing and updating the Operational and Strategic Plans in cooperation with ONC, and developing an Implementation Plan that supports this Operational Plan by the end of June 2010.

3.3.2 Contractual Relationship with Cal eConnect

The State will execute a grant agreement with Cal eConnect in April 2010 to perform HIE convening, coordinating and management activities. Cal eConnect has a specific evaluation and prioritizing function that focuses on ensuring that progress is being made toward the HIE goals, that course corrections are implemented as needed, and that issues that are beyond the purview of Cal eConnect are raised to the attention of the State or other appropriate responsible parties. Because the State is accountable to the federal government, CHHS must ultimately be responsible for the activities of Cal eConnect and must ensure that requirements are met. As a result, Cal eConnect retains a reporting responsibility to CHHS for at least the duration of the State HIE Cooperative Agreement Program, from 2010 to 2015, and it will report to CHHS annually on its progress and activities.

Cal eConnect is explicitly responsible for establishing oversight and accountability mechanisms to protect the public interest. As part of this process, Cal eConnect is developing nondiscrimination and conflict-of-interest policies that demonstrate a commitment to open, fair and equal participation by stakeholders. This will include requirements that Board meetings and workgroup activities be conducted in public.

3.3.3 Procurement and Grants Management

Cal eConnect will perform two procurement and grant cycles – one in the second half of 2010 and one in 2011 – to request proposals, select and obtain services to provide the functions needed to support HIE. Each procurement/grant cycle will include the following steps:

1. Draft procurement and grant requirements;
2. Review procurement and grant requirements with appropriate Boards, Committees and stakeholders, and refine requirements based on feedback;
3. Draft Request for Proposals (RFPs);
4. Finalize and release RFPs;

5. Review responses to RFPs;

6. Negotiate with top responder(s) and award grant(s) and contract(s); and

7. Oversee implementation jointly with the Evaluator (see Section 11 – Evaluation.)

Cal eConnect's role is to manage the grant and procurement process from end-to-end, by issuing and managing grants, developing legal analyses, and overseeing accounting and budgeting. Cal eConnect enforces adherence to statewide policy guidance through execution of grants and contracts with participants in HIE and shared services, and monitors compliance with those grants and contracts by evaluating and assessing progress. Cal eConnect is responsible for developing accountability measures for public workgroups, consultants and organizations participating in HIE services, and for developing or identifying sustainable business models for HIE in collaboration with the Finance workgroup.

3.3.3.1 Planned Workgroups

In addition to the current public workgroups - Finance, Technical, Patient Engagement, and Vulnerable and Underserved Populations - other public workgroups may be established as required. Cal eConnect is charged with continuing to provide a coordinating function by facilitating alignment of statewide, interstate and national HIE strategies, and coordinating activities with California REC programs, the Medi-Cal EHR Incentive Program, Public Health, and other related programs and organizations. Cal eConnect is also responsible for coordinating the activities of the workgroups with those of CalPSAB, and ensuring adherence to privacy and security policies with the ultimate goal of promoting consistent and effective HIE policies and practices. The overall goal of Cal eConnect and the public workgroups, during and after deployment of HIE services, is to support integration of HIE efforts with other health care goals, objectives and initiatives across California and the nation.

3.4 Coordination of Efforts Across All Programs

The State is using its resources, authority and programs to emphasize the need for coordination of care through the exchange of health information. CHHS has established a Coordinating Committee, in concert with Cal eConnect, that will support the various relationships described below and develop a roadmap for the coordination of care and HIE services between departments and their stakeholders. This roadmap will also examine policies for leveraging its purchasing power to lower the cost of care. For example, the Department of Health Care Services (DHCS) is one of the largest purchasers and payers of health care services in the State, and the California Public Retirement System is one of the largest health plans; these

and many others are actively engaged in supporting the adoption and exchange of health information. The State HIE Coordination Roadmap is scheduled to be completed by December 30, 2010.

3.4.1 Coordination with ARRA Programs

A Coordinating Committee has been convened by CHHS that includes Cal eConnect, DHCS, CDPH, the California-based regional extension centers, CalPSAB, the California Telehealth Network, health IT workforce, rural, safety net and other stakeholders. The Coordinating Committee has established a charter and will meet biweekly to support the coordination and interdependencies between HIE, EHR Incentive, REC and other ARRA programs. As these programs are developed, Cal eConnect continues to work with stakeholders to implement ONC program guidance. The State recognizes the need to coordinate these programs to ensure the availability of a sufficient and appropriately trained workforce to support HIE.

3.4.1.1 REC Support and Coordination

HIE and REC services have a set of critical interdependencies. To meet meaningful use, priority providers must perform a set of tasks that require HIE including e-prescribing, electronic laboratory ordering and results delivery, and sending and receiving electronic messages and patient visit summaries to other providers. To ensure close alignment, CHHS required that the three REC applicant organizations (CalHIPSO, CalOptima and LA Care) sign Memoranda of Understanding (MOUs) documenting how all RECs would share resources and coordinate activities, such as developing a common web portal and defining the EHR selection process. CHHS also required RECs to participate in the Coordinating Committee. While the Coordinating Committee does not have legal governance over the programs, it does ensure that they meet regularly to discuss and resolve outstanding issues.

Close coordination will be critical to ensure that the maximum number of eligible providers obtains MU incentives. The following illustrates how these programs will function together:

- Cal eConnect will define a set of interoperability, privacy and security, and other standards and specifications;
- The RECs will undertake an EHR product selection and choose a set of EHR vendors, develop master service agreements, and incorporate those standards and specifications into the standard contract language;

- For providers that already have an EHR yet do not have the required interfaces, the RECs will ensure that the standards and specifications used conform with Cal eConnect requirements; and
- The California Telehealth Network will deliver inexpensive, dedicated broadband to rural (and other) providers who may use that capacity for training, software as a service and HIE.

3.4.1.2 Beacon Communities Awards

The Beacon Community Cooperative Agreement Program announced by ONC in November 2009, will provide funding to communities to build and strengthen their HIT infrastructure and exchange capabilities to demonstrate the vision of the future where hospitals, clinicians and patients are meaningful users of HIT. The Deputy Secretary forged partnerships with the prospective Beacon Communities during the application process to ensure that the applicants are committed to working with the State to advance HIE policies. In consultation with ONC, CHHS determined that the Beacon Communities could serve as critical test beds for HIE privacy and security policies in the state. By piloting privacy and security guidelines in the market and offering feedback, awarded Beacon Communities will transfer critical data to Cal eConnect and CalPSAB. Cal eConnect and CalPSAB will use this information to establish and support privacy and security guidelines that are market ready and adoptable, increasing the likelihood of success. They will also use the information from the pilots to inform new, tested policy to address any barriers to safe, secure data exchange.

To this end, CalPSAB, with the support of its Board, outlined a set of policies for which CalOHII and CalPSAB need additional information to inform future decisions and to test implementation strategies for policy recommendations, including those related to consent, authentication and authorization. Each of the Beacon Communities partnering with CHHS incorporated the testing of one or more of these policies in their applications and, if awarded, will work closely with CHHS, CalOHII and Cal eConnect to implement the pilot and report on their findings.

The Beacon Communities are also expected to build upon the strengths of the public health system. CDPH supported Beacon Communities that included local public health departments in their projects. The CDPH plans to work specifically with Beacon grant recipients to understand the complexities of public health reporting requirements through HIE, as described in meaningful use definitions. The expectation will be that State level best practices, guidelines and infrastructure will develop through the grant activities that CDPH can assist in disseminating throughout the state.

3.4.1.3 Telemedicine and Broadband

In January 2008, the California Broadband Taskforce concluded that ubiquitous broadband services are "…an integral part of improving the overall health of Californian's and driving down the cost of care." The availability of ubiquitous broadband will support the implementation of various technology-supported health services, including videoconferencing, the internet, store-and-forward imaging, streaming media, and terrestrial and wireless communications.

California has moved forward with this vision through a successful Federal Communications Commission (FCC) grant award of $22.1 million to build the California Telehealth Network (CTN), a high-speed broadband network that will allow for the expansion of an eHealth network with an emphasis on rural and underserved populations. This network is scheduled to be built in the second half of 2010, connecting over 850 sites statewide. It is expected that the network may expand to over 2,000 sites through other funding opportunities, such as those provided by the ARRA. In coordination with Federal programs, CTN, and other Federal grant awardees will be involved in Cal eConnect efforts.

In addition to the CTN, California has another broadband network, the Corporation for Education Network Initiatives in California (CENIC), which provides broadband infrastructure to educational and research communities. Many of these facilities could be involved in the provision of clinical education programs.

These networks are a product of California's longstanding commitment and investment in broadband and telehealth. California is a national leader in the development of technology-supported health care, having passed the California Telemedicine Act in 1996. The California Legislature, Governor and voters have demonstrated their commitment to eHealth through the passage of bond funding, legislation and executive orders that support the continued expansion of broadband and eHealth applications.

California also has a Health Resources and Services Administration (HRSA) designated TeleHealth Resource Center (TRC) that provides program guides, best practices, technical assistance and other supporting services to newly developing telehealth programs funded by HRSA. The California Telemedicine and eHealth Center (CTEC) is California's TRC, one of six designated throughout the country. CTEC has developed a comprehensive set of written program development materials, video education and training, best practice guides, policy guides, telehealth training programs and technical assistance related to telehealth.

The statewide broadband long-term vision is to:

- Provide the infrastructure to connect the full spectrum of health services in hospitals, clinics, schools, homes, community centers, employer-based health sites and mobile applications, ensuring that the user's access and experience of the HIT and HIE initiatives is that of a consistent, statewide enterprise;

- Provide secure and reliable high-speed modern wired, wireless and mobile broadband networks, systems and capacity that support fully integrated, coordinated and seamless services for patient health care, public health, emergency response and economic development for California residents;

- Create a coordinated and integrated system for the delivery of eHealth services that leverages existing services and resources, and coordinates existing efforts with new State initiatives;

- Integrate federally funded statewide projects and initiatives with efforts for expansion of broadband and development of REC/Local Extension Centers (LECs);

- Expand existing products and services of the California TRC to provide statewide telehealth support to the REC (products, templates, tools, training and technical assistance); and

- Coordinate, where possible, the existing telehealth and eHealth initiatives for Workforce Development and Loan Funds.

These services must enable:

- Privacy and security of electronic health information exchange;

- Reliable, modern, high speed wired, wireless and mobile broadband connectivity;

- Innovative telehealth services;

- EHRs and PHRs; and

- Sustainability, even for established networks of telehealth services.

While a variety of funding mechanisms may be available in the short-term, sustainability must include a combination of fee structures, grant-type funding, and when clearly in the public good, government funding.

3.4.1.4 Workforce Development and Training

Workforce development and training will be critical for all aspects of HIE. Upon ONC's release of funding opportunities related to the HIT Workforce Development Program, CHHS provided a forum for potential applicants to collaborate and form partnerships. CHHS worked with several of these applicants to convey the State's vision regarding the HIT workforce, one aligned with that of ONC, that there be a coordinated link between high quality, rapid workforce training programs and the RECs, GE and other employers that can offer on-the-job internship and apprenticeship opportunities critical to quickly expanding the HIT workforce.

To take full advantage of these funds, CHHS has reconvened the Workforce Workgroup that developed the workforce portion of the Strategic Plan and has tasked that group of experts with operationalizing the HIT workforce strategy. The California Health Workforce Alliance (CHWA) has agreed to partner with CHHS and lead the effort, bringing together the Workforce Workgroup, applicants of the HIT Workforce Development Program, REC representatives and other employers to foster a coordinated workforce training and job placement program in California. CHWA is a public-private partnership dedicated to the implementation of coordinated, systematic strategies to meet California's emerging health workforce needs. CHWA is committed to linking the proposed training programs with employers and industry stakeholders (including ARRA-funded employers) who can provide input into program design and implementation to meet the needs of the industry.

CHWA's initial focus is on developing the workforce necessary for achieving meaningful use of EHRs. They will accomplish this through setting up a graduate-level internship program to develop leaders in the field, matching students with specific projects to advance planning for HIE within CHHS and the GE. They will also establish an on-the-job training program by matching incumbent HIT workers to employers who are implementing EHRs to quickly develop an experienced workforce. These and other programs will take advantage of the curriculum developed through the ONC Workforce Development Program, as well as other appropriate curriculum that exists or will be developed.

CHHS will focus on developing the HIT workforce to serve departments in the Agency. One specific example will be growing the public health informatics workforce for CDPH. Public health agencies at both the local and State levels will need to augment and/or retrain current staff to be able to support requirements of HIE and meaningful use, in particular at the local level where they provide direct patient care. In addition to CDPH, CHHS will support efforts to develop HIT workforce to serve its other departments through internship programs and employment opportunities as funding allows.

Table 3. Current Workforce Development Programs in California

Programs	Applicants
Community College Consortia to Education Health IT Professionals	Los Rios Community College District Los Angeles Community College District
Curriculum Development Centers Program	Los Rios Community College District Coastline College University of California, Los Angeles California State University, Los Angeles
Program of Assistance for University-Based Training	Claremont Graduate University San Diego State University University of California, Davis

Institutions of higher education and non-profit educational programs around the state have applied for federal funding for workforce development under ARRA, and to date $31.4 million in grant funding has been received by these organizations.

3.4.1.5 Research and Development

CalPSAB is working with Strategic HIT Advanced Research Projects (SHARP) Program applicants to advance research on the security of HIT for the State. CHHS is also encouraging health care venture capitalists to test their innovations within the ARRA-funded programs, so that relevant research findings that reveal cost savings, improved access and/or improved patient engagement tools can be easily disseminated and the innovation adopted more broadly.

3.4.1.6 Public Health ARRA Programs

A variety of public health programs have received ARRA funding to foster patient-centered care, improve the health of the population and deliver services effectively. Examples include funding for Ambulatory Surgical Center Healthcare-Associated Infection Prevention Initiative, California Emerging Infections Program and Special Supplemental Nutrition Program for Women, Infants and Children. Any relevant requirements and lessons for HIE stemming from these programs will be communicated through CHHS and public health representation on the Cal eConnect Board.

3.4.1.7 EHR Loan Fund Program

Though loan funds for EHR purchases have not been made available through ONC to date, CHHS and its partners are prepared to take advantage of ARRA funds that may become available for loans to stimulate

EHR adoption and HIE. During the State's strategic planning process, a dedicated workgroup was formed around the possible availability of ARRA loan funds. The group estimated the total need for loans, potential sources of funds in addition to federal contributions, and identified the three vehicles to operate such a fund.

- Recognizing the difficulty that small and rural health facilities have in obtaining adequate financing for their capital needs, the California Health Facility Financing Authority (CHFFA) has established the HELP II Financing Program, a low-cost revolving loan fund for non-profit health care facility infrastructure. The HELP II Financing Program provides three percent (3%), fixed interest loans of up to $750,000 to California's non-profit small and rural health facilities in an efficient, timely and cost effective manner. HELP II loans may be used to purchase or construct new facilities, remodel or renovate existing facilities, and purchase equipment or furnishings. Since the program's inception in 1988, CHFFA has loaned more than $60 million to small and rural health facilities.

- In addition, United Health Care (UHC) is supporting a $10 million consolidated bond offering for critical access hospitals to use for working capital to acquire HIT.

- Another possible source of funding is the United States Department of Agriculture (USDA) loan program. The California USDA office in Davis, California can provide $10 million in loans and up to $200 million in loan guarantee funding to Health Care District entities. Grant funding for capital and infrastructure improvements are also available through two grant programs, but these funds sunset in September 2010, unless renewed by the federal government. The challenge for HIE entities that qualify for funding is to establish an acceptable model grant proposal, which other providers could use as a template to successfully apply. The model grant proposal would need to be submitted in May, approved by USDA in June, and utilized and submitted by other qualified entities by August to meet USDA's sunset deadline on current funds.

3.4.2 Coordination with Medi-Cal

Administered by DHCS, Medi-Cal is the source of health coverage for more than one in ten adults in the state under age 65, one in three of the state's children and the majority of people living with AIDS in California, a total of 7.5 million beneficiaries. The program pays for 46% of all births in the state and the care for two-thirds of all nursing home residents. Medi-Cal payments account for almost two-thirds of all net patient revenue in California's public hospitals. Beneficiaries are almost evenly divided between managed care plans and fee-for-service delivery systems.

The use of HIT and HIE has been a priority for DHCS for many years. DHCS has implemented online eligibility, online claims submission and adjudication, and electronic submission of treatment authorization requests by health care providers. In August 2008, DHCS made system changes to MMIS to support the electronic connectivity of eligibility files, drug formulary files and medication histories to Surescripts, operator of the country's largest electronic prescribing network, as part of an e-prescribing proof of concept. DHCS administers one of the largest Medicaid data warehouse management decision support systems in the country. The State, legislative staff and the contractor, Ingenix, use the warehouse for many purposes, including oversight of managed care plan activities, investigating fraud and identifying overpayments. In addition, the system is currently being utilized for disease management and care management pilot activities. DHCS recently procured a new contractor to manage and enhance the existing MMIS system. It is anticipated that the new system will provide the opportunity to expand HIE between Medi-Cal and other entities by 2013.

DHCS' experience with Medi-Cal systems, staff and business activities brings important strengths to California's HIE plans and operations. DHCS will coordinate activities between Medi-Cal, the State and local public health programs to avoid duplication of efforts, and to ensure the integration and support of a unified approach to bi-directional information exchange. DHCS is also embracing the federal Medicaid Information Technology Architecture (MITA) as a vehicle to vitalize strategic planning and implementation at a level of detail that maximizes the opportunities tied to HIT in the coming years. MITA is an enterprise-wide opportunity for Medi-Cal to increase its abilities to improve patient outcomes and reduce overall costs primarily through taking advantage of improved access to standardized administrative and clinical information. Finally, DHCS is currently pursuing a new waiver of Section 1115 of the Social Security Act that will help leverage the strengths of HIE toward providing quality care and treatment for Medi-Cal beneficiaries enrolled in organized systems of care.

Implementation of the Medi-Cal EHR Incentive Program will provide an unprecedented opportunity for the advancement of HIT and HIE in California. In June 2009, DHCS entered into a public/private partnership with the California HealthCare Foundation (CHCF) to plan the program. DHCS and CHCF are committed to a partnership throughout the life of the Medi-Cal EHR Incentive Program.[17] With funding from CHCF, external stakeholders and DHCS staff were engaged in formulating a Vision Statement for the Medi-Cal EHR Incentive Program. Over 60 interviews were conducted and an all-day visioning session convened in Sacramento, California, with the DHCS Director, the Medi-Cal Director, representatives of the health care community, patient advocates and officials from other states.

[17] The vision Statement can be accessed at http://www.dhcs.ca.gov/Pages/DHCSOHIT.aspx.

On November 19, 2009, CMS approved DHCS' request for $2.8 million (with 90% federal match) to establish the Office of Health Information Technology (OHIT). DHCS subsequently awarded a contract to the Lewin Group and McKinsey & Company to complete a provider and EHR vendor "landscape assessment." This assessment, identifying approximately 10,000 eligible providers and 316 hospitals in California that will be eligible to apply for Medi-Cal EHR incentive funding, can be found on the OHIT website.[18] If all eligible providers and hospitals apply and subsequently meet meaningful use criteria, $1.4 billion will be infused into the California health care community through this program. In the next phase of the planning process, the consultants will complete a strategic plan for the Medi-Cal EHR Incentive Program, including a campaign plan to educate providers and an implementation plan for the workflow, staffing and resources necessary to implement the program in 2011. It is anticipated the statewide Medi-Cal HIT Plan will be completed by May 2010.

DHCS and CHHS will continue to work together to ensure the success of the HIE and the Medi-Cal EHR Implementation Program. The DHCS Director sits on CHHS' eHealth Advisory Board. Medi-Cal is also represented on CHHS' eHealth Coordinating Committee and the Technical Advisory Committee. In addition, there is DHCS staff representation on all of CHHS' HIE workgroups. Reciprocally, the CHHS Deputy Secretary, Health Information Technology, sits on DHCS' Health Enterprise Governance Council and participates in all of DHCS' Medi-Cal EHR Incentive Program planning activities.

3.4.3 Coordination with Public Health

CDPH administers many programs that meet its mission of optimizing the health and well-being of the people in California. CDPH employs approximately 3,500 people in over 60 locations around the state and administers a budget of over $3 billion. CDPH is the lead entity providing core public health functions and essential services to the state's more than 37 million residents. To provide detection, treatment, prevention and surveillance of public health and environmental issues, CDPH has five centers and two offices: Center for Chronic Disease Prevention and Health Promotion; Center for Environmental Health; Center for Family Health; Center for Health Care Quality; Center for Infectious Diseases; Emergency Preparedness Office; and Health Information and Strategic Planning.

CDPH is a leader in the use of information to assess health status of communities, evaluate interventions, develop policy and programs, and enforce laws and regulations that protect health and ensure safety. As such, CDPH works closely through local health jurisdictions and regional programs to receive required reporting and deliver community information. Current statutory reporting by providers, hospitals and

[18] http://www.dhcs.ca.gov/Pages/DHCSOHIT.aspx.

laboratories is more extensive than the Stage 1 meaningful use criteria of the EHR Implementation Program for public health. CDPH is steadily automating its processes to reduce effort required by providers to meet these reporting requirements including systems such as the Web-CMR/ELR project and electronic birth and death registration systems. Although there are significant improvements necessary to achieve expected Stage 3 criteria for meaningful use, CPDH expects to be able to assist providers and hospitals in meeting Stage 1 criteria.

The Centers for Disease Control and Prevention (CDC) Public Health Information Network (PHIN) is a national initiative to improve the capacity of public health to use and exchange information electronically by promoting the use of standards, and defining functional and technical requirements.[19] Public health programs must comply with PHIN requirements for systems that are specified in grants, as well as part of the necessary standards for reporting a variety of program data to CDC. Although requirements continue to change over time, the principal is the use of standards based architecture, vocabularies, messaging, and data standards to facilitate the exchange of data and information from local to state to national public health agencies. This public health experience in creating electronic exchanges may be leveraged in the national HIE efforts. In addition, it will be critical for CDC PHIN requirements to align with ONC requirements related to HIE including NHIN, Healthcare Information Technology Standards Panel (HITSP), EHR certification and meaningful use criteria.

CDPH and CHHS will continue to work together to ensure the success of the HIE and the Medi-Cal EHR Implementation Program. CDPH is represented on CHHS' eHealth Coordinating Committee, the Technical Advisory Committee and the Technical Working Group. In addition, there is CDPH staff representation on many of the CHHS' HIE workgroups.

3.4.4 Coordination with Other State Agencies and Programs

CHHS's eHealth Policy Branch, comprising of CalPSAB and CalOHII, will maintain active participation on the California eHealth Advisory Board and public workgroups over the next five years. The eHealth Policy Branch staff is represented on the Patient Engagement Workgroup, the Vulnerable and Underserved Population Workgroup, the Financing Workgroup and the Technical Committee to ensure privacy and security input into the HIE planning process.

The eHealth Policy Branch will also work directly with the GE. Members and staff of the GE will reside on CalPSAB, and will be encouraged to participate in Committees and Task Groups. Reciprocally, members and staff of CalPSAB will participate on technical infrastructure workgroups of the GE. This

[19] http://www.cdc.gov/phin/about.html

structurally defined information sharing will ensure privacy and security input into the technical design and curb redundancies in like efforts.

3.4.5 Coordination of Services for Vulnerable and Underserved

Coordinating the administration of CHHS programs, which support California's vulnerable and underserved populations, with program-related information technology (IT) capital investments is essential to maximizing California's existing and future HIE infrastructure. Aligning these CHHS programs with relevant ongoing IT investment planning is critical to the long-term success of HIE. CHHS departments and programs can help develop, promote and ensure the consistent policies and interoperable systems necessary to support federal meaningful use criteria, and to ensure more effective and efficient service delivery and program outcomes.

As part of its initial efforts, CHHS programs and partners are working on integration strategies that will provide more effective and timely health care and other services for children in foster care. California is also beginning to integrate HIE efforts by DHCS (Medicaid or Medi-Cal), CDPH (Immunization Registry, Public Health Lab Reporting, clinical preventive services), Social Services (which is in the process of procuring a new Statewide Automated Child Welfare Information System), Mental Health (working with County Mental Health Agencies to implement electronic medical records for mental health services), and other CHHS Departments.

3.4.6 Coordination with Other State Agencies and Programs

CHHS has established a Health Information Exchange Policy and Coordination Workgroup (comprising the Directors, CIOs and key staff from the 13 departments and 2 offices in CHHS) to begin a process to ensure better coordination across CHHS programs, with other State and local government partners, and with State IT investments in support of California's HIE efforts. These departments and offices within CHHS represent $ 25 billion dollars in annual health and human services expenditures serving more that six million California children, individuals and families. These State governmental stakeholders in the CHHS HIE Policy and Coordination Workgroup include:

CHHS Departments and Offices:

- Department of Aging
- Department of Alcohol and Drug Programs

- Department of Child Support Services
- Department of Community Services and Development
- Department of Developmental Services
- Emergency Medical Services Authority
- Department of Health Care Services
- Managed Risk Medical Insurance Board
- Department of Mental Health
- Department of Public Health
- Department of Rehabilitation
- Department of Social Services
- Office of Statewide Health Planning and Development
- Office of Health Information Integrity
- Office of Systems Integration

State Government Entities and Partners:

- Department of Managed Health Care
- California Public Employee Retirement System
- Department of Corrections and Rehabilitation
- California Area Indian Health Services
- Local Public Health Departments
- Local Social Services Agencies
- County Mental Health Departments

3.4.6.1 CHHS HIE Policy and Coordination Workgroup Planning Process

The Workgroup was convened by the Deputy Secretary in October 2009 and has embarked upon a collaborative planning process along with key State government partners to develop the State's roadmap for cooperative development and implementation of HIE by CHHS departments and offices. The planning process focuses on the development of three HIE use cases:

- A process: Responding to an emergency - H1N1 flu outbreak
- A condition: Effectively caring for beneficiaries with multiple chronic and co-occurring conditions
- A population: Providing services for children in foster care programs

For each use case, the workgroups are to outline:

- CHHS requirements for HIE, with focus on meeting federal meaningful use criteria,
- Progress toward HIE that has been accomplished by CHHS and its partners to this point,
- Gaps, barriers and key building blocks toward HIE, and
- Ordered priorities and the recommended "path" or stepping-stones toward development and implementation of HIE services needed especially for vulnerable populations being served by CHHS Departments and programs.

3.4.7 CHHS Coordination with Other States and NHIN Direct

Like its border-states – Arizona, Nevada and Oregon - California faces many barriers to the development of HIE. Recognizing the barrier to interoperability posed by varying state health information privacy laws, efforts will be made to harmonize the disparate requirements of our neighboring states. While California does not have particularly dense populations along its state borders, health care providers, especially large hospital systems and integrated delivery networks (IDNs), have a significant presence in neighboring states and across the country. These institutions are interested in participating in programs that are consistent across state lines, and do not require distinct and inconsistent policy guidance and rules. The State will continue conversations with policymakers, and the public and private institutions from both California and neighboring states.

The eHealth Policy Branch is involved in the National Governors' Association's (NGA) discussions on strategies for advancing interstate HIE. The eHealth Policy Branch will continue to monitor NGA's work on alternative policies to remove barriers to interstate HIE. Future demonstration projects will be expected to test policies that facilitate interstate HIE.

As part of the process of aligning with other states' statewide HIE activity, Cal eConnect will review and incorporate updates to the statewide HIE toolkit modules as they are provided by ONC. California is committed to staying up-to-date with this policy guidance, as a necessary enabler of close coordination with State and federal efforts.

California will continue to track and align where appropriate with national interoperability initiatives. David Lansky, co-chair of Cal eConnect's Board of Directors is a member of the National Health IT Policy Committee and co-chair of the Committee's NHIN workgroup. The Deputy Secretary, Health IT is also a member of that workgroup, and California is a founding member of the NHIN Direct Implementation Work Group. Through these and other interactions, California seeks to advance both the goals of NHIN while building internal infrastructure so that we may take full advantage of the NHIN lessons and move the industry toward ubiquitous, safe and secure movement of health information.

The emerging NHIN Direct Model may prove to be a valuable resource in addressing both interstate and intrastate HIE, and the State actively seeks opportunities to participate in pilots and demonstrations in these and other efforts to develop interstate compacts to enable cross-border HIE. At the request of CHHS, three California HIOs – Santa Cruz, East Kern County Integrated Technology Association and Long Beach Network for Health – took part in a successful "Coordinating Care across California" NHIN demonstration at the Healthcare Information and Management Systems Society (HIMSS) 2010 Annual Conference and Exhibition. Redwood MedNET also participated in a demonstration using the latest NHIN CONNECT gateway to exchange patient data with Thayer County Health Services in Nebraska. Finally, California's largest IDN, Kaiser Permanente, is now using NHIN CONNECT to link patient records with the US Department of Veterans Affairs and the Department of Defense in San Diego. Additional California HIOs and State agencies expect to participate in demonstrations and pilots using NHIN Connect infrastructure as part of our implementation efforts.

Working with NHIN and NHIN Direct, Cal eConnect and California stakeholders will participate in NHIN Governance Training, as specified by ONC. Based on this training, Cal eConnect and other HIE infrastructure participants will supply foundation services and standards to support patient engagement

and public health. The HIE services will be designed to interoperate with NHIN CONNECT/NHIN Direct to expand participation in the overall NHIN by participants in California.

3.4.8 CHHS Coordination with Federal Efforts

CHHS and Cal eConnect will engage directly with federal delivery systems including but not limited to the Department of Veterans Affairs (VA), Department of Defense (DoD), The Social Security Administration (SSA) and the Indian Health Service (IHS) to ensure that the state and stakeholders can meet the various federal requirements in order to engage in health information exchange with these federal agencies. In addition, CHHS will work with Cal eConnect and CHHS programs to develop standards and methods for interchange of data and information with other federal partners. CHHS programs report a range of clinical information to federal partners, such as CMS, HRSA and CDC, as part of federally-funded programs that assess quality of care, prevalence and incidence of diseases and conditions, and efficacy of programs and interventions. CHHS strongly supports coordination across federal agencies that either support the delivery of health services or receive reporting information from state agencies to assess the health of the populations and the services received. This type of coordination has not occurred consistently in the past and will be essential for the success of the health information exchange.

Cal eConnect is working with CalRHIO and the SSA to transition a grant that would allow electronic health information from three organizations in California: Santa Clara Valley Health and Hospital System, El Camino Hospital, and Greater Newport Physicians Independent Physicians Association, to be safely and securely be exchanged through the NHIN to the SSA. That program is expected to begin this summer and would become a critical component of California's HIE infrastructure.

4. Landscape and Capacity

4.1 California Landscape: The Varied Characteristics of HIE Stakeholders and Their Relationships

The basic EHR adoption rate among California providers ranks above the national average, yet the State has a long way to go before comprehensive adoption is realized.[20] Among individual physicians, California physicians reported 37% EHR use in comparison to national average of 28%.[21] Notably, the majority of community clinics have some form of HIT in place, most commonly in the form of diabetes and immunization registries. A California Primary Care Association (CPCA) survey from August 2009, found that at least 20% of community clinics and health centers had and were actively using EHRs, another 10-20% were actively pursuing EHR adoption and 30% intended to start pursuing an EHR when the incentive program begins.

California's current HIE efforts fall broadly into two categories: community-driven efforts that aim to ensure ubiquitous availability of data within a region or across the state, and large health systems including affiliated providers implementing integrated EHRs.

California's large, diverse health care delivery system is characterized by provider organizations of varying sizes, including very large (e.g., Kaiser-Permanente), large (e.g., Sharp Healthcare), medium (e.g., Palo Alto Medical Foundation) and small (e.g., small and solo physician practices) providers. Outpatient providers in a community may be tightly integrated (e.g., via integrated delivery networks), loosely affiliated (e.g., in Integrated Practice Associations [IPAs]) or entirely independent. Hospitals may be part of regional, statewide or multi-state chains, or they may be independent local facilities. Hospitals and community outpatient physicians may be tightly integrated in combined business entities (such as an Integrated Delivery Network [IDN], like Kaiser Permanente [KP]), or they may be related only by virtue of physician admitting privileges. Provider organizations that are part of larger commercial entities may be well capitalized and capable of sophisticated infrastructure projects, whereas independent provider organizations or organizations treating underserved populations may be thinly capitalized and less able to develop and support complex infrastructures. In addition, the Veterans Administration, Department of Defense and Indian Health Service also operate substantial facilities throughout the state.

With respect to ancillary services, large clinical laboratories with national data centers operate in California, as do smaller regional laboratories and local hospital laboratories. National pharmacy chains

[20] The State of Health Information Technology in California. California HealthCare Foundation. 2008.
[21] Ibid.

have facilities across the state, but small independent pharmacies also operate in their local communities. Imaging centers, urgent-care facilities, surgical centers, surgical hospitals and dialysis centers are similarly diverse in their degree of "horizontal" integration, depending on whether they are structured in as chains or independent entities, and their degree of "vertical" integration in their business relationships with hospitals, community physicians, employer groups and other entities.

Health care in California is funded through a mosaic of payment mechanisms. National, statewide and regional commercial insurers operate in California. State and local governments finance care for the underserved through a variety of mechanisms, including Medi-Cal (fee for service and managed care), Healthy Families and the County Medical Service Program, with a separate mechanism for managing prisoner health. Medicare finances care for the elderly population. Insurance-payment models include network-based fee-for-service (Preferred Provider Organization [PPO]), network-based capitation (Health Maintenance Organization [HMO]) and indemnity and increasingly shared medical savings plans, as well as a wide variety of payments at facilities including percent of billed charges, case rates, per diem charges and hospital capitation. Delegation of risk and other insurance functions via HMOs (covering almost 16 million Californians[22]) is more common in California than most other states. Medicare and Medi-Cal delegate risk and claims-payment functions to commercial insurance carriers through Medicare Advantage and other programs. Commercial insurers delegate risk and claims-payment functions to contracted IPAs or medical groups. A patient-centered health care system will necessitate HIE across all of these types of organizations, regardless of their sizes, relationships or existing HIT capabilities.

4.2 Gap Analysis for Achieving HIE in California: What's Currently Missing?

The relatively low penetration of EHRs in outpatient practices and hospitals is a significant barrier to the achievement of HIE for meaningful use. Highlighted below are some of the prominent gaps in HIE capabilities needed for meaningful use in 2011, as defined in the recently released NPRM and Interim Final Rule for Standards for Electronic Health Records (IFR):

- Between 50% and 60% of outpatient laboratory tests in California are performed by either LabCorp or Quest Diagnostics. The remaining tests are performed by over 17,000 hospital, regional, public health and provider office laboratories, none of which represent significant market share. Most of these hospital and regional laboratories are not prepared to send structured electronic laboratory data to outpatient physicians.

[22] California HealthCare Foundation, Cattaneo and Stround - http://www.cattaneostroud.com/

- There is no universally trusted framework for identity management and authentication of the principals participating in HIE transactions. Where trust relationships exist, they exist only among principals within the same enterprise and among principals in enterprises that have bi-lateral information-exchange agreements, or among principals in enterprises that participate in a regional HIO with a trusted identity-management framework. These relationships represent only a small fraction of the California market.

- Small primary care practices with fewer than 10 physicians represent over 60% of active primary care physicians (PCPs) and provide the majority of outpatient care in California. Most of these currently lack the ability to provide patients access to their health data through a "tethered" PHR (i.e., on that is tightly integrated with the organization's EHR).

- Many eligible professionals practicing in small provider organizations lack the ability to aggregate data sufficiently to generate patient lists or report ambulatory quality metrics from EHRs to support the disease-management and quality measurement requirements of meaningful use.

- Only one of the State's nine immunization registries has the capacity to accept immunization data via Health Level 7 (HL7) messaging directly from EHRs.

- CDPH's Reportable Disease Information Exchange (CalREDIE) application for collecting reportable laboratory data (Electronic Laboratory Reporting project [ELR]) and syndromic surveillance data (web-based Confidential Morbidity Reporting project [CMR]) is in pilot production and not yet operational statewide.

- Most provider organizations and ancillary organizations do not have technology in place on-site or via external service providers or regional HIOs to fully participate in meaningful use.

- Some regions in the state continue to operate in an extremely competitive environment for health care services, limiting their ability or desire to cooperate in HIE activities.

4.2.1 Current HIE Capacity in California

California's existing HIE infrastructure is in various stages of development as multiple uncoordinated HIE efforts have developed over the past 15 years as regional initiatives. The following descriptions are not inclusive of every example of HIE in the state, as additional exchanges are rapidly emerging.

4.2.1.1 Regional HIOs

As inventoried in the Strategic Plan, California has HIOs in local regions of the state that are at different stages of maturity and address various types of HIE goals. Although several HIOs are operational and provide valued services, none as yet encompasses all of the health care organizations in its respective region, nor provides all of the HIE capabilities required to meet current meaningful use criteria. As these organizations further focus their efforts on supporting meaningful use goals, they may support HIE in their regions more extensively, and perhaps expand as the demand for HIE across enterprises increases with the Medicare and Medi-Cal incentive programs. The technologies used in some of these HIOs may provide models or solutions for HIE, or these regional HIOs may need to evolve to comply with HIE guidelines. For the time being, a limited number of eligible providers in California have access to HIE services through a regional HIO.

In addition to the regional HIOs as described above, there are many other initiatives and data exchange resources that are important components of the HIE infrastructure in California. New programs exchanging clinical data after the publication of the Strategic Plan include, but are not limited to, Orange County Partnership Regional Health Information Organization, KP/Veterans' Administration (VA)/Department of Defense (DoD) and others. Cal eConnect will develop a process for tracking and updating the progress of HIOs and data exchange initiatives throughout the state.

4.2.1.2 e-Prescribing Networks

e-Prescribing networks are an important component of California's HIE infrastructure and will be needed to support provider meaningful use. While 97% of retail pharmacies affiliated with large chains are connected to the nation's largest proprietary e-prescribing network, only 62% of independent pharmacies are connected.[23] Hence, rural or remote areas with a prevalence of independent pharmacies generally have lower e-prescribing activity. Notably, in the Los Angeles-Riverside-Orange County network, nearly a third of the 3,000 retail pharmacies are not yet connected to the proprietary e-prescribing network. Depending on the clustering of connected and non-connected pharmacies, there may be areas in which eligible providers with EHRs are not yet able to submit prescriptions electronically via these networks.

These networks may also be an important facilitator of medication reconciliation, as medication dispensing and claims data from participating pharmacies and Pharmacy Benefit Managers (PBMs) are aggregated within the network and made available to authorized health care providers. This service provides a potential means for viewing outpatient medication histories across sites of care. As with e-

[23] Surescripts 2009 Progress Report on E-Prescribing.

prescribing, the effectiveness of this resource is affected by its degree of connectivity among pharmacies and PBMs, which is not yet universal.

In addition to connectivity gaps, the dominant e-prescribing network currently has technical limitations, including difficulties in electronically transmitting prescription renewal requests to providers that practice at multiple sites and challenges in matching patient identities when retrieving complete medication history data. The inclusion of proprietary e-prescribing networks is not an endorsement by the State, but rather recognition of the value that these networks may bring toward the successful implementation of the Operational Plan.

4.2.1.3 HIE Infrastructures of Large Provider Organizations

Certain provider organizations in California are already well integrated and achieving HIE within the scopes of their enterprises and in some cases outside of it. Kaiser Permanente (KP) is one such example. The KP delivery system recently completed a large EHR infrastructure project that enables KP providers and hospitals to share and exchange information with each other, as well as to prescribe, order and receive test results electronically and provide patients access to their own health data through a web portal. Within the Kaiser delivery system, therefore, much of the infrastructure necessary for meaningful use already exists. Other IDNs and hospital systems including Palo Alto Medical Foundation, Long Beach Memorial Medical Center, Catholic HealthCare West, Adventist hospital systems and others have had similar successes. Cal eConnect will leverage the proactive investment resource commitment and investment that many large provider organizations have made. For example, KP is carrying out live exchange with the VA and DoD. .

A number of IDNs in California engage in collective purchasing of EHR technology and have adequate capital budgets to integrate their EHRs with each other, with their hospital systems, with their ancillary services and with other data sources. Although few of these IDNs achieve sufficient HIE to support all of the meaningful use goals, they are relatively well positioned to support HIE through their abilities to dictate standards within their organizations, build customized data interfaces and operate internal infrastructures for authentication and access control. HIE services may enable large provider organizations working multiple EHR implementations and systems to enable interoperable data exchange within the organization itself. Cal eConnect will consider this scenario as a specific use case and include using HIE services to enable intra-organization exchange as part of the implementation planning process.

A number of more loosely affiliated, community-based provider organizations, such as IPAs, have also developed HIE capabilities. IPAs provide additional HIE resources, such as data interfaces to local

hospitals, administrative web portals that facilitate eligibility checking (especially for capitation patients), and patient web portals that provide patients access to their health information and messaging capabilities with their providers. For example, Hill Physicians Medical Group and John Muir Health Network (along with Eisenhower Medical Center) are exchanging clinical information for overlapping patient populations. Although no specific patterns of integration exists across the many different and diverse IPAs, many are providing some or all of these capabilities, with plans to expand these services as the meaningful use incentives create increased demand for HIE. These regional, proprietary, IDN, Hospital, and physician networks represent opportunities that must be leveraged by Cal eConnect in order to maximize HIE capacity in California and allow as many eligible hospitals and providers as possible to meet HIE-dependent meaningful use criteria.

4.2.1.4 Commercial Infrastructure Components

Beyond the HIE infrastructure that provider organizations have built or purchased for their specific use, a number of commercial resources exist that can facilitate HIE required for meaningful use in the future. Several are listed below.

- Untethered PHR systems: These systems may play a role in providing patients with access to their own medical information under the meaningful use criteria to the extent that providers' EHR systems can securely export such data to the accounts that patients maintain in these systems. Standards for specific activities and services enabled by PHRs will need to be developed before this is likely to occur on any large scale. This approach may be valuable for providers who do not have the capacity to operate their own patient web portals. Several provider organizations have implemented or are exploring this strategy today.

- Insurance clearinghouses for EDI transactions (especially claims submission and electronic remittance advice): These clearinghouses remain the prevailing mechanism for providers to electronically transmit claims to payers. They serve the purpose of aggregating claims submissions from many small provider organizations and forwarding them to payers, which obviates the need for payers to maintain direct connectivity with thousands of physician practices. Over a dozen clearinghouse vendors currently provide this service in California. One potential advantage of expanding EDI services to include clinical data is that these organizations have existing provider relationships, and the payment for the financial transactions may be sufficient to cover some or all of the ongoing costs of the clinical transactions.

- Payers' portals for web-based administrative transactions, specifically, eligibility inquiries: All of the major payers in California, including Medi-Cal, provide web portals for submitting eligibility inquiries. These portals provide basic eligibility information regarding a member's enrollment status. Some of the portals provide more detailed information about eligibility, including specific covered benefits and/or patient-specific deductible balances. However, this infrastructure for electronic eligibility checking remains imperfect because multiple discrete data elements are required to uniquely identify someone and avoid false positive matches in the payer's enrollment database, and many payers do not provide all of the needed eligibility and benefits information via their web portals.

Connectivity with commercial enterprise applications: In designing the technical architecture for statewide HIE services, Cal eConnect will also consider connectivity with commercial enterprise applications running HIEs today.

4.2.1.5 Immunization Registries

Over 100,000 (almost 20%) of two year-old children in California are not fully up-to-date with their immunizations. These children are at risk of severe or fatal illness from whooping cough, influenza, measles and other vaccine-preventable diseases. The complexity of the evolving immunization schedule, the migration of children among health care providers through childhood, and the constraints of traditional medical record systems make tracking children's immunizations difficult. These factors contribute to both the lack of immunizations and to over-immunization, which occurs when records cannot be found to verify prior vaccinations.

An immunization registry is a secure database of immunization records that addresses these problems. The registry provides a complete record for private and public health care providers, families, schools and child health, education and welfare agencies. Over the last 15 years, California has incrementally developed a collaborative, decentralized system of nine regional and one county web-based immunization registries collectively known as the California Immunization Registry (CAIR) (See Figure 2).

Figure 2. Immunization Registries in California

CAIR provides secure, electronic exchange of immunization records to support the elimination of vaccine preventable diseases. Within each region, CAIR allows users to see patient demographic data, immunization history, immunization forecasting, contraindications, overdue immunizations and other functions. CAIR provides users with copies of standard immunization record cards, usage reports, appointment remainders and inventory management. There is no capacity to search across multiple registries at this time, thus limiting these benefits to both providers and patients on a region-to-region basis and more generally statewide.

Table 4. Systems and Interfaces for Immunization Registries in California

Region	System Used	User Access
Bay Area Regional Immunization Registry (BARR)	CAIR	Web
Central Coast Immunization Registry (CCIR)	CAIR	Web

Region	System Used	User Access
Central Valley Immunization Information System (CVIIS)	CAIR	Web
County Registries: Imperial County	County-Specific	Web
Contra Costa Automated Immunization Registry (CCAIR)	County-Specific	Client Server
Immunization Network of Northern California (INNC)	CAIR	Web
Los Angeles-Orange Immunization Network (LINK)	CAIR	Web
Regional Immunization Data Exchange (RIDE)	Region-Specific	Web
San Diego Regional Immunization Registry (SDIR)	Region-Specific	Web
Shots for Tots KIDS Regional Immunization Registry	CAIR	Web
VaxTrack Regional Immunization Registry	Region-Specific	Client Server

The majority of HIE between immunization registries and EHRs involves the transfer of updated immunization data, for which prompt, rather than immediate or real-time, exchange is usually sufficient. There are currently some EHR systems securely sharing data with CAIR, primarily through data exports in a standardized flat file format. Such exports are easy and inexpensive to implement, especially for providers who have limited IT resources and technical support. Nationally, flat files remain the predominant method by which immunization registries obtain electronic data. The sharing of immunization records using HL7 messaging has been technically challenging to registries nationwide despite considerable, ongoing effort. With the exception of registries in one county, California's regional immunization registries do not currently have the capacity to accept immunization data via HL7 messaging directly from EHRs.

4.2.1.6 Public Health Surveillance Resources

CDPH is currently implementing the CalREDIE application, which will support the electronic submission of laboratory results for reportable diseases via the ELR system, as well as web-based CMR. Both ELR and CMR, through CalREDIE, specifically target the 80 reportable diseases and conditions as cited under Title 17 of the California Code of Regulations.

The CalREDIE application began a three-month, three-county pilot phase in January 2010, and is scheduled for operation by the spring of 2011. In the pilot, ELR includes a manual method to key enter laboratory results. Once fully implemented, ELR will provide for electronic data submissions from approximately 2,200 commercial laboratories (hospitals, reference, public health) and 15,000 licensed physician operated laboratories.

State legislation (AB 2658) requires laboratories to electronically transmit laboratory reports to the State. This requirement is referred to as "laboratory readiness" for which laboratories have already begun work

to prepare and map laboratory tests and results to standard terminologies, such as Logical Observation Identifiers Names and Codes (LOINC) and Systematized Nomenclature of Medicine (SNOMED) and subsequently construct standard HL7 messages for transmission.

At the local level, more than half of the 61 local public health jurisdictions are engaged or have previously engaged in syndromic surveillance data collection. Data sources vary widely, but predominantly include Emergency Department (ED) data from chief complaint or International Classification of Diseases, version 9 (ICD-9) diagnosis. Other data sources include school absentees, sentinel providers, pharmacies and laboratories. Some syndromic surveillance data are submitted electronically, but this varies widely by data source, jurisdiction and surveillance platform or solution. For example, ED data often originates in billing systems, which tend to be automated more readily by large providers. CDC offers surveillance tools to analyze these data, including BioSense, ESSENCE, Real Time Outbreak Disease Surveillance (RODS) and Early Aberration Reporting System (EARS.) Commercial offerings include SYRIS, FirstWatch, Reddinet and EpiCenter.

4.2.1.7 Health Data Standards Infrastructure

The technical architecture for statewide HIE services will use the following existing health data standards:

1. *Laboratory Reporting*: Although many versions of HL7 are currently used for reporting laboratory results to EHRs, an effort is underway to standardize laboratory reporting based on the EHR-Laboratory Interoperability and Connectivity Specification (ELINCS) implementation guide, which was developed by CHCF and HL7. Although ELINCS is used in only approximately 50 laboratory interfaces today, its use continues to grow and it is supported by a number of laboratory service providers, including LabCorp and Quest Diagnostics. By the end of 2010, Quest Diagnostics will offer laboratory reporting based on the ELINCS standard to any of its clients in California, utilizing Quest's national result-reporting hub and web-services protocols.

2. *Administrative Simplification*: There is nearly universal support for the HIPAA X12 4010 administrative transactions among commercial payers. In particular, these payers support the 270/271 transaction for electronic eligibility checking and 837 transaction for claims submission, as required by the EHR certification for meaningful use criteria. Although only 50% of the private payers currently support the Council on Affordable Quality Healthcare Committee on Operating Rules for Information Exchange (CAQH CORE) Phase-1 rules,

which are also required for meaningful use, two-thirds have indicated that they are planning to support the Phase-1 rule within the next 12 months.

3. *Clinical Summary*: Many of the EHR vendors currently used by eligible providers are expected to be using certified EHRs that support the HL7 Continuity of Care Document (CCD) or the American Society for Testing and Materials Continuity of Care Record (ASTM CCR) document standards for exporting and importing clinical summaries. At least 80 ambulatory EHR products are now certified to this level, and 15 products also support the CCR format for structured document exchange. Although the CCD and ASTM CCR standards are just starting points towards semantic interoperability of clinical summary data, they are sufficient to satisfy the meaningful use criteria and are already supported by many of the products likely to be used in California.

4.2.1.8 Network Infrastructure

According to the 2007 California Broadband Task Force study, 96% of California residences have access to residential or commercial broadband services, such as digital subscriber line (DSL) and cable. Based on these findings, it is estimated that roughly the same percentage of health care providers has access to broadband. Areas lacking coverage appear primarily in rural and isolated regions of the state, where population density is low. Even in these areas, however, T-1 grade network service is available, although at much higher and often prohibitive price.

With the goal of narrowing the urban/rural gap in residential broadband coverage, the California TeleHealth Network (CTN) is a statewide initiative to bring network services sufficient for telehealth applications to all health care facilities. This project was initiated by a request from Governor Schwarzenegger, is largely subsidized through a three-year $22.3 million FCC grant, and plans to build a private network with sufficient bandwidth (a minimum of 1.5 megabits per second) and specialized capabilities to support real-time videoconferencing and other telehealth applications. A secondary goal of this project is to bring broadband-grade service to health care facilities in rural areas at a more cost-effective price than currently offered through the commercial marketplace.

5. Technical Infrastructure for Statewide HIE Services

To help define the requirements for the HIE architecture, members of TAC completed a survey describing their current HIE capabilities, the technical resources they use to achieve these capabilities and gaps in resources that impede or prevent their ability to achieve HIE. Although TAC membership represents only a very small subset of the broader stakeholder community, the members of the group were able to share diverse views on HIE design.

The straw man architecture described here was defined by TWG, based on general requirements proposed by TAC and on TWG members' own knowledge of technical requirements for HIE. The design approach begins with proposing this high-level architecture and a number of specific architectural components as a starting point for further discussion. Hence, the design expressed in this draft document is by no means the only design, or necessarily the best design, for the future HIE architecture. Comments and input on this document and future versions of it will inform that ultimate design even as the Operational Plan is implemented.

5.1 Business and Technical Requirements

The HIE design was informed by a set of general principles and guidelines, as well as a set of specific requirements coming from the meaningful use criteria of the federal government. In addition, the design is intended to address gaps between existing HIE infrastructure and the needs of stakeholders to achieve meaningful use and other health care improvement goals.

5.1.1 General Principles and Guidelines

The following list represents high-level requirements that provide guidance for the conceptualization and design of an HIE infrastructure in California.

- HIE capabilities that are needed to ensure compliance with the federal government's meaningful use criteria should inform prioritization of the functional requirements for the technical architecture and the shared services that will be developed. However, although priorities, the technical infrastructure and services should not be bound by the meaningful use criteria, and services provided by the HIE should be self-sustaining and help offset the costs of building additional value-add services.

- HIE services should support means for provider organizations of all sizes, in all locations and serving all populations, including the vulnerable and underserved, to achieve meaningful use.

- HIE services should complement and support, not impede, the core business and clinical processes of the intended providers and consumers of HIE services.

- HIE services should facilitate HIE where existing resources are lacking or insufficient to ensure that effective and affordable services are available statewide. Existing investments in HIE infrastructure should be leveraged, and services should not disrupt or displace existing, effective resources that are compliant with State and federal requirements, providing they comply fully with the State's HIE governance and technical requirements.

- Near-term adoption and use of these HIE services should be balanced against the requirement to have a robust long-term solution. The architecture should be flexible enough to enable a process of continuous improvement to address technology changes, new security threats and developing technical specifications, requirements and innovations.

- Patients and their families should be considered among the consumers and primary beneficiaries of HIE services and meaningful use of HIT, and the design should be made patient-centric whenever possible.

- The HIE infrastructure should be secure with respect to ensuring the identities of counterparties, transmitting health information such that it cannot be disclosed to unauthorized parties or modified in transit, and in compliance with all applicable regulations and laws (including those CalPSAB guidelines that are ultimately adopted by CHHS).

- It is not sufficient for the HIE infrastructure to "be secure." It must also be *perceived as secure* by stakeholders, including health care providers and the general public. The HIE infrastructure must be paired with appropriate policy and procedure infrastructure to develop the trust required to be used by California stakeholders, including health care providers and the general public.

- Technical and security requirements of the HIE services must be consistent with and should support participating entities' compliance with privacy and security requirements.

- Use of the shared services developed under the State HIE Cooperative Agreement Program should be voluntary. Any stakeholder can choose to use the resources of their own enterprise, a regional HIO or any other entity to achieve HIE. Use should also be available to any health care participant, subject to the technology requirements, operating rules and fee requirements of the services, and restrictions or requirements of HIPAA and the HITECH provisions of ARRA.

- Design shall support interoperability with the NHIN as one emerges and with the HIE infrastructures of other states.

Meaningful use criteria within the NPRM specify that eligible professionals and hospitals detail specific security requirements for HIE certified EHR technology. The security requirements for EHR certification, as currently specified in the IFR, include the following provisions:

1) Health information must be encrypted when in transit through the use (at a minimum) of transport-level security mechanisms, such as Transport Layer Security (TLS) or Internet Protocol Security (IPSec.);

2) It must be possible to verify that exchanged health information has not been altered in transit through the use of a secure hashing algorithm; and

3) Transactions must contain sufficient identity information about the sending party (whether that party is providing health information or requesting health information) that the receiving party can make access control decisions, and produce detailed and accurate security audit trails.

5.1.2 California Privacy and Security Requirements

CalPSAB has formulated a set of recommendations regarding privacy and security guidelines for exchanging health information under the State HIE Cooperative Agreement Program. The guidelines that are accepted by the Secretary will become requirements for all entities that exchange health information using resources of the State HIE, via execution of contracts and grant agreements between Cal eConnect and participants in HIE.

The recommended guidelines are currently in draft form, but it is expected that many will be accepted by the CHHS Secretary. In certain cases, these guidelines go well beyond the criteria for HIE set forth in the meaningful use NPRM and in HIPAA, making it important to consider them in planning an HIE infrastructure for California.

Notable guidelines proposed by CalPSAB include:

- *Allowable uses and disclosures of PHI via HIE*: Uses and disclosures of PHI for transmitting through an HIE are initially limited to clinical treatment where a health care provider/individual relationship exists and mandated public health reporting purposes. This guideline applies to an independent health

information organization, as well as to two separate health care organizations who exchange PHI without the use of a third-party organization.

- *Patient consent to transmission of PHI via HIE*: An opt-in policy must be obtained to transmit PHI through an HIE for all other purposes before the information may be exchanged electronically.[24] CalPSAB is reviewing opt-in policies, subject to State and federal law, and in consideration of the State HIE Cooperative Agreement Program with ONC, and the features of the opt-in policy may change.

- *User authentication within an entity*: An entity shall authenticate each authorized user's identity prior to providing access to PHI. An entity shall authenticate each user to the level of authorized access that complies with the entity's level of trust agreement with the external exchange entity. An entity that authenticates users attempting to access individually identifiable health information remotely from an unsecured location or device, shall require National Institute of Standards and Technology (NIST) Level 3 authentication in which the data requester must establish two factors of authentication.[25] For example, if Entity A requires two-factor authentication to allow disclosures of PHI to Entity B, Entity B will need to use two factor authenticate for its own users, at least when requesting information from Entity A.

- *Entity authentication within a "trust network"*: If an entity is participating in a trust network HIE, the trust network shall manage entity authentication for those participating on the trust network, and an entity shall manage user authentication only for those entities participating on the trust network.[26] If the user authentication process is performed across multiple systems or entities, an entity shall implement the agreed upon authentication process as specified by the requesting entity among the participants in the trust network.

- *Authorization and access control*: An entity shall use the following access control attributes to determine if a user is authorized to access requested information in a way that corresponds to, and is compliant with, the data use agreements governing such access and as it aligns with State criteria:

    - Data Source

[24] As used in this context, "opt-in" refers to express permission from the patient to allow the provider to send or share Personal health Information (PHI) via the HIE.
[25] An authentication factor is a piece of information and process used to authenticate or verify the identity of a person or other entity requesting access under security constraints.
[26] A "trust network" refers to an online environment in which parties can interact with each other securely. A trust network ensures that all members adhere to some basic principles especially in nonrepudiation, data security, communications security, and IT security. Thus a Trust Network promotes trust between its members.

- Entity of Requestor
- Role of Requestor
- Use of Data
- Sensitivity of Data
- Consent Directives of the Data Subject

An entity that acts as a data requestor shall execute the authorization process at the location agreed upon in the data use agreements governing that exchange. The data requestor shall pass the authentication and authorization to the data supplier as a single message if so designated by the data use agreement.

5.2 The Proposed Architecture

5.2.1 Definitions

The definitions below help to describe the elements of the proposed HIE architecture and how they may interact. These definitions are not necessarily authoritative across all contexts. Certain definitions are based on ONC consensus definitions, whereas others are *ad hoc* definitions intended specifically to explain the HIE architecture described herein.[27] The State and Cal eConnect recognize that terms are in flux. As the national consensus on terms becomes more consistent, Cal eConnect will change the Strategic and Operational Plan to reflect these standardized definitions.

- *HIE*: The electronic movement of health-related information between *organizations*.
- *Principal (aka "actor")*: The individual or entity that is the original sender or the intended recipient of exchanged health information. The principal may be a person, an enterprise, a part of an enterprise (such as an ED), an application or a data repository (such as an immunization registry). If denoting a person, a principal may be a health care professional or an administrative professional at a health care enterprise. Examples of principals include physicians, physician practices, hospitals, care managers, health plans, pharmacies and immunization registries. Operationally, principals are the entities that initiate HIE transactions or the entities to which HIE transactions are directed. Note that principals are not equivalent to the nodes or end points on a network. Principals use such nodes to send or receive information.

[27] See http://healthit.hhs.gov/defining_key_hit_terms.

- *Counterparty (aka "data-trading partner")*: The other principal with whom a specific HIE transaction is conducted. The counterparty may be an individual or an entity.

- *Legal Entity*: A business entity that assumes responsibility for safeguarding the patient health information under its control and for managing in a secure manner the exchanges of patient health information in which it participates. Legal entities may be physician practices, hospitals, pharmacies, health plans or HIOs. The responsibilities of legal entities include ensuring that their users and applications (i.e., *principals*) are reliably authenticated when they request access to PHI that is controlled by other legal entities, and reliably authorizing access to the PHI they control when requested by other legal entities. Note that legal entities may directly authenticate their principals or may use a trusted third-party identity provider.

- *Enterprise*: A discrete business entity that controls in a top-down and centralized fashion the selection, purchase and management of its HIT resources, including the manner of interoperability among those resources. Enterprises may include health care provider organizations, public health agencies and payers. An enterprise is commonly a *legal entity* (as defined above), although it could be a collection of multiple legal entities (e.g., an IPA that purchases and manages the information systems of its constituent practices) or part of a legal entity (e.g., a hospital clinic that controls its own IT infrastructure). The key attribute of an enterprise is internal control over its IT resources, such that the enterprise can achieve *internal* HIE without necessarily having to agree on details such as communication protocols and messaging formats with other business entities.

- *Health Network Node*: An addressable network node that may be the source or the recipient of an HIE transmission. Health network nodes may include EHRs, laboratory information systems, PHRs and interface engines. Health network nodes are not equivalent to principals or legal entities. For example, in the electronic delivery of a laboratory result, the principals are the laboratory and the physician, the legal entities are the hospital in which the laboratory resides and the medical group in which the physician practices, and the health network nodes are the hospital's interface engine and the physician's EHR.

- *HIO*: An organization that oversees and governs the exchange of health-related information among principals. HIOs may include *regional* HIOs (see below), IPAs or other private non-profit, private for-profit or government entities that oversee and govern HIE. HIOs often provide *HIE Services* (see below).

- *Regional HIO*: An HIO that brings together health care stakeholders within a defined geographic area and governs HIE among them for the purpose of improving health and health care in that community.

- *HIE Service*: Any information system that facilitates HIE, along with its related standards, policies and processes. HIE services may be provided by private non-profit, private for-profit or government entities, including HIOs and commercial vendors.

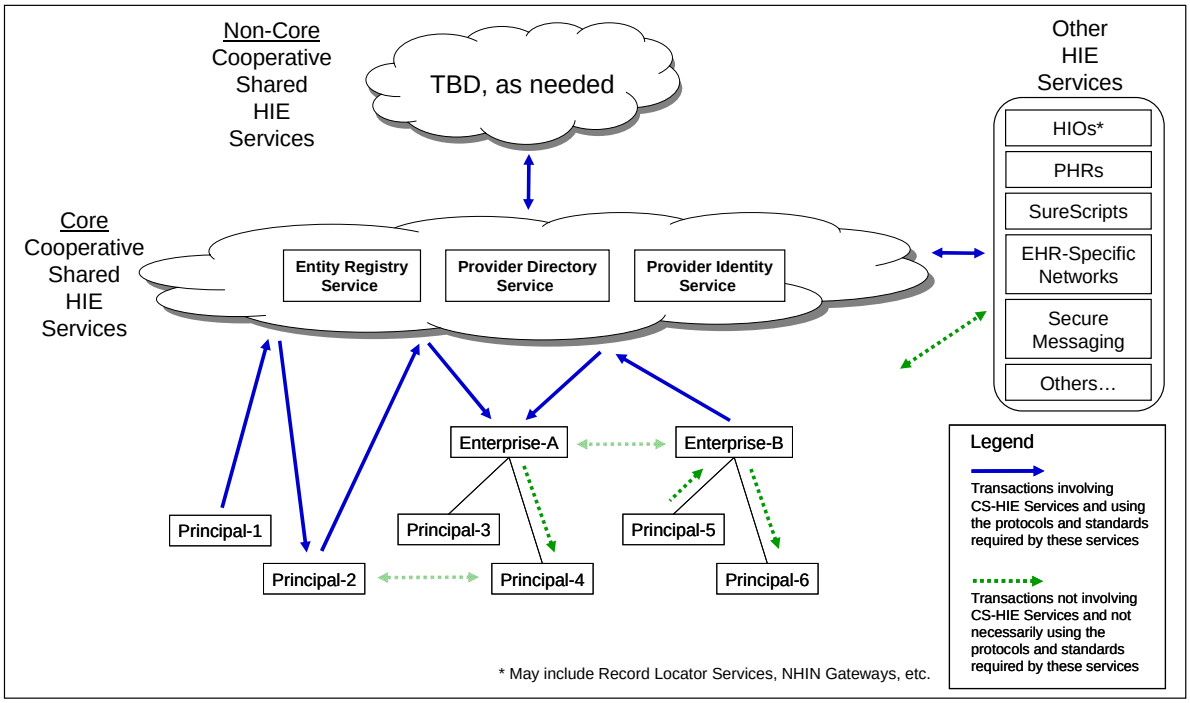
- *Cooperative Shared HIE Service (CS-HIE Service)*: An HIE Service that is available to any eligible stakeholder in the California health care system to enable HIE; managed, overseen, regulated and/or financially supported to some extent by Cal eConnect under the State HIE Cooperative Agreement Program; and is designated as a CS-HIE service by Cal eConnect.

- *HIE Infrastructure*: The complete set of technical resources that enable HIE, including CS-HIE services, other HIE services and the agreed-upon protocols, standards and policies for HIE.

- *HIE Architecture*: The set of HIE services and the specified ways that eligible providers and other entities interact with these services to achieve HIE.

5.2.2 Architectural Components and their Relationships

Figure 3. Proposed HIE Architecture for California



The elements of the architecture are briefly summarized below and further described in the following sections.

- Principals: The principals that engage in HIE may be part of larger enterprises (e.g., Principal-6) or they may be stand-alone, i.e., their own enterprise, such as a solo practitioner or an independent pharmacy (e.g., Principal-1). In any case, all principals that wish to use the CS-HIE services must be associated with a registered legal entity that can manage the principal's identity and attest to the principal's authentication.

- Enterprises: If principals are part of larger enterprises, they may use the resources of those enterprise as HIE services to communicate with other principals in the same enterprise, or they may use the resources of those enterprises as HIE gateways to communicate with principals in other enterprises (including via an HIO). For example, a hospital (Principal-5) in an IDN (Enterprise-B) could use the HIE services of the IDN to transmit a discharge summary to a physician (Principal-6) in the same IDN, or it could use an HIE gateway provided by the IDN to locate and send the discharge summary to a physician (Principal-4) who is not affiliated with the IDN.

- HIOs: Enterprises may be part of a regional HIO (if one exists) or they may be stand-alone. If part of an HIO, enterprises may use the various resources of the HIO (such as a record locator service or a NHIN gateway) as HIE Services to communicate with principals within the same HIO but outside of their enterprise, or they may use the resources of the HIO as a gateway to communicate with principals in other HIOs or in no HIO.

- e-Prescribing, PHRs or other HIE services: There may exist HIE Services furnished by entities other than the enterprise or the HIO to which a provider belongs. These Other HIE Services may include untethered PHRs, commercial prescription routing networks or secure messaging systems. A principal may benefit from these other services by either interacting with them directly, by interacting with them via its enterprise or by interacting with them via an HIO. For example, an HIO may provide a gateway for small physician practices to appropriately format and transmit electronic prescription to an e-prescribing network.

- Core Cooperative Shared HIE Services: In addition to the resources described above, there also exists a set of Core CS-HIE Services that provide a federated identity management service and directory service. These services are intended to create a broadly trusted framework for identity-management, authentication and electronic addressing to facilitate the HIE transactions otherwise undertaken by the principals, enterprises, HIOs and Other HIE Services described above.

Transactions that use the Core HIE services must conform to the specific protocols and standards defined for these services (see Legend in Figure 3). For example, an independent hospital in one part of the state (Principal-2) may wish to send a discharge summary to a physician (Principal-4) that is part of a large IDN (Enterprise-1) in another part of the state. The hospital would look up the physician's identity and electronic address via the Core HIE services using the specified protocols, authenticate for purposes of the transaction using the same Core HIE services protocols, and transmit the discharge summary to the physician's IDN. Upon receipt, the IDN would look up the hospital's electronic identity and verify its credentials using the Core HIE services, and then deliver the document to the physician using its own internal communications protocols.

- Non-Core Cooperative Shared HIE Services: These shared services provide additional functionality to certain principals, enterprises, HIOs and Other HIE Services for which the functionality would be otherwise unavailable. For example, the non-core HIE services may include an NHIN gateway for principals that are not part of a large enterprise, HIO or other entity that could otherwise provide this service.

- Bi-Lateral Communications: Note that enterprises or principals may, in certain cases, choose to have dedicated bi-lateral communication channels with other enterprises or principals that involve neither an HIO nor the HIE Services. For example, an IDN (Enterprise-A) may be part of an HIO, but may choose to use an existing lab-reporting interface it has developed to a national reference laboratory (Enterprise-B), rather than the laboratory-reporting service provided by the HIO.

A description of each of these components and their interactions follows, including several HIE use cases illustrating how the architectural components may be used to facilitate HIE.

5.2.3 Core HIE Services

Core HIE services are intended to create a foundation for organizations and participants to exchange health information across their organizational boundaries, such that two entities that have not necessarily exchanged information previously can find each other, positively identify each other in a trusted manner, determine where and how to effectively exchange health information, exchange information in a secure manner that supports both authorization decisions and the appropriate logging of transactions, and reconcile the identity of the individual patient to whom the information pertains.

The Core HIE services consist of an *Entity Registry Service*, a *Provider Directory Service* and a *Provider Identity Service*. These services provide the following primary functions:

- A **trusted process for positively identifying persons and organizations** with which one intends to exchange health information. Positive identification is provided through entries in the Entity Registry Service, a designated electronic registry of legal entities that have been certified as authentic and reputable by a trusted third-party. Certified entities, in turn, provide trusted identifying information about the specific persons, departments and other principals within their spheres of control with which health information may be directly exchanged.

- A **trusted registry of health network nodes** that can send or receive HIE transactions across organizations. The identities of these network nodes are also maintained as entries in the Registry Service and are certified as authentic and reputable by a trusted third-party. The entries allow the information systems that send and receive HIE transactions to verify each other's legitimacy, mutually authenticate each other, and protect health information in transit from disclosure or corruption. Each registered network node in the Registry Service must be associated with a single legal entity also registered there.

- A **trusted directory of electronic addresses** for principals with which health information may be exchanged (i.e., organizations, departments, applications and/or persons). These addresses, which may be maintained within the Provider Directory Service, are specific to the various kinds of HIE transactions offered (e.g., sending laboratory results, requesting medication lists). Users or information systems may use these directory entries to determine the correct address for sending specific kinds of transactions intended for specific recipients.

- A **trusted directory of the communication protocols and data standards** that may be used to exchange health information with specific principals (i.e., organizations, departments, applications and/or persons). These directory entries, also maintained in the Provider Directory Service, inform programmers and information systems about the set of transactions that are supported by various organizations, departments, applications and persons, and the appropriate communications protocols and data standards to use for each one.

The goal of the Core HIE services is to provide a lightweight and relatively flexible infrastructure to provide these functions, upon which additional services and resources for HIE may be layered.

Illustrative use cases of how the *Entity Registry Service*, *Provider Directory Service*, and *Provider Identity Service* may be leveraged to meet the HIE criteria for meaningful use are found in Appendix 16.

5.2.4 Entity Registry Service

The Entity Registry Service is intended to provide a trusted registry of the legal entities that are taking responsibility for authenticating the principals engaged in HIE transactions. It is also a trusted registry of the health network nodes that may be the senders or recipients of HIE transmissions. The service comprises part of a federated identity management system for HIE, and serves to inform parties and systems engaged in HIE transactions about the validity and authenticity of counterparties to their transactions.

The Entity Registry Service is not intended to be a registry of individual health care professionals, patients or consumers, nor to provide for the provisioning of such individuals for purposes of electronic transactions. Health care professionals (including physicians) will be provisioned and registered by their own institutions, by designated third-parties (such as HIOs) or by the Provider Identity Service. A registry of consumers/patients for the purpose of identification and consent management is outside the scope of the HIE Service architecture at this time, but may be defined as part of the architecture in the future or may be provided outside of this architecture.

Description: Entries in the Entity Registry Service are essentially trusted bindings of legal entities (as defined by name, location, alternate unique identifier such as National Provider Identifier [NPIs], type [e.g., physician practice, laboratory, emergency room]) to unique registry identifiers and to public encryption keys. These bindings are typically represented as *digital certificates* that are signed by a trusted, centralized *Certificate Authority*. A cardinal element of the registry is that its entries are trusted as legitimate and accurate by all stakeholders in the health care system. This trust will require both a rigorous process for provisioning legal entities and a timely process for modifying entries in the registry (including certificate revocation) as information about the entities changes.

Among the attributes of entities registered in the Entity Registry Service is a uniform resource locator (URL) that points to a directory of principals at the entity who may be the recipients of HIE transactions. This URL may reference a directory service hosted by the entity itself, hosted by a trusted third-party (such as an HIO) or hosted by the HIE Provider Directory Service. Regardless of which organization hosts the directory service, the service must conform to a standard interface for directory information as defined by the State HIE Cooperative Agreement Program (see Section 5.3.3).

The mechanisms by which valid entries in the Entity Registry (e.g., digital certificates) are made available may vary. The Entity Registry Service itself could have a web services interface that allows retrieval of certificates by systems wishing to validate specific legal entities. If no entry for a legal entity were

returned, the entity would be considered invalid. Alternatively, the Entity Registry Service could publish only those entries that have been revoked (i.e., a revocation list). If no entry for a legal entity were returned, the entity would be considered valid.

Operational Policies:

- Access to the Entity Registry Service is confined to entities that also have entries in the registry. Information in the registry, while not confidential, could be abused if available to the general public. This policy is analogous to that currently specified for NHIN Service Registry: All Nationwide Health Information Exchange (NHIE) to Service Registry communication must be authenticated and digitally signed via digital certificates to ensure only authorized and properly authenticated NHIEs are allowed to communicate with the Service Registry.[28]

- Write-access to the registry is rigorously controlled and confined to certificate authorities with special authorization. The process and policies by which entities will qualify for registration will need to be established and operationalized by Cal eConnect.

- Having an entry in the Entity Registry Service and/or using the service will be entirely voluntary. If entities are able to achieve the HIE they require in the absence of an entry in this service, they are not obligated to have one, as long they comply with State and federal privacy and security requirements. Also, entities may maintain entries in the Entity Registry Service and access the entries of other entities without being obligated to use any other Cooperative Shared HIE Services (such as the Provider Directory Service). However, legal entities are obligated to have an entry in the Entity Registry Service if they wish to use any other CS-HIE Services, because an entry is required for trusted authentication with respect to all Cooperative Shared HIE Services.

Technology:

Resources from the NHIN Architecture: The NHIN architecture does not include a discrete service that is identical to the Core Entity Registry Service described above. However, an analogous service exists in the form of the NHIE Service Registry specification.[29] This specification defines the capabilities and interfaces of a registry that maintain the information required for one NHIE to discover the existence of other NHIEs within the NHIN, and the associated information that enables one NHIE to establish a

[28] NHIE Service Registry, v1.1.
[29] "NHIE" = NHIN-enabled HIE, i.e. an HIE that is capable of discovering information in other NHIEs and exchanging information with these NHIEs. Note that "HIE" in this context is synonymous to "HIO" as defined in this document.

connection to another NHIE. Specifically, an NHIE Service Registry is intended to contain the following information about all NHIEs within the NHIN:

- The name of the NHIE,
- The unique network identifier (Home Community Identification [ID]) of the NHIE,
- A Uniform Resource Identifier (URI) where the public key of the NHIE x.509 security certificate can be accessed,
- A URI where the Web Services Description Language (WSDL) interface definitions for the NHIE can be accessed, and[30]
- Contact information for the NHIE's technical point of contact.

With this information, one NHIE can establish a secure connection to another (using its x.509 public key), locate and invoke the services of other NHIEs (based on the endpoints defined in the WSDLs), and uniquely identify and direct messages to other NHIEs.

The selected platform for the NHIE Service Registry is based on the Universal Description Discovery Interface (UDDI) version 3.0.2 specification.

NHIE Service Registries are similar to the Core Entity Registry Service described above in that they both represent certain identifying attributes of data trading partners and they both provide a means for accessing the public keys of trading partners for purposes of authentication.

However, there are also key differences between the Service Registry specified for the NHIN architecture and the Core Registry Service described above:

1. The NHIE Service Registry is intended to store information about HIEs (or HIOs). The Core Entity Registry Service is intended to store information about the various kinds of legal entities that may engage in HIE, such as physician practices hospitals, and immunization registries. Registered legal entities may participate in HIOs, but they are more granular organizations than HIOs themselves. It is possible that the specifications of the NHIE

[30] WSDL = Web Service Definition Language, a non-proprietary standard format for specifying the services provided by a web-services node (an HIE in this case), where and how to access these services, and the data formats in which information will be passed in service requests and responses.

Service Registry could be repurposed for this different task by expanding the concept of services to include the individual legal entities that participate in HIE transactions.

2. The NHIE Service Registry provides the address of a WSDL specification for the HIO, which describes the services that an HIO supports and where and how to access those services. The Core Registry Service does not reference such a WSDL. Instead, comparable information is represented in separate directory services that are hosted by the registered entity or by the Core Provider Directory Service, as described below. The Core Registry Service and Core Provider Directory Service could be consolidated into a single service, to more closely approximate an NHIE Service Registry. However, because only a subset of entities will choose to publish their providers' addressing information in the Provider Directory Service, it may make more sense to keep the Entity Registry Service and Provider Directory Service separate.

5.2.5 Provider Directory Service

The Provider Directory Service is intended to provide default information about where to direct transactions intended for specific principals to HIE transactions and how to formulate the transactions such that they can be correctly processed when received. Note that provider in this context denotes any principal to an HIE transaction, and is not confined to health care providers. Hence, entries may exist in the Provider Directory Service for physician practices, hospitals, hospital departments, laboratories, pharmacies, personal health records, immunization registries, payers and any other entities to whom health information could be legitimately sent or from whom health information could be requested. Each principal, however, must be associated with a legal entity registered in the Entity Registry Service. All legal entities will be subject to certain requirements, and the special status of services or repositories where there are no clear standards (e.g., untethered PHR applications) will have to be considered by Cal eConnect.

The Provider Directory Service allows registered legal entities to publish the address(es) at which their providers accept specific HIE transactions and the communication protocol(s) they support for these transaction. This information is available to any authorized counterparties who wish to conduct such transactions on an *ad hoc* basis, but would otherwise lack the addressing and protocol information to do so. For example, if a physician wishes to send a patient's key clinical information to a colleague at another organization, the Entity Registry Service would allow him to look up the electronic identity of the organization and the Provider Directory Service (if used by that entity) would inform his EHR as to

the network address to which the transaction should be addressed and the communication protocol(s) with which the transaction should be conducted (including protocols for transport, security, and data representation).

Entities may publish a registry of their providers in any manner that conforms to the standards of the State HIE Cooperative Agreement Program, and need not use the Provider Directory Service. This service is provided as a Core HIE Service for those entities that cannot or choose not to host their provider directory themselves (e.g., small practices).

The Provider Directory Service does not perform any of the network routing required to conduct HIE transactions – it only provides the network address to which the transaction should be directed (see below). Network routing is expected to be performed by other means, including the existing public internet routing infrastructure as well as the existing infrastructure of enterprises, HIOs, and other HIE services.

The Provider Directory Service will provide a database of directory entries that provide the following mappings:

Entity + Principal + Transaction Type => Network Address + Protocol

Where:

- **Entity** is the identifier of an entry in the Entity Registry Service. This will be a key attribute that supports lookups by specific entity.
- **Principal** is the identifier of a principal within the designated entity. Directory entries will include certain minimum attributes of these principals, such as name, mail and telephone contact information, secondary identifiers and professional role (if a person). These attributes support discovery of principals, and they will likely vary depending on the type of principal.
- **Transaction Type** is an element from a pre-defined set of transaction types. This set may include transactions such as Submit New Medication Prescription, Submit Laboratory Order, Send Laboratory Result, Send Encounter Summary, Request Patient Summary, Request Insurance Eligibility Information, etc. The set will be specified in the course of defining the Core HIE Services.
- **Network Address** is a URL, such as https://clinic.newport.com/inbox/DischargeSummary.

- **Protocol** is a designation of the protocol suite that can be processed for the indicated transaction at the indicated network address. The protocol suite, in turn, designates the combination of transport, security, and data-representation protocols that are recognized at the specified network address. For example, a protocol suite might designate Simple Object Access Protocol (SOAP) v1.1 over hypertext transfer protocol (HTTP) for transport, TLS, 2-factor authentication, and the Security Assertion Markup Language (SAML) Token Profile v1.1 for user authentication, and the HL7 CCD for data representation. Multiple entries for a single combination of entity, principal and transaction type could specify alternative addresses and/or protocol suites that may be used for a transaction.

The Provider Directory Service will have the following operational policies:

- For principals that are part of a larger enterprise or participate in an HIO, the network address in some or all of their directory entries may be that of their enterprise or HIO. The enterprise or HIO is then responsible for routing the transaction to the intended providers (for example, see Enterprise-A and Principal-4 in Figure 3).[31] This enables large enterprises and HIOs to manage the routing of traffic within their spheres to reach the final recipient, rather than having to maintain entries in the Provider Directory Service for all of the physicians, departments and applications that they represent.

- Information in the Provider Directory Service must be secure because it represents a trusted binding between a principal and the address to which transactions intended for that principal are directed. Hence, access control for modifying directory entries needs to be rigorous. If the addressing information were compromised, for example, a physician might send a message intended for another physician to an unintended and unauthorized third-party. Also, read-access to the directory service should require authentication via legal entities' Entity Registry Service entry, so that entities will feel confident publishing their provider directory information in the directory service without undue risk of spoofing, denial of service attacks and other malicious behavior.

- If a principal has an entry in the Provider Directory Service for a specific transaction type, then the principal must be have at least one entry for the transaction type that conforms to a designated set of communication protocols conformant with the CS-HIE Services standards (see Section 5.2.3). In other words, principals must support at least the designated standard communication protocol for all transaction types that they publish in the Provider Directory Service. At the same time, providers (and their entities) may support other, non-standard communication protocols for the same transaction types. Note: the same policy applies when legal entities host their own provider directories, although

[31] Note that delivery, in this case, will require that the identity of the intended recipient (principal) is included with the transmitted message.

any transactions that they conduct privately (i.e. not using the CS-HIE Services) need not support the designated standard communication protocols.

The rationale for this policy is so that counterparties can count on principals supporting at least the designated standard communication protocol for the transactions they publish via the Provider Directory Service. Counterparties are not obligated to use the designated standard communication protocols, but principals are required to offer it if they offer any protocols for that transaction.

Having entries in the Provider Directory Service or using information from the Service for HIE transactions is entirely voluntary. Entities may choose to host their own provider directories or use the hosting services of a third-party for their provider directories. However, every legal entity within an entry in the Entity Registry Service must make its provider directory accessible as a web service that is compatible with the interface specifications of the Provider Directory Service. Organizations may choose to acquire information about the network addresses and communication protocols that counterparties support for various transaction types in any manner they wish, including via direct agreements with their data trading partners or via referencing a separate third-party resources (such as an HIO). Even if providers publish directory entries for certain transaction types in the Provider Directory Service, they may accept instances of those transactions at different network addresses and/or via different communication protocols than those designated in the published entries. Lastly, providers need not publish in the Provider Directory Service all the addresses and/or communication protocols at which the will process transactions, but they must support the addresses and communication protocols that they do publish.

The Provider Directory Service will use the following technology and specifications:

- *Resources from the NHIN Architecture*: The NHIE Service Registry specification (referenced in Section 5.3.1) specifies that the registry be represented as a UDDI service catalog and that entries in the registry be represented per the UDDI data model.[32] The data model for each entry consists of the following XML objects:

- *BusinessEntity*: Information about the business or organization providing the services; each BusinessEntity may contain 0 to many instances of a BusinessService

- *BusinessService*: Descriptive information about each of the services that the business entity provides; each BusinessService may contain 0 to many instances of a BindingTemplate

[32] UDDI is an XML-based registry for businesses worldwide to list themselves on the Internet.

- *BindingTemplate*: Technical information about the service entry point and implementation specifications for a service; each BindingTemplate may reference 0 to many instances of a tModel
- *tModel*: The detailed technical specifications of the service interface, such as details of the SOAP protocol used, security specifications, and data representations.

These objects are analogous to the components of Directory Service entries, as specified above. In particular, the following correspondences exist:

- *BusinessEntity* => Entity + Principal
- *BusinessService* => Transaction
- *BindingTemplate* => Network Address
- *tModel* => Protocol Suite

If the Entity Registry Service and Provider Directory Service were combined into a single service, the UDDI model and the interface specifications of the NHIE Service Registry may be appropriate for representing the directory entries as specified above. Further evaluation of the UDDI data model, the NHIE Service Registry specification, and the requirements of the Entity Registry Service and Provider Directory Service as described above is required. If the NHIN specifications do not prove suitable for the functionality needed in the Directory Service, different technical standards also exist for directory services and will be considered.

5.2.6 Provider Identity Service

The Provider Identity Service is intended to provide a widely trusted mechanism for provisioning and authenticating providers involved in HIE transactions (again, providers in this context refer to principals as defined in Appendix 16, i.e., individual health care providers, health care administrative staff or HIT. applications that engage in HIE transactions). Although many legal entities may be trusted by their counterparties to provision and authenticate principals themselves, other entities (particularly smaller ones) may not be trusted by their counterparties and may require a trusted third-party identity service. The Core HIE Provider Identity Service is intended to fill this role. Note that whatever legal entity represents the data participants (i.e., the principals) would have to maintain the identification and authentication methods.

The Core HIE Provider Identity Service will be responsible for maintaining the required information to authenticate principals registered with the service, reliably performing the authentication step, generating the necessary software or hardware solution (s) to assert a successful authentication, and making these software or hardware solutions available in a secure manner to the authenticated principals and/or the principals' counter-parties in transactions.

These authentication assertions will include the principal's key information from the Provider Identity Service, including unique identifier, identifying attributes and public key. The assertions will also contain information about the authentication event, including the authentication method (e.g., password, two-factor). The assertion will serve as a trusted binding between a person or application that is seeking access to health information and the identity of a principal as maintained in the Provider Identity Service.

Authentication assertions generated by the Provider Identity Service may be used to authenticate end users for front channel HIE transactions (such as web-browser-based interactions with an immunization registry) or they may be used to authenticate enterprises or information systems for back channel transactions (such as the transmission of a clinical summary from one EHR to another).

The Provider Identity Service may support multiple methods of authentication, including weak methods (password only) and strong methods (two-factor authentication involving software or hardware solution, physical hardware solutions and/or biometrics). The Authentication Service itself will not require any specific level or technique of authentication for any specific transaction type. It will be up to the access-control policies of data-trading partners to accept or reject the authentication method used for a requested transaction. Note that transactions may also contain separate *authorization assertions* that indicate the role of the principal seeking access with respect to the patient and the reason for the requested access (see Authorization in Section 5.1.2).

5.2.6.1 Operational Policies

Write-access to the Provider Identity Service will be very rigorously controlled. Specifically, only organizations (*certificate authorities*) that are certified by Cal eConnect to provision and credential providers will be entitled to update the information in the Provider Identity Service.

To ensure the maximum degree of trust, management and operations of the Provider Identity Service will be assigned by Cal eConnect to a specially designated and certified organization. The organization(s) will be entrusted with, responsible for, and certified to perform the provisioning, credentialing, and

authentication of principals in a secure and rigorous manner. The organization(s) may be non-profit, for-profit or government entities.

Authenticating via the Provider Identity Service for purposes of HIE is entirely voluntary. Authentication for HIE transactions may be performed directly by the entities involved in the transactions, if both parties to the transactions honor that method of authentication.

California HIE services will be built to align with NHIN wherever possible. The NHIN architecture does not include services or specifications for performing authentication, *per se*. It does, however, include in its Messaging Platform Specifications the SAML Token Profile v1.1 (based on SAML v2.0). This profile may be used to standardize the representation of the authentication assertions generated by the Provider Identity Service and accepted by counterparties to HIE transactions.

5.2.7 Support for Other Core Functions

The proposed HIE services currently include no service for performing or facilitating the authorization of HIE transactions. This is for two reasons. Firstly, it is assumed that many counterparties to HIE transactions will trust no other entity to make access-control decisions. Organizations are typically conservative with respect to the electronic disclosure of PHI and even the acceptance of health information from other enterprises. Secondly, any centralized patient-consent database would require a registry of patient identities, which may not be politically feasible in the near-term.

TAC and TWG propose to support authorization decisions by specifying use of standard SAML attribute assertions within transactions that use HIE Services, and use the standardized codes for **user role** and **purpose for use** as specified in the NHIN Authorization Framework.[33] This level of standardization will enable entities to better make access-control decisions when the only information they have about the counterparty to an HIE transaction is derived from the Entity Registry Service and the transaction itself.

Logging of transactions has been suggested as an additional core HIE Service. In this architecture, however, logging of all interactions with the Core HIE services (e.g., registry lookup, directory update and provider authentication) will be performed by logging modules of these services themselves, rather than by a separate logging service. While this will likely be easier to implement than a separate logging service, it may make it more difficult to provide auditing of such interactions as a core service in the near-term. It is not yet clear how important it will be to provide an auditing service for interactions with the core HIE services.

[33] NHIN Authorization Framework Service Interface Specification v2.2.

Logging of actual HIE transactions enabled by the core HIE services, including laboratory result delivery, request for key patient information and eligibility check, will be performed by the service end points involved in HIE transactions, rather than by any component of the Core HIE infrastructure.

Protocol translation has been suggested as an additional core HIE service. It remains to be determined whether it is feasible for protocol translation to occur centrally, or whether the sending and receiving systems should perform protocol translation before sending and/or after receiving transactions.

5.2.8 Non-Core HIE Services

In addition to the core services described above, enabling HIE needed to achieve meaningful use and other health policy goals may require additional services to be provided under the State HIE Cooperative Agreement Program. These services would provide specific functions needed for HIE that are not otherwise available to eligible providers and/or to the counterparties with whom they need to exchange health information. These services would be layered on top of the core HIE services on an as-needed basis over time.

One specific non-core CS-HIE service is planned at this time:

- A centralized clearinghouse for routing laboratory results to the appropriate ordering providers and public health agencies. This service would ostensibly replace the numerous point-to-point connections among laboratories, EHRs and public health databases with a single routing hub connected to participating entities.

A number of other non-core CS-HIE services are also under consideration, although further evaluation of the technical feasibility of and business case for these services is required:

- An NHIN gateway for provider organizations that are not part of enterprises, HIOs or other provider aggregations that have their own NHIN gateways;

- A trusted consumer registry (or registries) that may be used as the basis for federated identity management, authentication and authorization involving consumer identities and their attributes;

- Expanded functionality for the laboratory-routing clearinghouse, to include a decision-support component able to automatically determine which test results can and/or must be transmitted electronically to which providers/patients/agencies per California statutes and regulations; a component to transform laboratory result messages to conform to the format, coding, and transport

requirements of the receiving EHR or public health agency; and a component to route and transform laboratory *orders* as well as results;

- A central access point for EHRs and practice management systems to retrieve insurance eligibility information via EDI transactions across various payers in California. This service would facilitate electronic eligibility checking and the fulfillment of the corresponding meaningful use criteria for the users and vendors of EHR systems, suggesting a revenue model for sustainability. In concert, the same access point may be used to enable web-based access to eligibility information for those eligible providers as yet unable to take advantage of EDI transactions (primarily small physician practices). The California governance entity will work with the Integrated Healthcare Association, CHCF and other interested stakeholders to further investigate the value and feasibility of such a service;

- A patient-identity service that assists the recipients of exchanged health information (including intermediaries, such as HIOs) to associate the information with the correct patient health record. The service will help in the reconciliation of identifying attributes of patients, such as name, date of birth (DOB), local medical record number and health plan identifier, when these attributes vary across health record systems;

- A centralized clearinghouse for routing and transforming clinical summary documents among providers and patient-designated entities. This service would be analogous to the laboratory-routing clearinghouse, and would enable organizations that may lack standards-compliant EHR systems to also exchange clinical summary data;

- A widespread secure-messaging system to enable patients and providers to communicate electronically. This service would include directory services and provide the requisite levels of authentication and encryption. Although various vendors provide secure messaging for patient-provider communications today, these capabilities are not yet widely available to patients, nor interoperable across vendors; and

- A statewide appointment-scheduling system to facilitate and track the scheduling of primary-care appointments and specialist referrals. Such a system could improve the efficiency of referral processes, as well as enable the measurement of wait-times for medical appointments.

As envisioned for the HIE architecture, non-core HIE services would be accessible to any principal, enterprise, or existing HIE service that could benefit from them. However, their use would be entirely optional, even for entities that otherwise use the core HIE services for authentication and other functions.

For example, an HIO that did not have its own NHIN gateway could route NHIN transactions through the HIE gateway, whereas another HIO could operate its own NHIN gateway and only use the core HIE services to authenticate users of that gateway.

Use of non-core HIE services, however, would require at least an entry in the Entity Registry Service of the core CS-HIE layer.

5.2.9 Protocol Standards for Cooperative Shared HIE Services

Core and non-core HIE services will be based on and accessible through a set of specific standards for HIE transactions. The specification of a small set of standards is necessary to enable the HIE services to support HIE across principals and enterprises whose information systems today use a large variety of mechanisms for transport, security, and data representation. Principals and enterprises in California are not required to use the standards below for all of their HIE transactions, only those involving the core and non-core HIE services.

5.2.10 Standards for Core HIE Services

Entities wishing to use the Core HIE services must interact with these services using the transport and security standards specified below.

- *Transport Standards*: SOAP v1.2 and RESTful communications protocols as specified in the NPRM.
- *Security Standards*: will be taken from the NHIN specifications and include SAML Token Profile v1.1 for authentication assertions; SAML Token Profile v1.1 for attribute assertions, and SNOMED-CT Code Sets for **User Role** and NHIN Code set for **Purpose for Use**.[34] The NHIN codeset is the coding system that will be required by 2013. It is the ICD-10 CM and Procedural Classification System – coding used for procedures and surgeries for clinical and billing use. Note, SNOMED is not currently in use now.
    - *Digital certificates*: X.509 Profile v1.0
    - Transport-level authentication and encryption: TLS v1.0

[34] SNOMED CT (Systematized Nomenclature of Medicine – Clinical Terms), is a systematically organized computer processable collection of medical terminology covering most areas of clinical information such as diseases, findings, procedures, microorganisms, pharmaceuticals etc. It allows a consistent way to index, store, retrieve, and aggregate clinical data across specialties and sites of care. It also helps organizing the content of medical records, reducing the variability in the way data is captured, encoded and used for clinical care of patients and research.

- *Registry and Directory Service standards*: UDDI v.3.0.2, pending evaluation.

5.2.11 Standards for Other HIE Services

When using non-core HIE services for HIE transactions, entities must interact with these services using the standards below, based on the transaction type. Also, as specified in the operational policies of Section 5.2.6.1, the transport, security and information-payload standards specified below must be *offered* for every transaction that a principal publishes in the Provider Directory Service or in an alternative directory service hosted elsewhere. However, the only requirement is that trading partner must support each specification for which it registers. Any given trading partner may support many different payload specifications and protocols.

The reason for this requirement is to specify a well-defined service bus for transactions that use HIE services, so that these services can be implemented and supported efficiently and need not support the many transport, security, and data standards that are in current use for HIE across the California health care system. The specification does not, however, obligate the participants in HIE transactions to use these standards if they use no core or non-Core HIE services for HIE. For example, if a reference laboratory and EHR already used a non-standard format for exchanging laboratory results, they could continue to do so. However, if users of the EHR published one or more entries in the Provider Directory Service for receiving laboratory results, at least one of the entries would need to specify the standard protocol for those transactions. The proposed standard protocols are the transport and security standards specified above for the Core HIE services, plus health information payload standards, by transaction type, as detailed in the table below.

Table 5. Health Information Payload Standards by Transaction Type

Transmit Electronic Prescription =>	SCRIPT 8.1, with any medication terminology that is mapped to RxNorm in UMLS
Transmit Electronic Laboratory Result to EHR =>	HL7 v2.5.1: ELINCS, HITSP C36,
Check Insurance Eligibility =>	ANSI X12 270/271 compliant with CAQH CORE Rules, Phase 1
Submit Insurance Claim =>	ANSI X12 837 compliant with CAQH CORE Rules, Phase 1
Provide Patients with Health Information =>	HL7 CCD Level 2, based on HL7 CDA R2 *or* ASTM E2369 CCR
Provide Summary-of-Care Record =>	HL7 CCD Level 2, based on HL7 CDA R2

	or ASTM E2369 CCR
Submit to Immunization Registry =>	HL7 2.3.1 or HL7 2.5.1, HL7 CVX Code Set
Submit Laboratory Result to Public Health =>	HL7 v2.5.1 LOINC codes must be used
Submit Syndromic Data to Public Health =>	HL7 v2.3.1 or HL7 v2.5.1

5.2.11.1 Integration of HIE Resources

Please refer to Figure 3 in Section 5.2.2 for a graphical representation of the relationships described below.

5.2.11.2 Integration of Core and Non-Core Services

Non-Core HIE services will use elements of the Core services to the extent needed. At a minimum, non-core services will leverage the Entity Registry Service to authenticate the legal entities and the principals that wish to access non-core services. For example, one potential non-core service is a centralized gateway for accessing insurance eligibility information across multiple payers (see Section 4.2.1.4). Access to the gateway may only granted for requests originating from health network nodes registered in the Entity Registry Service and made by users and applications authenticated by legal entities registered in the Entity Registry Service.

5.2.11.3 Integration of HIE Services with Private Sector

Regional HIOs may use certain of the Core HIE services to facilitate various HIE services they provide to local stakeholders. For example, a regional HIO that provides a service for standardizing the format of laboratory results and routing results to the appropriate recipients could leverage the Provider Directory Service to store the addresses and supported reporting formats for various laboratories and physician practices within its region. The regional HIO could also leverage the Entity Registry Service to authenticate legal entities from outside its region that send laboratory results to providers within the region, thereby providing a gateway for other regional HIOs to send laboratory results to local providers.

An e-prescribing network can leverage the Entity Registry Service to streamline its own processes for provisioning and authenticating the physician practices in their network. A physician practice that has an existing Entity Registry Service entry but is not yet part of the e-prescribing network could begin using the network more quickly if its entry in the Entity Registry Service were honored by the network. Similarly, the e-prescribing network could leverage the contents of the Provider Directory Service to

correctly route renewal requests to ordering providers or new prescriptions to pharmacies that may currently be outside its network.

5.2.11.4 State and Local Governments

With respect to the architecture depicted in Figure 3, the administrative systems and clinical data registries operated by State and local governments comprise *Enterprises* that need to exchange information with each other and with enterprises in the private sector for purposes of collecting or disseminating patient-specific health information. Examples of such enterprises include DHCS (and its MMIS systems), and the State and local departments of public health (and their various registries). Several examples are provided below.

MMIS: The MMIS may interact with HIE Services in at least two ways:

1. MMIS may leverage the Entity Registry Service and (possibly) the Provider Identity Service to authenticate and authorize requests from providers for administrative information, such as eligibility and benefits information for Medi-Cal beneficiaries. In this mode, requests to MMIS would include authentication and authorization assertions signed by legal entities registered in the Entity Registry Service. If MMIS trusted the legal entities thus registered, this trust would obviate the need for MMIS to maintain its own registry of providers authorized to access to MMIS (e.g., include their passwords) and to perform the authentication itself. These functions could be delegated to the trusted legal entities.

2. MMIS may leverage the Entity Registry Service and Provider Directory Service to request access to clinical information from providers, such as medication lists or laboratory results for Medi-Cal beneficiaries. In this mode, MMIS would, itself, be a registered legal entity in the Entity Registry Service. An MMIS user would locate the provider of interest in the Provider Directory Service and submit a request to retrieve clinical information for a specific Medi-Cal beneficiary (identified by name, DOB and Client ID, for example). The contacted provider would authenticate the request using MMIS's entry in the Entity Registry Service. The information would be sent back over a secure channel, as both the MMIS system and the provider's EHR are health network nodes also registered in the Entity Registry Service.

Immunization Registries: Immunization registries could use the Core HIE services when authenticating requests from providers to submit or retrieve immunization records. This process would be very similar to case #1 described above for MMIS. The immunization registry could leverage the trust infrastructure

established by the Entity Registry Service supplement or replace its own registry of users (for a more detailed description of this process, see Section 5.2.4).

Public Health Databases: Public health databases used to monitor reportable diseases could also use the Core HIE services when authenticating requests from providers to submit data (including laboratory results and syndromic findings) and from public health agencies to access the data.

Quality Reporting Programs: California's Office of Statewide Health Planning and Development (OSHPD) collects over 16 million patient records annually from hospitals and licensed ambulatory surgery clinics. The data are used by OSHPD to measure quality of care as well as service utilization and cost and are provided to researchers under strict control. Facilities report these data by uploading files via an Internet web page. Data are then subject to editing and correction. These data reporting activities could potentially use Core CS-HIE Services to transmit data. As noted in section 1.6, the capacity to have this reporting accomplished automatically will result in decreased workload for providers, and allow OSHPD and other public health agencies to shift from the business of collecting data to analyzing data and providing aggregate results back to providers and others in a timely fashion.

5.2.12 Alignment with NHIN and NHIN Direct

California will continue to track and align where appropriate with national interoperability initiatives. David Lansky, co-chair of Cal eConnect's Board of Director's is a member of the National Health IT Policy Committee and co-chair of the Committee's NHIN workgroup. The Deputy Secretary, Health IT serves is also a member of that workgroup and California is a founding member of the NHIN Direct Implementation Work Group. Through these and other interactions California seeks to advance both the goals of NHIN while building internal infrastructure so the we may take full advantage of the NHIN lessons and move the industry toward ubiquitous, safe and secure movement of health information.

The architecture itself has been designed to complement the current capabilities of the NHIN and support a service-oriented approach to interoperability. In addition, California's proposed architecture will instantiate a provider identification service that may be incorporated into the NHIN services framework.

5.3 Necessary Policy Support and Participation Rules

The following policies are proposed for potential users of HIE Services:

- *Net Neutrality*: If an entity publishes a provider directory (either itself or via the Provider Directory Service) for a specific type of transaction, the entity must support transactions of that type originating

from any other entity that has valid access to the provider directory (subject to the authentication and access-control policies of the principals). The network infrastructures of principals may not limit access or give preferential treatment to traffic based on the source of the traffic.

- *Minimum Participation*: Every entity that wishes to use the HIE services for any purpose must have (at a minimum) a validated entry in the Entity Registry Service and must publish a provider directory that is compliant with the standards of the State HIE Cooperative Agreement Program.

- *Optionality*: The use of HIE Services (core or otherwise) is entirely optional for any entity, enterprise or other HIE service. However, if an entity chooses to use the CS-HIE services, then it would be subject to certain rules and obligations, which are to be defined.

- *Transaction Independence*: An entity, enterprise or HIE service may use the HIE services (core or otherwise) for any supported transaction without being obligated to use HIE services for any other transaction (with the exception of having an entry in the core Entity Registry Service, which is required to for an entity to access any of the HIE services).

5.3.1 The role of DURSA(s)

The Nationwide Health Information Network created "Data Use and Reciprocal Support Agreement" (DURSA) is a comprehensive, multi-party trust agreement that will be signed by all NHIEs both public and private, wishing to participate in the NHIN. The DURSA provides the legal framework governing participation in the NHIN by requiring the signatories to abide by a common set of terms and conditions for the purpose of exchanging health information. These common terms and conditions support the secure, interoperable exchange of health data between and among numerous NHIEs across the country and avoids the need for each NHIE to enter into "point-to-point" agreements with each other NHIE, which becomes exceedingly difficult, costly and inefficient as the number of NHIEs increases.[35]

The DURSA is a voluntary model document which at this time does not override California's existing privacy laws or regulations that a State may develop in its judgment to protect privacy during exchange of information. The GE and CalPSAB are responsible for determining the utility of the DURSA for California HIE. It is expected that California will use the DURSA as the framework for data use

[35] Draft Data Use and Reciprocal Support Agreement developed by the NHIN Cooperative DURSA Team, November 18, 2009, http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_11673_910332_0_0_18/DURSA_2009_VersionforProductionPilots_20091123.pdf.

agreements between entities in California. It will be appended to make it specific to California laws, regulations and the HIE Privacy and Security Guidelines.

6. Business and Technical Operations

6.1 Shared Services

It is proposed that TWG and TAC will identify priority services and advise Cal eConnect on recommendations for how services should be developed and made operational. Cal eConnect will have the authority to decide how services are developed and authority over the procurement process. As the first step in the procurement process, Cal eConnect will discuss developing the services using existing resources at the state level or the State procuring the services from an existing or new vendor.

As an example of this coordinated process, TAC would identify a list of business requirements to TWG. These requirements would be developed in the workgroup using a matrix tool which would allow the group members to expand on the requirements needed for three prioritized core services: laboratory data exchange, eligibility processing and clinical summaries of care encounters.[36] After ratification by the group, the requirements would be sent to TWG for revision and approval, and then sent to Cal eConnect for consideration, approval and procurement.

It is anticipated that the technical services may be developed over time and according to standards and certification criteria adopted by the US Department of Health and Human Services HHS in effort to develop capacity for nationwide HIE.

6.1.1 Cal eConnect Managed and Supported Data and Services

Cal eConnect will address the following most immediate needs from April through June 2010: selecting a Board of Directors and appointing the management team, defining an approach, principles and goals for an open procurement and grant-making process, developing requirements and preparing RFPs, and determining policies and procedures for day-to-day operations.

In the mid-term time frame (defined as the procurement and operations phase, roughly the first year of HIE deployment), Cal eConnect will address selection and build of specific data and services based on recommendations from TAC, and will identify services needed for supporting HIE services. Cal eConnect will determine the requirements for the procurement process, selection criteria, and policies and procedures, including remediation for contract violations or unmet milestones.

[36] See Appendix 15 for the Business Requirements Matrix.

In the long-term (defined as over the development and implementation of the HIE services), Cal eConnect will manage compliance with contractual obligations, perform evaluation functions in partnership with the selected Evaluator, and manage remediation for unmet milestones or contractual violations.

Cal eConnect will adhere to the following process:

- Identify needs for services and specific characteristics and features to ensure successful implementation, harmonization with stakeholder needs, and fit with other services and infrastructure of the HIE services,
- Determine operational requirements,
- Initiate and manage a procurement process through selection of final service provider, and
- After services are procured, manage compliance with contractual obligations and ensure adherence to all State policies, including privacy and security guidance issues by other State entities.

6.1.2 State Managed and Supported Services

The State will continue to manage information systems related to MMIS and public health programs, and will coordinate requisite interfaces with the HIE.

6.2 Standard Operating Procedures for HIE

Cal eConnect will develop SOPs for its core services, which will be referenced in all contractual and participatory agreements between Cal eConnect and participants in HIE.

As part of developing these SOPs, Cal eConnect will provide technical assistance, as needed, to HIOs and other entities involved in developing HIE capacity in California. Cal eConnect's approach will be to provide both direct technical assistance via policies, procedures and facilitation of access to expert resources; and to collaborate with CalHIPSO and other RECs (if approved) in the state to maximize the amount of technical support provided. In some cases, grants will be made available to HIOs should they meet requirements defined in Cal eConnect RFP opportunities and be selected through an open process.

6.3 Continuous Improvement

Cal eConnect will provide continuous monitoring of activities, and resolution of issues. Cal eConnect will provide a feedback loop for interests and concerns of stakeholders, and is responsible for making necessary changes and revisions to the Standard Operating Procedures as necessary.

7. Patient and Consumer Engagement with HIE

7.1 Engaging Patients, Their Families, Consumers of Health Care, and Other Stakeholders in HIE

Throughout the operational planning process, stakeholders addressed the need for defined approaches to the individual participants in HIE, in addition to a design and implementation plans for the technical, business and financial infrastructure. The primary groups charged with developing the approach to individual participants in HIE were the Patient Engagement Workgroup, and the Vulnerable and Underserved Workgroup, both open to the public. The workgroups were convened weekly by the workgroup tri-chairs during the operational planning process, drafted and provided content to the Operational Plan, and reviewed and commented on the Plan as a whole.

The Vulnerable and Underserved Workgroup focused on the needs of both specific populations of patients and their families, and as well as the issues and concerns of medical providers, health professionals, clinics, State agencies and public programs that provide their care. These needs, issues and concerns should be considered as the business drivers or rules that will shape the privacy and security controls inherent to HIE services. Meanwhile, the Patient Engagement Workgroup focused on principles and strategies for engaging patients, families, and those involved in their care (collectively the consumers of health services) in HIE, and laid the groundwork for the role of statewide HIE services in supporting patients' active and accountable roles in their own health and health care.

Together, the workgroups clearly articulated the need for inclusion of patient and family representatives to ensure that HIE efforts and results meet their needs, as well as the potential for them to play a change agent role to advance the true value of HIE. The workgroups presented a comprehensive picture of how State HIE services can serve the needs of all individual HIE participants, both recipients and providers of services, working together to improve health for all California residents. Extensive deliberations in the Patient Engagement Workgroup revealed a need to clarify use of the terms **patients and families** and **consumers**. This need reflects agreement that the terms are not, and should not be considered, synonymous. Knowing that terms used in HIE and HIT are evolving as policy develops, the Patient Engagement Workgroup agreed to adopt the Consumer Partnership for eHealth's definition from their Aligning Forces for Quality Initiative for purposes of operational planning for HIE:

- Individual Consumer: A consumer is an individual who has significant personal experience with the health care system, either as a patient or caregiver. A consumer draws upon these experiences to enrich HIE.

For the purposes of the Operational Plan, the Patient Engagement Workgroup recognizes that meaningful use formally refers to Patient and Family Engagement and respects the use of these terms with the following assumed definitions:

- Patient: any consumer known to health service providers because care has been provided or planned.
- Family: person(s) designated by a consumer as their personal representative to be entitled to access the consumer's EHRs through HIE. In the case of a minor, persons deemed by the State to be responsible for that individual.

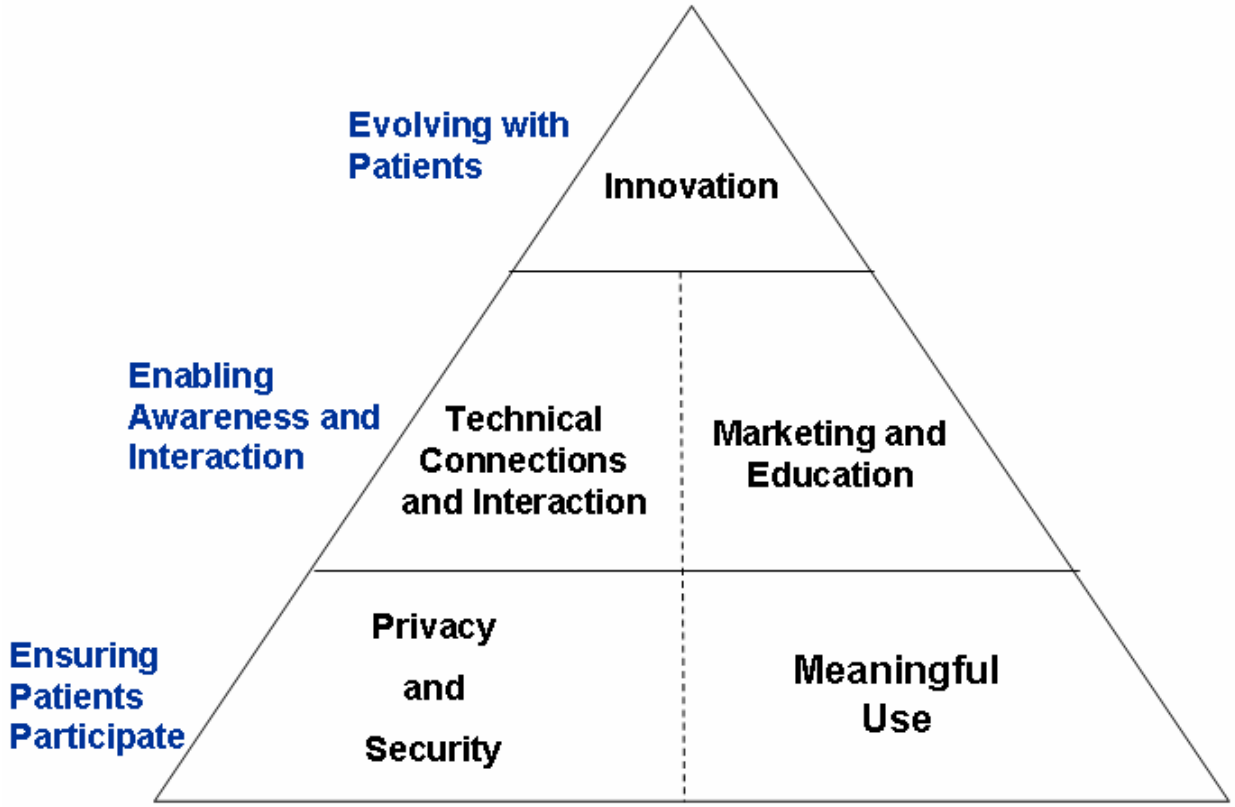
This usage distinguishes those known to the health service delivery system from those not yet known, except perhaps to payers who insure them.

The Patient Engagement Workgroup developed its contributions with two guiding assumptions in mind:

1. None of the health goals implicit in meaningful use can be achieved without the participation and support of patients and consumers, and
2. Without patient participation in HIE, there is significantly limited financial and health outcome value.

To that end, the Patient Engagement Workgroup developed a model for conceptualizing the role of patients in HIE to inform both short-term and long-term requirements to drive patient and consumer participation. This model is predicated on patient and consumer involvement in the development, decision-making and evolution of HIE, as there is great value in engaging consumers and patients and most individual consumers lack the ability to influence and communicate with a large network or constituency. This model recommends requirements for ensuring that patients participate, enabling interaction with and awareness among patients and evolving with patients as technology-enabled care interactions mature.

Figure 4. Illustration of Patient Engagement's Role in HIE



1. *Ensuring Patients Participate*: In order to ensure patients participate, the bare minimum requirements include a sufficient privacy and security foundation and functionality that engender maximum trust in the system and allow for the most valuable interaction possible for the patient. Ensure that HIE supports communication and feedback cycles to further enable trust in the accuracy of information. In addition, as part of enabling meaningful use for providers, the HIE will need to make data available in a patient-centric manner that allows providers to fulfill patient engagement requirements, which is essential to developing the on-ramp for patient engagement.

2. *Enabling Interaction and Awareness*: To actually enable patients to engage, HIE should consider patients as information participants, not just recipients, but activate patients who contribute information, create knowledge and share in decision making.[37] To do so, it will be critical for HIE to enable technical connections and interactions that make patient data

[37] The Markle Foundation submitted comments supporting the concept of the activated patient to the Notice of Proposed Rulemaking for Meaningful Use of Electronic Health Records on March 15, 2010. Those comments can be found here: www.markle.org/downloadable_assets/20100315_ehrincent_cms0033p.pdf

available through a wide variety of applications and services of the patient's choosing, as the workgroup believes that having flexibility to participate in a way tailored to their situation will result in greater engagement. Equally important is building awareness among patients and consumers. For traditional marketing and communications channels to be effective, it will be critical for patients to understand how to participate in their health and the role HIE can play to support them. HIE should consider approaches that allow patients to see HIE as part of a more significant opportunity that can provide value in ways that are relevant to them, such as decreased time spent refilling a prescription or improved ability to manage a comprehensive view of health care information for themselves or their dependents.

3. *Evolving with Patients*: HIE has the potential to dramatically shift the paradigm of how patients engage in not only their health care, but in their overall health, thus realizing the health outcome and financial benefits of wellness and prevention. While HIE can provide basic building blocks toward this vision, HIE must be open to innovation that will occur in data and information flow to support the patient. Ten years ago, most would not have imagined the power of the smart phone in changing the way consumers view information access. HIE should be the foundation that allows patients to see their health and health care in a new light and advance their ability to be accountable for and drive improvement in their own care.

7.1.1 Patient Engagement Principles, Strategies and Tactics

Building on the model above, the Patient Engagement Workgroup developed a set of principles, as laid out in the workgroup's charter (see Appendix 9), detailing why engaging with consumers is critical to meaningful HIE services, identifying strategies for what to do to effectively engage with consumers; and lastly, suggesting some tactics that describe how these strategies will be deployed.

The Patient Engagement Workgroup acknowledges that not all of these tactics will be included in the first iteration of HIE deployment, but they provide a set of guiding principles and innovations to Cal eConnect to guide the evolution of HIE over time in a consumer-focused manner.

Table 6. Patient Engagement Workgroup Principles, Strategies and Tactics

Principles	Strategies	Tactics
1. Earn the trust of the health information exchange users.	• Empower consumers to make decisions about how, when, and with whom their PHI is shared (or not shared.) • Empower consumers with a transparent view and clear understanding of all elements of personal health information available. • Allow consumers to add to and identify inaccuracies in their information.	• Leavitt label: an easy-to-read, standard notice about how patients' PHI is protected. • Provide HIE participation with mechanisms that are informative and easy to understand, with a defined process for non-participating consumers. • Ensure that no data from the HIE will be used or sold to third-party vendors, in identifiable or de-identifiable state, without explicit consent of the consumer. • Allow consumers to define and specifically authorize providers, provider networks and vendors to access and share data on a specific data type, data element or transaction level. • Ensure consumers receive timely notification of access upon request and notification of data breach or compromise. • Upon request, receive notification of updates to personal or family data. • Provide immediate, online portal access to all data available via HIE to the consumer, with intuitive site navigation. • Enable consumers to upload their own personal health activities and events into HIE for exchange with their providers, making HIE a platform for two-way exchange and not solely dependent on providers, but available to them at the consumer's request.
2. Fully engage patients in HIE services.	• Use varied opportunities to connect with the consumer, beyond traditional health care settings or office encounters, meeting them where they are to ensure participation. • Create opportunities for consumer representation throughout the state. • Raise awareness of HIE services and their benefit.	• Establish and measure consumer use of the HIE, creating targets for engagement. • Establish consumer representation on Cal eConnect Board. • Establish Consumer Advisory Council to reach out to consumers, give consumers a voice and gather input. • Establish brand for HIE that is expressed throughout the state in consumer-friendly communications. • Develop consumer education materials that are available online or in printed form so that education is not dependent on internet access. • Leverage broadest channels for consumer adoption, including segmentation of population for different messaging, if needed.

Principles	Strategies	Tactics
		• Provide education and outreach in provider settings, community centers; enable community service centers with computer access for participants. • Conduct population testing and validation with HIE implementation efforts for base and extended services that are offered, including in usability, prototyping, pilot and quality assurance efforts. • Enable patients to add their own information to PHRs, adding more observations about actions performed on their own behalf, for example taking medications prescribed to them by a provider. Enable this information to be exchanged in clinically acceptable ways, when appropriate (e.g. history of medications).
3. Enable PHRs and other tools to facilitate health management and advance consumer empowerment toward improved health outcomes.	• Engage each consumer as information participants who contribute information, create knowledge, and share in decision-making. • Enable consumers to choose products and services that best fit their health needs, technical capacity, and cultural preferences.	• Enable technical connections and interactions that make patient data available through a wide variety of applications and services of the patient's choosing. • Enable patient and provider to choose preferred communication channel for specific communications such as appointment reminders, including text messaging.
4. Support innovation, leveraging the HIE infrastructure.	• Enable consumers to see their health and health care in a new light to advance their ability to drive improvement in their own care. • Enable innovators to see value-added service opportunities.	• Establish a common data framework and standards that vendors can leverage to meet the needs of the consumers in HIE. • Engage innovators to develop HIE services and tools used to empower consumers. • Create a consumer adoption laboratory to test new consumer health engagement tools across HIE participants. • Ensure consumer-driven requirements inform other relevant national efforts such as NHIN Direct.

While there remains work to design an implementation plan for these strategies, the Patient Engagement Workgroup explored various levels of depth in a few key areas below.

7.2 Communications Plan Approach

A subcommittee of the Patient Engagement Workgroup, the Communications Subcommittee, contributed a Communication Plan to the Operational Plan. The Communication Plan, which details objectives for communicating with consumers about HIE, is intended to create a framework that will include recommended staffing and funding for the plan.

The Communications subcommittee outlined the following Communications Plan objectives that are tied directly to the meaningful use criteria for Patient Engagement:

- Raise consumer and family awareness and to educate and gain their trust in HIE services and motivate use of online tools.

- Engage consumers by making HIE relevant and valuable to their personal choices and interaction with health care.

- Assure that patient communication strategies meet the needs of California's diverse populations with consideration given to technological sophistication, cultural sensitivity, educational opportunities, demographic differences and sensitive health information.

- Enhance and leverage participating provider entities, existing consumer programs and community resources to engage in the consumer/patient engagement communication efforts. Ensure that every point of care is an opportunity for HIE engagement and that ongoing consumer initiatives have a poignant messaging and a tangible role in consumer HIE engagement.

The Communications Plan approach contemplates a number of strategic options for creating awareness and encouraging engagement with HIE services.

- Establishing a public campaign to ensure that consumers and patients are aware of ways to actively engage and benefit from the significant investment in HIE infrastructure that has been made at the State and federal level. Tactics include establishing a straightforward campaign and message architecture based on consumer, patient and provider research that clearly communicates "what's in it for me," including message and proof points about privacy protections and checks/balances, and describe the participation process clearly in accessible language. Supported by tangible use cases, using examples, personal stories and leveraging social media tools, (e.g., Twitter and Facebook), the Communications Plan will create a visual mark for use by providers fully participating in HIE and

meeting State technical requirements to reinforce the core components of the California HIE campaign.

- Following a tiered approach for the introduction of HIE based on consumers' exposure and use of online health resources, determined by greater needs or interest in use of online health care tools. In the first tier, early adopters and consumers with complex medical conditions will be targeted by utilizing appealing resources and tools to support making better choices. Below are some examples of target populations that would provide the most success in the outreach and education efforts in consumer engagement:
    - Groups with special medical needs,
    - Highly mobile populations,
    - Those already familiar with using online tools, for example, patients with diabetes,
    - Users of PHRs,
    - Residents of senior centers,
    - People working outside the health care system that work with and may influence consumers to use PHR online health care tools (for example, teachers and social workers), and
    - Travelers
- Using the numerous communication channels for the computer-literate and those with ready access to the Internet are numerous, including:
    - Consumer-friendly website allowing the uploading of consumer friendly resources, tools and videos,
    - Electronic newsletters,
    - Email blasts and campaigns,
    - Social media tools,
    - Mobile applications for personal digital assistants and smart phones, and

    - Short message service (SMS) or text campaigns.

- Addressing participation for the non-computer savvy population. California's population mix is very diverse in familiarity with technology. The Communication Plan will use a mix of media for consumer engagement promotion to reach across generational lines and be culturally sensitive, while specifically segmenting and addressing the vulnerable and underserved population with messages tailored to their concerns and delivered via channels that are accessible to these populations. The emphasis on messages to this segment will be to develop trust and offer a variety of in-person resources for engagement. For those without computer or internet access, communication and educational materials will be provided through the following channels:

    - Public computer to log on (i.e. libraries, computers at doctor offices, kiosk),

    - Senior center seminars and "ask the expert" sessions,

    - Newsletters distributed via the public libraries, care settings including community clinics, community centers and schools,

    - Mass media channels such as television/radio/billboard/print advertisements and direct mail, and

    - Articles in local publications, small papers, and associations.

- Identifying and employing subcommittee proposes the establishment of an oversight council, potentially a subcommittee of Cal eConnect, to approve of the communication that is to go out to the health care and consumer population; and the engagement of a consumer relations firm to survey the population, design the campaign and detail out the communication methodologies. The workgroup proposes hiring a full-time project manager with administrative and budget management support to manage these efforts.

7.2.1 Establishing a Marketplace of Innovation to Support Patient Engagement

Given California's active technology and venture capital communities, the Patient Engagement workgroup determined that a key strategy for successful engagement of patients with HIE was to encourage entrepreneurship and a burgeoning competitive marketplace for secure and sound HIE products and services that will encourage patient and family engagement in health care decision making. The development of HIE services provides an unprecedented opportunity to test new models, methods and

tools to engage patients in shared decision making, reduce cost and improve both service delivery and quality.

As HIE evolves, Cal eConnect will explore how a marketplace of innovation can be supported to allow tools to be demonstrated, used, tested, studied and established or simply developed and deployed by the private market. The marketplace should establish a set of principles, including respecting and adhering to the privacy and security policies of Cal eConnect, leveraging HIE services to the fullest extent possible, remaining budget neutral to Cal eConnect so that risk may be borne by the organization demonstrating their product or service, and delivering value by helping patients and providers in the shared decision making process. This marketplace would allow consumers to take full advantage of local expertise and enable HIE to drive toward an effective and evolving set of value-added services.

7.2.2 Barriers to Patient Engagement with HIE Services

As part of the consideration of factors that could increase engagement with HIE, the workgroup examined potential barriers to engagement, or possible motivations why a consumer would choose not to participate in HIE. The workgroup identified a key barrier in a culture of mistrust that has been cultivated by the fear that the insurance industry punishes individuals for illness and high-risk behaviors either by raising premiums or by dropping coverage. Concerns that insurance companies access PHI and use that data to deny benefits or coverage have contributed to a culture of reluctance to share medical records. The workgroup noted the possibility that the push for participation in health data exchange may run counter to the perception that sharing information about high-risk lifestyles or behaviors may lead to loss of insurance status, penalties or an inability to be insured if any loss of coverage occurs.

The workgroup proposes that Cal eConnect study four groups: Medicare and Medicaid beneficiaries, individuals with employer-based insurance, direct-pay or privately insured individuals, and parents who control their children's health data. The objectives of this survey would be to determine if there is a measurable fear of loss of insurance status if PHI is disclosed, if these perceptions differ among the groups, and if a customized communications message about how insurers are allowed to use PHI is needed.

8. Vulnerable and Underserved Populations and Providers

The Operational Plan strives to be inclusive of all vulnerable and underserved populations, gathering information from State and public agencies, advocates, and published literature to identify the unique needs of these populations and their information systems. It is recognized that Statewide HIE services should prioritize California's safety net, acknowledging that this population's ability to pay for services will be important to consider in designing the HIE infrastructure.

This heterogeneous population of patients and providers presents an enormous challenge for effective HIE, and one that is not easily resolved. In order to be truly inclusive, Cal eConnect will continue its research over the next 12 to 18 months to identify and determine how best to serve our state's vulnerable populations. In addition to continuing to build out a complete inventory of social services and State and local programs for health and social well-being, Cal eConnect should continue to explore the needs of vulnerable populations by participating in existing committees including the California Mental Health Directors Association Information Technology Committee, California Safety Net Coalition and California State Rural Health Association's (CSRHA's) HIT committee to assist in planning and determine areas in which Cal eConnect can provide sustainable services. Deliverables of the planning process should include:

- Prioritization of HIE services,
- Development of a technical assistance plan for ancillary databases,
- Identification of sustainable services (including administrative simplification), and
- Identification of additional financial resources to support HIE.

8.1 Consideration of Vulnerable Populations' Special Needs

Vulnerable and underserved consumers' special needs were identified specifically in terms of enhanced privacy provisions, improvements in health literacy, administrative simplification, special tracking and/or quality measurements and greater coordination of care. Vulnerable populations express a need for enhanced privacy protection due to the multiple health care providers and social services involved in their care, and the reality or perception of on-going societal discrimination. Vulnerable patients' use of multiple caregivers requires attention to the sensitivity to, and need for, coordination of care. In addition, HIE could provide substantial improvements to these populations' health literacy and simplify administrative barriers to care.

The sensitive nature of health information may create health care obstacles to the vulnerable and underserved populations that need HIE the most. If patients with sensitive health information are asked if they want to opt-in to HIE, they may be more likely to opt-out in fear that their conditions may be made public or used against them by providers, insurers or employers. Special consideration should be given to the vulnerable and underserved with respect to the HIE consent process. Also, where possible, patients with sensitive information should have the ability to seal access to their information, except in emergencies where required by State and federal law and/or with their permission of a legal guardian. A statewide consent registry should be considered, preventing vulnerable patients from being asked repeatedly to opt in to HIE.

Standard patient engagement materials should be revised to address the specific concerns of our vulnerable and underserved populations. In addition, education materials should be made understandable based on literacy levels and English proficiency. Translated materials should be available in accordance with State and federal law. These materials should outline the potential risks and the clear benefits of HIE, specific to their conditions, in a fair and balanced manner, to encourage as many of these Californians to opt-in and realize the benefits of access to improved care. Consent and education materials should be tested by vulnerable and underserved patient advocates and providers and validated for effectiveness by evaluating the percentage of these populations choosing to opt-out. The patient groups that opt-out most frequently and are left out of HIE due to lack of consent should be targeted for further outreach and education.

The vulnerable and underserved populations and their providers identified are preliminary and should not be construed as a prioritization, but to reflect the order in which the data was gathered within the timeframe available. Those identified are not necessarily a reflection of greatest need but of the active participants in the workgroup who represented the needs of these populations and their providers. It is anticipated that the needs of vulnerable and underserved populations will continue to be developed by Cal eConnect over the next 12-18 months. The needs of the following groups of vulnerable and underserved children and adults should be carefully considered in efforts to achieve optimal HIE.

8.2 Minors

Ensuring the privacy and security of minors'[38] PHI is a priority for Cal eConnect and CalPSAB's guideline development process. For example, in California, minors are allowed to withhold from their parents information regarding pregnancies, abortion and sexually transmitted diseases. If a parent is allowed to view his/her child's information via HIE services, the child's protection could be violated, creating a legal liability for the physician who made this information available to the HIE. CalPSAB has addressed the complex issues surrounding handling minors' sensitive health information in the Interim Privacy and Security Guidelines.[39] CalPSAB and Cal eConnect will work to address these issues as part of the revision of these Interim Guidelines.

The identity of a child's guardian and guarantor can become complicated outside the bounds of the typical two-parent household. The EHR system must provide the flexibility to include the broad variety of adults in the child's life who may play some role in medical or financial decision-making. The system should draw a distinction between the patient's guardian and his or her financial guarantor. In those cases in which a court has appointed a guardian for a minor, the ability of the guardian to consent to medical treatment depends on the type of treatment being sought and the scope of authority the court has granted. If more than routine care is required, the pediatrician should document the authority of the guardian to give consent by obtaining a copy of the official certified letters of guardianship. The State consent system should support this record-keeping, and have the ability to identify and to change guardian status easily for children in foster and guardian care.

A consent or authorization includes patient authorization for re-disclosure of sensitive information to third-parties. Consents and authorizations for printing should include appropriate standardized forms for patients, guardians and foster parents. The system must appropriately present forms for adolescents according to privacy rules.

[38] Minor groups to be considered (not limited to): Children with special education needs; Children in foster care programs; Children being raised by low income grandparents; Children "at risk" for Protective Services issues and/or entering foster care; Community care facilities residents; Children in the criminal justice system; CCS-Qualified children with chronic illnesses; Children with physical and/or developmental disabilities; Fragile infants; Homeless children; Impoverished/Poor children; Children living in rural, frontier and isolated locations with few health care services available; Lesbian, gay, bisexual, or transgendered children; Children in CalWORKs; Children with mental illness; Newborns in intensive care; and Transitional-aged children (emancipated).

[39] Section 1.4 "Applicability", of the Privacy and Security Interim Guidelines addresses minors' health information. This section includes 1.4.1 through 1.4.5., specifically 1.4.4 Minor's Control of Individual Health Information (as authorized by law) and 1.4.5 Minor HIE Consent Information. The Privacy and Security Interim Guidelines can be accessed here: http://www.ohi.ca.gov/calohi/LinkClick.aspx?fileticket=yLyFEJ10JNE%3d&tabid=56.

Some types of health information, including information on substance abuse treatment, require consent to be shared with other systems. In addition, systems that support the recording of consent and assent for treatment should be flexible enough to allow for the emergency treatment of minors.

8.2.1 Children in Foster or Custodial Care

In the current system, service delivery and care can often be fragmented and uncoordinated. Efforts to identify and treat foster children's health problems are complicated by their frequent changes in family placements, physicians and schools. As a result, many foster children do not have a complete medical record, resulting in missing information about allergies, immunizations, current medications and health problems.

When a child is removed from the care of his or her parents, as in the case of foster care, complex issues arise including supervision of medical care, ability to authorize medical care and ability to access confidential medical records. Licensed foster parents or relative caregivers may consent to routine medical and dental treatment for minors placed with them, pursuant to a court order or with the voluntary consent of the person having legal custody of the minor. The pediatrician should document the authority of a foster parent to give consent to medical treatment by obtaining a copy of the court order. Court orders also routinely give child welfare services departments the ability to authorize routine medical care. Parents who no longer have custody still may have the right to access their children's medical records and be involved with health care decisions unless their parental rights have been terminated. In some severe cases, court orders can limit parents' rights to participate in medical planning. Consent and supervision of medical care can be part of findings and orders made in court hearings. For example, judges are required to approve treatment (or changes in treatment) with psychotropic drugs. In addition, the juvenile judges and attorneys require timely access to current health information. This information can become part of the court record and the California Court Case Management System.

A variety of factors act as true barriers to care for foster children. Information about health care services children have received and their health status before placement is often hard to obtain. In part, this is because children have had erratic contact with a number of health care providers before placement. In addition, social workers are not always able to review a child's health history in detail with birth parents at the time of placement and medical histories do not always follow a child from placement to placement. Special attention should be paid to developing continuity of care documents for foster children, and that the necessary, safe and secure access by the foster parents, health care providers, social workers and the court is facilitated and not inhibited by HIE.

8.2.2 Children in the Adoption Process

Records of children who are undergoing adoption proceedings or who have been adopted may need special privacy handling, as in a case where State law offers special protections for the identity of adoptees. Sensitive, closed cases may be subject to additional types of constraints to privacy handling. Together, Cal eConnect and CalPSAB should allow flagging of these data for special privacy protection. In some states, the pre-adoption record may need to be separated entirely from any post-adoption record by using distinct patient identities. In addition, many children adopted through the foster care system may have multiple sources of health care insurance, including Medi-Cal, necessitating its availability in the HIE. Special privacy considerations be provided for by Cal eConnect.

8.2.3 Children Living in Medically Underserved Areas of the State

HIE needs to be sensitive to the fact many of California's children live in rural and frontier areas of the state where there are great disparities in the availability and access to health care, especially specialty care, dental care and mental health care services. Often, the care of children with special needs, chronic conditions or requiring complicated emergency services, is not just provided in the community in which they live, but may be handled on a regional or remote basis requiring the child and his/her parent or guardian to travel outside of their community. This can create complications and opportunities for HIE in that health care and social service records for the child may be spread over several different counties, which may not be contiguous with their home county, and therefore, disassociated from the local HIE infrastructure and interfaces built to serve health care providers in their home community. The HIE interface vendor serving the child's primary care provider, and the HIE system as a whole, will need to be sensitive to the fact they will need to communicate not only with auxiliary health care services serving their community, but also with services outside of their normal area/territory of care.

8.3 Vulnerable and Underserved Adults

Given the timeframe of the planning process, the Operational plan made every effort to be inclusive of all vulnerable and underserved populations[40] and reflects a list of these citizens that will be continued to be

[40] Including but not limited to Fragile elderly and adults in long term care; Adults with chronic illness; Community care facilities residents; Immigrant adults; Adults with physical and/or developmental disabilities; Adults with mental illness; Adults with substance abuse conditions; Impoverished/Poor adults; Homeless adults; Tribal TANF adults; Adults in CalWORKs; Single women with young children; Low-income women vulnerable for premature birth or other pregnancy complications; Adults who are unemployed or underemployed; Rural and frontier populations; Integrated case management recipients; Lesbian, gay, bisexual, or transgendered adults; Military families; Undocumented immigrant adults; Adults who are Privately Insured in the individual market; Adults without insurance and underinsured adults; Medi-Cal Managed Care beneficiaries; Dual-eligible (Medicare and

developed over the 12 to 18 months in order to continue to explore, discover and address all vulnerable population HIE needs. Cultural competence is an important consideration for the presentation layer of HIE services, including PHRs. These capabilities will be considered as services are considered by Cal eConnect.

8.4 Providers to Vulnerable Populations

For a seamless, holistic approach to healthcare, a planning strategy document should exist which describes how to access client data from multiple community support databases, when not limited by State and federal privacy laws. With proper client permission, it could link all the state databases available from Public Health, incarceration facilities, social services, and providers of care for adults with substance abuse conditions, with other community support databases such as the faith-based communities, Community Action Agencies, hospice care facilities, mobility management/transportation web-based services and medical providers, pharmacies and laboratories, while adhering to multiple confidentiality protocols and regulations. Administrative simplification will greatly improve the efficiency and quality of care provided to the vulnerable and underserved.

8.4.1 Child Welfare Services (CWS)

CWS has specific needs for HIE functionality that will require specific tailoring of HIE services, including:

- Providing access to holistic health data including information on physical, mental and behavioral health;
- Ensuring quality of data coming from legacy systems, especially eligibility data, keeping in mind that Medicaid is the primary health care funding source for most children in foster care;
- Ensuring capacity to exchange information between health care, social services, child welfare services, and the courts to support effective coordination and communication; and
- Enabling mechanisms to overcome barriers to access, preventive services, shortage of mental health services and lack of timely State assessments.

Medicaid) beneficiaries; Adults with limited English proficiency, English as a second language or who are non-English speaking; and Veterans.

8.4.2 Mental and Behavioral Health Providers

Federal and State legislation requires that detailed clinical billing and eligibility information be tracked by clients, claims and providers.[41] Workflow must be tracked and decision support must exist to remind clinicians to select appropriate services and to provide all necessary documentation to support billing. Regulations require clinicians to use best practices, to measure outcomes of care, and to fully engage consumers in their health care and personal health record.

Challenges associated with mental health provisions include that the behavioral health population may seek care at multiple sites.[42] For the same patient across statewide behavioral health care providers, there are multiple and distinct registration information profiles simultaneously in existence. There are no statewide standards for date-stamping data records, and capturing the data gathered in follow-up care. Finally, there is a proliferation of local county-specific databases designed for programs such as Criminal Offenders with Mental Illness, Drug-Court, Computer Resource Allocation Inventories and others that do not cross-reference.

In California, county mental health departments are responsible for the mental health managed care program. As such, the fiduciary relationship is between the State and the county mental health systems. There is not a direct fiduciary relationship between the State and mental health providers that are not operated directly by the county; instead, counties contract with private mental health providers. Due to this administrative structure, it is critically important that county mental health agencies are part of the provider conceptualization and are identified as having important administrative functions. Cal eConnect must consider provider networks with respect to the counties they support with mental health services.

8.4.3 Rural Providers

Covering more than 50% of the California landmass and more than 15% (5 million) of its residents, California's 63 rural hospitals, 260 rural health clinics, 70 tribal clinics, more than 230 community federally qualified health centers (FQHCs) and community health centers, and approximately 1,600 high-volume Medi-Cal providers run the gamut from having no IT infrastructure to having among the most successful HIEs in the state. Recent surveys show that less than 30% of rural health care providers have adopted EHRs or have access to HIE services. Most rural providers share common issues: a lack of

[41] INFORMATION TECHNOLOGY COMPONENT AND TECHNOLOGICAL NEEDS PROJECT PROPOSALS. City and County of San Francisco Department of Public Health, Community Behavioral Health Services, Mental Health Services Act (MHSA). December 17, 2009)

[42] Weathers, A. MD, DrPH, et al., Health Services Use by Children of Migratory Agricultural Workers: Exploring the Role of Need for Care PEDIATRICS Vol. 111 No. 5 May 2003, pp. 956-963.

broadband access, technical competency and IT workforce shortages, financial strain and limited resources. Until now, most vendors of eHealth software and other systems were focused almost exclusively on urban sectors, leaving small rural health providers few options for moving forward to adopt EHR and HIE. Virtually all rural health clinics and FQHCs in rural areas are eligible for Medi-Cal EHR Incentive Payments, as are two thirds of the rural hospitals under the current NPRM, in addition to most physicians. A lack of knowledge, financial support, backup health workforce to support down-time of front-line staff, and a narrow list of successful EHR and HIE peer models and qualified vendors has kept most rural providers on the sidelines of EHR and HIE development. As an example, critical access hospitals are excluded from the meaningful use incentive payments available to other hospitals, but can get a portion of their adoption costs reimbursed after the fact.

The scarcity of specialists in these medically underserved communities compels patients to rely on technology such as telemedicine and home health monitoring to receive timely and appropriate care. As such, the establishment of broadband infrastructure to these communities is an essential requirement to resolve health care disparities. Cal eConnect will work closely with the California TeleHealth Network to provide broadband to all rural hospitals in California and promote integration with EHRs.

Meaningful use is achieved only through the capture and exchange of information between pharmacies, laboratories, imaging facilities, physicians, clinics, hospitals and long-term care facilities. It is unlikely that the 63 rural communities anchored by their respective hospitals will form these local exchanges without direct assistance, guidance and intervention from Cal eConnect. The workgroup recommends that Cal eConnect assist in the planning, implementation, standardization and sustainability of local exchanges based in every rural hospital in the state that wishes to participate, and, where possible, apply for Medicaid Assistance Program funding for medically underserved areas and providers predominantly serving Medi-Cal beneficiaries.

Equally important is the availability of working capital to build the necessary infrastructure for meaningful use in Critical Access Hospitals, who may have to wait up to five years for full reimbursement of their HIT expenditures. Non-profit and public facilities may potentially access loans from California Health Facilities Financing Authority (CHFFA), and other sources like the USDA loan, loan guarantee and grant programs, but many rural facilities may need other financing alternatives. USDA can put as much as $10 million in loans and back up $200 million in loan guarantees, and can provide grants to qualified rural health providers, especially health district entities, but knowledge of these programs needs to be distributed much more broadly in rural California. USDA funds are also subject to a September 2010 sunset, unless refunded by federal authorities.

Other alternatives may come from UnitedHealthCare (UHC). As one condition of the privatization of UHC, a program was created to provide capital for the reduction of disparities in health care. The UHC program could fund the costs of issuance of a low interest rate $10,000,000 loan fund supported by a bond initiative. Under a separate grant, UHC would also be able to cover the costs of planning this initiative. In order to receive the low-cost loan, eight to ten eligible hospitals would need to be ready to move forward on HIT adoption. This work has begun by the Rural Health Information Technology Consortium (RHITC), formed by the Critical Access Hospital Network, UHC, the California Hospitals Association (CHA), CSRHA and rural HIOs, and supported by CHHS.

Rural patients are likely to find it difficult to travel for health care, have limited access to broadband and fewer financial resources. As part of the rural HIE infrastructure planning, Cal eConnect will consider the use of secure physician email and messaging and self reporting via telehealth and home health monitoring. Caltrans, California's transportation agency, has begun pilot programs to utilize relatively new online/web-based mobility management systems, which allow patients to tap all existing local transportation services through one contact to support the transportation access of health care and trip reimbursement. Cal eConnect will consider working with Caltrans Mobility Management Project leadership and local broadband health and human services entities, like the 2-1-1 call centers, to ensure HIE services utilizes these new health-related transportation coordination services.

One of the greatest strains on the rural health system is the transfer of patients to tertiary care hospitals. The process of locating beds and having patients accepted can leave a patient in the emergency room of a rural hospital for up to 72 hours. Patients are transferred more often than necessary due to incomplete information and risk avoidance. When transferred, the lack of a CCD imperils their care and hinders the receiving providers. Robust HIE between the rural hospitals and the tertiary care centers can transform the quality, efficiency and cost of care in these communities. The addition of teleconferencing services to accompany HIE and facilitate the dialog between the insurer, the referring site, the case manager and the receiving site can reduce unnecessary transfers, lower costs and improve outcomes for rural patients.

Cal eConnect will also work with the various entities in the prematurity field, such as regional Neonatal Intensive Care Unit (NICU) hospitals, March of Dimes, regional Children's Hospitals, California Maternal Quality Care Collaborative and California Premature Infant Health Coalition, to coordinate HIE systems necessary to ensure prematurely expecting mothers are in the right place at the right time for premature deliveries to reduce expensive and complications that would otherwise occur if the premature born infant and mother required transportation after a high-risk birth.

8.4.4 Mobile Clinics/Mobile Units

Mobile clinics, which travel from region to region and interact with individual patients outside of standard office visits, require the ability to connect to statewide HIE services at intervals, and store and forward information when they have Internet access. An example of the need for the interconnectivity of mobile clinics if the HIE of information around immunizations with the regional and State immunization registries to ensure the immunization registries records are up to date.

8.4.5 Blood Banks

Blood banks have been at the forefront of HIT, yet have limited financial resources. The blood banks are required to report critical test results to the Department of Health in the county where the donor or patient resides, which could be facilitated through the HIE. Blood banks also need to interface with hospital EHRs when providing autologous or reference laboratory services for patients. Blood banks are exempt from certain HIPAA regulations, so data exchange may be permissible in ways that are not common to the rest of the HIE, as long as they are compliant with State privacy and security guidance. These differences must be carefully considered. Other features of the HIE that are needed by blood banks are timely access to data, such as in the case of a product recall, and the ability to track autologous patients as they change hospitals and doctors.

8.4.6 School-based Health Care (SBHCs)

SBHCs ensure that more than 1 million children and adolescents across the country gain access to high quality, comprehensive medical care, mental health services, preventive care, social services and youth development. The passage of federal health care reform contained new resources to expand the number of school-based clinics. These services are provided without concern for students' ability to pay and in locations that provide services to the most children and adolescents at school. The primary challenge will be that SBHCs are operated by different kinds of agencies: some run by community health centers, some by hospitals and others by school districts. Most SBHCs provide care to very poor, disenfranchised, often uninsured populations. Not all SBHCs are regulated by HIPAA, which must be reconciled with HIE.

8.4.7 Public Hospitals and Clinic, Emergency Rooms and Community Health Centers

Many vulnerable and underserved patients are treated in acute settings, often involving emergency department (ED) visits. ED visitors present a unique challenge for data exchanged through HIE because traditional identifiers such as social security numbers are often absent. These patients include a high percentage of non-English speakers with low health literacy levels and limited access to private health

care services. Use of the ED for primary care emphasizes the strong need for documentation of community resource requirements in a record that is accessible to medical providers to facilitate coordination of care and to maximize use of available community-based support. Community health centers (CHCs) and public clinics share many of the needs of the public hospitals and emergency rooms (ERs). In addition to financial constraints, one of the key challenges for clinics is the mechanics of including uninsured and homeless patients in HIE.

8.4.8 Long Term Care/Skilled Nursing Facilities

Some older adults have professionals or family members acting as Conservators or as Powers of Attorney for health care. In those situations, the person holding the right to make medical decisions would need to be included in decision making, and have access to the health information. Given their high degree of acuity, the high number of medications, medication interaction effects and vulnerability to side effects of medications, older adults have a great need for integration of medical, pharmaceutical and mental health information.

8.4.9 Dentists

Dentists trail other health care providers in the adoption of HIT and EHRs, and lack a certified electronic dental record. Other challenges to the exchange of dental information include the lack of nationally-accepted and validated dental quality measures. Although dentists are included as eligible providers in the meaningful use NPRM, there were no dental-specific quality measures proposed for this reason.

8.4.10 Community Care Facility Licensees

Licensees accept clients who are placed by various agencies, such as Corrections, Regional Centers, Probation and CWS. Having access to past health information is vital to these agencies in determining the medical needs of the client.

Many clients who live in community care facilities have chronic medical conditions. Access to health information may provide improved outcomes for clients. Some licensees do not have access to the Internet, and facilities located in rural areas may not have local access to health care services. Licensees currently have no known access to health information databases. However, licensees who serve children are required to have proof of immunizations on file. All facility categories maintain confidential health information.

8.5 Indian Health Services, Veterans' Administration Facilities and Department of Defense

There is a strong need for Tribal and Urban Health Programs to interface with the Resource and Patient Management System (RPMS), the systems used by the Indian Health Service (IHS) to manage clinical, business practice, and administrative information in order to meet stringent IHS reporting requirements, including the Government Performance and Requirements Act (GPRA) reporting. There are 638 small and independent Tribal Health Programs in rural and isolated communities, which are hard to reach and have high provider turnover. There is little support for the Tribal and Urban Health Programs in California by IHS for non-RPMS EHR implementation despite large amount of federal funding for IHS. When establishing HIE in rural communities, Cal eConnect should promote connections established between the tribal clinics and the rural hospital to which they are referred to for care.

In addition, Cal eConnect should support integration with the Veterans' Administration's Vista system and My HealthEVet.

8.6 Correctional Facilities

The California Department of Corrections has built an electronic clinical data repository, which warehouses the medical records of its inmates, connecting its 33 facilities to laboratory and pharmacy services, which are available through a portal to its 6,000 health care providers. This repository is used for disease management and tracking programs. Cal eConnect should support the integration of this system into State HIE services, determine whether this system can be used to assist their providers to achieve meaningful use and facilitate shared services between the programs. The current policy of early release of some prisoners due to county and State budget deficits will increase the need HIE access by local providers of care to prison facilities, so that PHI can be shared with the local health care authorities who will absorb the care for the released prisoners.

8.7 Department of Alcohol and Drug Programs

The Department of Alcohol and Drug Programs administers the Drug Medi-Cal program for DHCS which pays for alcohol and drug treatment services. The California Outcomes Measurements System, which will be potentially impacted be HIE, is California's data collection and reporting system for alcohol and other drug treatment services. Treatment providers send client treatment data to the Department of Alcohol and Drug Programs each month. This treatment data builds a comprehensive picture of client behavior with alcohol and drug use, the legal system, employment and education, family and social ties, and physical and psychological health.

8.8 California Welfare Services

Case managers in the In-Home Supportive Services Program (IHSS), Adult Protective Services, Multipurpose Senior Services program and other care programs would benefit from having access to information to ensure smooth transitions between hospital and other institutional settings and in-home and community based settings to assist in tracking and managing chronic care conditions, health and social service needs. Cal eConnect should consider the integration of welfare services into the case management facilitation of intra-hospital transfers.

8.9 Vulnerable and Underserved Insurance Providers

Many safety net providers focus on care delivery to the uninsured and underinsured, which provides them with low reimbursement. There is low adoption of EHRs by participating safety net providers, and not all providers have computers or access to the Internet. Many practices lack time and/or financial resources to evaluate, select, purchase, implement and maintain EHRs. Cal eConnect should support:

- Single point of access for all services, both medical and social;
- Universal documentation of social/community resource needs/utilization in the record, which is accessible to medical providers to facilitate coordination of care and to maximize use of available community based support;
- Single credentialing body for physician credentialing;
- Use of One-E-App, a technology that helps streamline the application process for families and program administrators by providing one electronic application that collects and stores information, screens and delivers data electronically, and helps families enroll in a range of public and private programs for all social services;
- Use of prescription information accessible to providers and members to facilitate avoidance of polypharmacy, and other medication errors and improve patient compliance; and
- Provision of an Individualized Care Plan that is available across the continuum, and accessible by practitioners as well as health plan or physician group case managers to aid in coordination of services and avoidance of duplication of service.

8.10 Privacy Concerns of Vulnerable and Underserved Populations

CalPSAB will address the following privacy concerns of vulnerable and underserved populations to update the Interim HIE Privacy and Security Guidelines with clear rules regarding sensitive individual health information, minor consent, patient identification and patient preferences.

- State law related to the human immunodeficiency virus (HIV) and social security number use must be harmonized with technical infrastructure for consent and access.

- The high sensitivity of mental health and substance abuse issues must be explicitly addressed. Mental Health privacy laws, the federal Confidentiality of Alcohol and Drug Abuse Patient Records Act, and medical confidentiality statutes and regulations confound the smooth exchange of information, sometimes within the same system/organization.

- If a SBHC is run by a school district, it will operate under the Family Educational Rights and Privacy Act (FERPA), not HIPAA. If a SBHC is run by CHC, then it will operate under HIPAA. The FERPA-HIPAA interface in schools is very complex. Also, adolescents often receive sensitive services as outlined in California Minor Consent Laws. These services may be provided without parent consent and confidentiality must be protected.

- Selecting a unique ID when traditional identifiers, such as social security numbers, are absent is a challenge for this population.

- Standard HIPAA acknowledgement document must be signed by a parent upon admission, but parents are not always advised of information transfers.

- Clients may not want information shared on a global level and may want to protect basic information such as a diagnosis. It is more difficult to develop standardized criteria for disclosure that respect the client's desires, considering that Mental Health privacy laws, the federally protected confidentiality of Alcohol and Drug Abuse Patient Records Act, and medical confidentiality regulations confound the smooth exchange of information, sometimes within the same system/organization.[43]

- Family members may need or desire to access health information.

[43] Title 42, CFR Part 2, the Confidentiality of Alcohol and Drug Abuse Patient Records Act requires consent to share data; opt-in required.

- There may be HIPAA requirements that preclude licensees from obtaining confidential health information.
- There may be statutory change required to allow licensing staff access to health information.
- The method for member identification needs to ensure that the appropriate member is being identified for data sharing so privacy protections are not violated.
- CWS Social Workers must have access to health information for children placed in foster care. They may also need information when investigating suspected child abuse in order to make quality recommendation to the courts, requiring parent/guardian consent, which can be difficult to obtain.
- Foster parents are authorized to act on behalf of the child to schedule medical appointments and ensure access to medical services. Courts and social workers (and counties with PHNs) oversee this function as well.
- HIPAA is generally misunderstood and serves as significant barrier for the necessary exchange of health information both intra and interagency communications.
- EHRs will need to develop multiple levels of security and to facilitate selective access to different components of the medical records. These permissions will need to change as an adolescent ages. Once the adolescent reaches age 18, access will need to be reassessed and systems developed to ensure that the young adult controls access to his or her EHR.
- EHRs need to address unique privacy issues, including adolescent privacy, foster and guardian care, and consent for treatment. EHRs need to allow for differential treatment of certain protected information as needed.
- HIPAA distinguishes between emancipated and un-emancipated minors regarding disclosure to third-parties. Emancipated minors, like adults, must be given access to their health information and medical records, as well as the ability to obtain copies and to request corrections. For un-emancipated minors, the rule provides for parental control of information flow.
- HIE systems should support privacy policies that vary by age, presenting problem and diagnosis, and be flexible enough to handle the policies of individual practices. Furthermore, if an EHR system handles record-keeping for consent for treatment, it should provide for the recording of assent for treatment (from an underage adolescent or child), combined with parental informed permission as

well as consent for treatment (from an adolescent) and combined with a record of parental involvement. The separation of the patient's consent and the parent's or guardian's consent is particularly important in the area of testing for substance abuse. Pregnancy is another area in which the records of patient and parental consent, assent and permission may be less straightforward than in adult care.

9. Legal and Policy

California began its privacy and security work related to HIE as a participant in the Health Information Security and Privacy Collaboration operated by the Research Triangle, Inc. on behalf of ONC. In 2007, at the direction of the CHHS Secretary, CalPSAB was created and charged with recommending the best privacy and security solutions for the advancement of HIE in California. The work of CalPSAB has been complex and difficult at times, but has set the foundation for process and has outlined the objectives for the future.

Over the past three years, CalPSAB has researched, evaluated and vetted a number of issues. Privacy and security baseline standards were established in early phases of work, including principles for privacy and security and scope of the potential rules. Subsequently, issues surrounding consent options were assessed. CalPSAB ventured through several scenarios, including e-prescribing, laboratory, mental health and emergency department scenarios, to analyze consent options. To date, the consent option decision remains split among disparate stakeholders in the health care community.

The complexity of the consent discussion exposed other areas of required analysis, most prominently, limiting the use of health information to those appropriate. CalPSAB conducted research and analysis of three specific scenarios, secondary uses of health information for e-prescribing, laboratory results and emergency department. The findings of the analyses shed new light on issues that would need to be resolved before privacy and security standards could be established. The findings also supported the need to balance the consent option with the ability to control the flow of data and the security controls in existence to safeguard the data.

CalPSAB's recent work has been foundational to setting the stage for privacy and security for HIE, and its continued progress is dependent on four main bodies of work:

- Consent to use health information in HIE,
- Access control standards in HIE,
- Limiting to appropriate uses of health information, and
- Segregation of sensitive health information.

These essential components of privacy and security hold the key to successful HIE by fostering trust of all its participants and users. Determining appropriate use of health information will create reasonable limits to data use and sharing. The consent option ensures patient awareness of their information that is

exchanged and will provide patient's with reasonable control over the exchange of their own health information. Access control standards will provide a standard set of criteria in which to control the flow of health information throughout HIE, and will embed reasonable data access limitations that minimize risk of misuse and inappropriate disclosure. Segregation of health information will allow for specialized protection of sensitive health information.

Over the next few years, the eHealth Policy Branch will work closely with Cal eConnect to develop, promote, and enforce a comprehensive set of rules for California health care industry stakeholders exchanging electronic health information. The eHealth Policy Branch guidelines will complement the GE's policy guidance, the HIE Policy Process to create a standard set of legal, technical, business and privacy and security rules for health care industry stakeholders performing HIE. California entities utilizing HIE services will be required to operate under these common set of rules.

The cutting-edge nature of HIE requires a somewhat fluid and iterative process for the development of new privacy and security rules. The plans to create standardized rules through the various efforts facilitated and overseen by the eHealth Policy Branch are discussed below (See Attachment 12: CalOHII – eHealth Policy Branch Privacy and Security Work Roadmap.)

The eHealth Policy Branch supports and facilitates five main areas of HIE privacy and security work:

- *Privacy and Security Harmonization*: The eHealth Policy Branch provides legal recommendations for harmonization of State and federal privacy and security laws. Through the CalPSAB Legal Committee process, California laws are identified and examined for barriers to HIE. Where barriers or gaps are discovered, recommendations are made to the CHHS Secretary.

- *Privacy and Security Guidelines*: The eHealth Policy Branch oversees the development of interim and final guidelines that facilitate and support HIE. Privacy and security guidelines are documented, vetted, and refined over time to ultimately create the standards for all California HIE participants.

- *Guideline Enforcement*: The eHealth Policy Branch may be establishing an Enforcement Committee that will be charged with development of Guideline Enforcement policies that may include reporting and auditing requirements of HIE participants.

- *CalPSAB*: CalPSAB was established by the CHHS Secretary to provide private and public collaboration to address and coordinate HIE privacy and security efforts in California. CalPSAB is a forum facilitated by the eHealth Policy Branch to vet guidelines and demonstration projects through public and private stakeholders.

- *Demonstration Projects*: A variety of projects will provide focused testing on HIE privacy and security guidelines, specifically in areas where health care industry stakeholders have illustrated polarization on issues that continue to be unresolved. These projects will also test guideline implementation strategies for viability among a broad array of stakeholders.

- *Education*: The eHealth Policy Branch provides consumers and providers with education materials to support the consumer and provider community as California moves forward with the adoption of health information exchange.

9.1 Privacy and Security Harmonization

CalOHII has inventoried and analyzed the existing State laws in California that apply to privacy and security of PHI. CalPSAB is finalizing a set of initial priority targets to harmonize existing policies and requirements that may be interpreted differently, are not consistent with one another and may not be uniformly applied. CalPSAB has established a committee structure with a flexible multi-year agenda of tasks to endeavor to resolve the issues being identified.

It is imperative to develop widely-accepted legal and business rules with uniform consent forms and procedures that will enable HIE for clinical treatment purposes while assuring confidentiality and security of the information. The conflicting understanding of the law impacts the existing mechanisms and procedures in California, and puts at risk the efficient and effective HIE.

CalPSAB and Cal eConnect will collaborate to ensure that statewide policy guidance and contracting requirements for participants in HIE harmonize with State law, court orders, regulations, guidelines, and federal law, as well as coordinate California's requirements with evolving rules at the federal level. As an additional goal, the Policy Process will strive to harmonize disparate requirements of neighboring states to enable efficient administration.

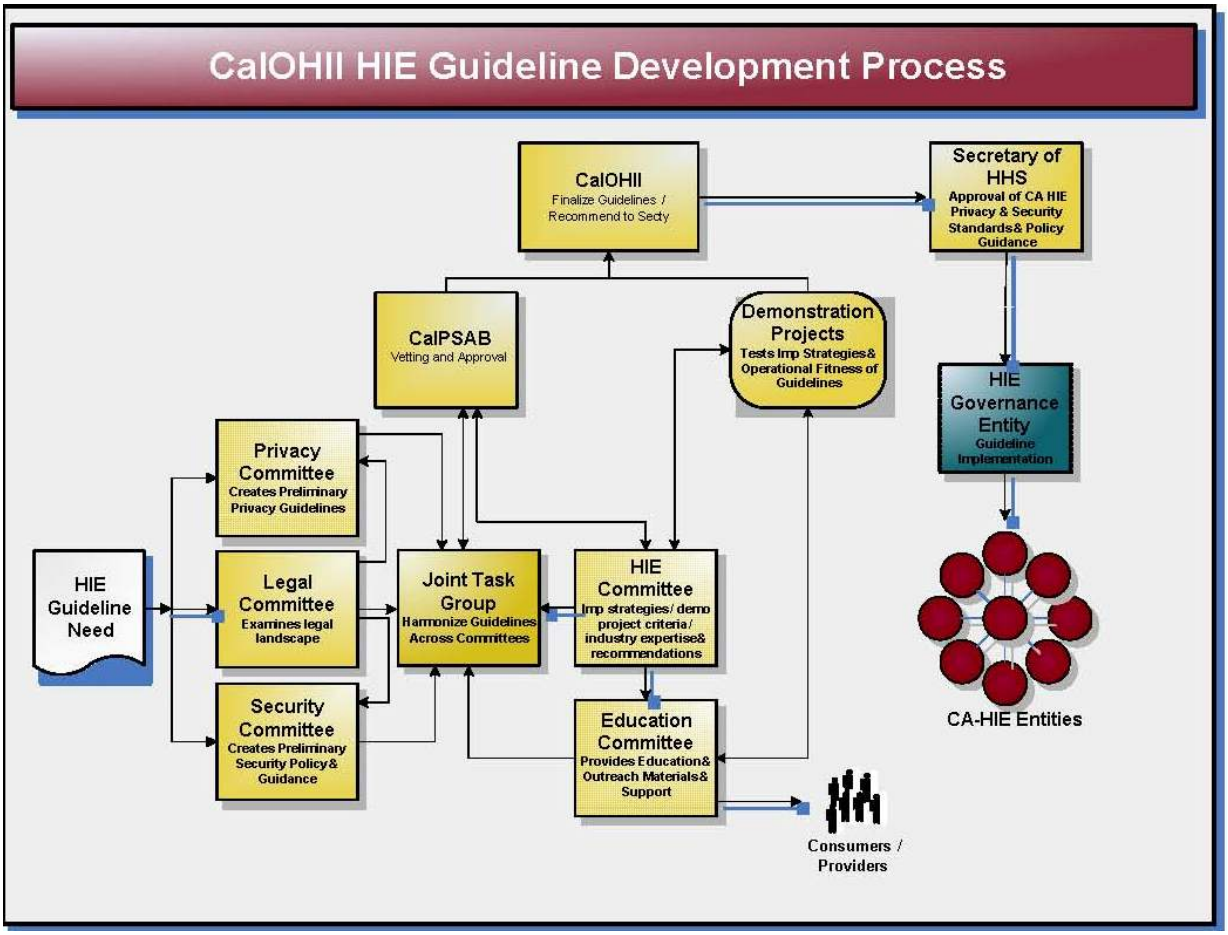
9.2 Privacy and Security Guidelines

The eHealth Policy Branch produced a preliminary set of Privacy and Security Guidelines in 2009, based on existing State and federal legal requirements. The eHealth Policy Branch has included privacy and security provisions of HITECH, HIPAA Privacy Rule, HIPAA Security Rule, Confidentiality of Alcohol and Drug Abuse Patient Records Regulations, State law, and the HHS Privacy and Security Framework in the preliminary guidelines, and will continue to update the guidelines as new guidance is provided by the Federal government. The guidelines will initially apply to entities in receipt of the ARRA funding or services provided from entities resulting from the ARRA funding.

The preliminary guidelines have been vetted through the CalPSAB process and constantly evolve as issues emerge and are resolved. The eHealth Policy Branch will continue to work through the CalPSAB process to resolve issues and progress to standardization of privacy and security rules. The guideline creation process is comprised of a variety of efforts including committees, task groups, joint task groups, and demonstration projects.

Final recommendations regarding HIE privacy and security guidelines will be submitted for approval by the CHHS Secretary, as detailed below in the Development Process flow diagram.

Figure 5. CalOHII HIE Guideline Development Process



9.3 Guideline Enforcement

The eHealth Branch is not only responsible for the standardization of privacy and security rules for HIE, but also for the development of enforcement policies for those guidelines. As HIE participants begin using HIE services, they will be held to the contracts and agreements that include the specific guideline

provisions that have been created by the eHealth Branch. It has not been determined what the penalties may be when an entity does not adhere to the HIE Privacy and Security Guidelines. A policy that includes monitoring, reporting, and penalties will be developed to ensure that the trust that is built through the guideline provisions is maintained by each and every participant

The eHealth Branch will facilitate an Enforcement Committee that may include a public-private collaborative of participants including, but not limited to, Cal eConnect, State departments, Department of Public Health Licensing and Certification, Consumer Affairs, and Office of Privacy Protections. The involvement of a multitude of enforcement and licensing organizations will be valuable in creating a thorough and strong enforcement policy.

9.4 CalPSAB

CalPSAB is a broad coalition with active members from the major health systems, consumer advocates, insurers, medical groups, community clinics, employer groups, public health and HIOs as well as professional associations who represent these stakeholder groups. CalPSAB is tasked with developing and recommending privacy and security policies for HIE that promote quality of care, respect the privacy and security of PHI, and enhance trust. CalPSAB has five committees that address diverse HIE privacy and security issues: Privacy, Security, Legal, HIE and Education. The committees are collectively responsible for analyzing issues, developing and evaluating the effectiveness of alternate solutions, and presenting proposals to the CalPSAB.

CalPSAB recommends methods to harmonize State and federal privacy and security laws in order to support compliant HIE. The Legal Committee specifically identifies and reviews State and federal privacy and security laws for barriers to HIE. Recommendations made to the CHHS are intended to bring the State's laws into a congruent legal framework. To remove barriers to HIE, CalOHII will ultimately develop legislative proposals to amend laws or create regulations to be approved by the Secretary.

Once the GE is established, some of CalPSAB's efforts will transition to the GE. The GE is responsible for the implementation and operationalization of the HIE Privacy and Security Guidelines and that the long-term harmonization of laws and the maintenance of the Guidelines is retained by the CalPSAB in the CalOHII. The policy functions for Privacy and Security will remain with the respective CalPSAB committees. Also, the legal functions will remain part of the eHealth Branch and CalPSAB efforts. However, the HIE Committee and Education Committee will transition to the GE as the two committees are charged with the implementation of policies and strategies. CalPSAB has begun the implementation work and will continue to do so until such time that the GE can manage these efforts.

The efforts of both CalPSAB and the GE will not bifurcate, but rather will effectively work together to create and implement policies and standards. CalPSAB will assist in the transition and continued development of policies and the implementation of those policies. CalPSAB will also facilitate joint task groups that include GE participation to develop use cases. CalPSAB and the GE will align HIE efforts to strategically create use cases that test privacy and security policies through demonstration projects

9.4.1 Privacy Committee Activities

The Privacy Committee is responsible for the coordinated analyses of privacy issues. The Privacy Committee will prioritize each issue based on the order of services that Cal eConnect will manage as part of building the statewide HIE services, and then by current issues, coordination with other committees, and resource availability. Over the next five years, the Privacy Committee plans to proceed with the following activities:

Table 7. Privacy Committee Activities

Privacy Committee Activity	Est. Timeframe
Privacy Baseline Assessment and Determination	Oct 2007 – Apr 2008
Applicability	Jul 2008 – Mar 2009
Consent Option Analysis (Mental Health, Emergency Department, Laboratory, e-Prescribing)	May 2008 – Sep 2008
E-Prescribing Secondary Use	Jan 2009 – Apr 2009
Laboratory Secondary Use	Mar 2009 – Jun 2009
Verification of Identity	Jun 2009 – Dec 2009
Emergency Department Secondary Use	Apr 2009 – Aug 2010
Sensitive Health Information – Define, Use / Purpose Limitation	Oct 2009 – Jul – 2010
Care Management Secondary Use	Nov 2009 – Aug 2010
Emergency Department Use / Purpose Limitation	Aug 2009 – Aug 2010
Health care Operations Use / Purpose Limitation	Mar 2010 – Jun 2010
Public Health Use / Purpose Limitation	Jul 2010 – Dec 2010
Quality Reporting Secondary Use	Oct 2009 – Aug 2011
Personal Health Records / Patient Access	Feb 2011 – Dec 2011
Clinical Summary Use / Purpose Limitation	Feb 2011 – Apr 2011
Research Use / Purpose Limitation	Jan 2012 – May 2012
De-Identification of Health Information	Jan 2012 – May 2012
Payment Use / Purpose Limitation	May 2012 – Aug 2012
Appropriate Use Limitation	May 2012 – Aug 2012

Privacy Committee Activity	Est. Timeframe
Health Care Oversight Use / Purpose Limitation	Sep 2012 – Feb 2013
Required by Law Use / Purpose Limitation	Apr 2013 – Jul 2013
Law Enforcement Use / Purpose Limitation	Jan 2014 – May 2014
Decedents/ Coroners Use / Purpose Limitation	Jan 2014 – May 2014
Government Functions Use / Purpose Limitation	May 2014 – Sep 2014
Employer Use / Purpose Limitation	Oct 2014 – Jan 2015
Marketing Use / Purpose Limitation	Oct 2014 – Jan 2015
Judicial Administrative Use / Purpose Limitation	Jan 2015 – Apr 2015
Health and Safety Use / Purpose Limitation	Jan 2015 – Apr 2015
Worker's Compensation Use / Purpose Limitation	May 2015 – Aug 2015
DIB / SSI Eligibility Use / Purpose Limitation	May 2015 – Aug 2015

9.4.2 Legal Committee Activities

The Legal Committee is responsible for recommendations to harmonize State and federal laws related to privacy and security of health information. The Legal Committee provides direct input to all other committees to help ensure that the laws are accurately and consistently interpreted throughout the process of issue formulation, alternative discussions, solutions determination and implementation.

Where impediments or gaps exist in the legal landscape that supports HIE, legal recommendations will be made by the Legal Committee to resolve these problems. Recommendations include harmonization of State law and constitutional amendment, court case findings and federal law.

The activities for the Legal Committee include critical legal fixes to standardize definitions, interpretations, and contractual obligations, such as DURSA.

Table 8. Legal Committee Activities

Legal Committee Activity	Est. Timeframe
Assess DURSA for applicability in California based upon legal risks and needs.	Mar 2010 – Jul 2010
Identify HIPAA provisions that are not clearly expressed in California law.	Mar 2010 – Dec 2010
Identify "Research" provisions in California and Federal law and harmonize; Define "Clinical Researcher"; Define "Bona Fide"; Identify "De-identification" provisions in California and Federal law and harmonize.	Jun 2010 – Dec 2013
Identify "Public Health" provisions in California and Federal law and	Feb 2010 – Jun 2011

Legal Committee Activity	Est. Timeframe
harmonize.	
Identify "Patient Access" provisions in California and Federal law and harmonize.	Feb 2011 – Dec 2011
Identify "Marketing" provisions in California and Federal law and harmonize.	Feb 2011 – Dec 2011
Identify "Employer" provisions in California and Federal law and harmonize.	Feb 2011 – Dec 2011
Identify "Payment" provisions in California and Federal law and harmonize.	Jan 2012 – Aug 2012
Identify "Health Care Oversight" provisions in California and Federal law and harmonize.	Sep 2012 – Feb 2013
Identify "Required by Law" provisions in California and Federal law and harmonize.	Apr 2013 – Jul 2013
Identify "Law enforcement" provisions in California and Federal law and harmonize.	Jan 2014 – May 2014
Identify "Decedents/ Coroners" provisions in California and Federal law and harmonize.	Jan 2014 – May 2014
Identify "Government Functions" provisions in California and Federal law and harmonize.	May 2014 – Sep 2014
Identify "Judicial Administrative" provisions in California and Federal law and harmonize.	Jan 2015 – Apr 2015
Health and Safety Use / Purpose Limitation	Jan 2015 – Apr 2015
Identify "Worker's Compensation" provisions in California and Federal law and harmonize.	May 2015 – Aug 2015
Identify "DIB/SSI Eligibility" provisions in California and Federal law and harmonize.	May 2015 – Aug 2015

9.4.3 Security Committee Activities

The Security Committee is responsible for identifying and recommending security policies to ensure the safeguarding of individual health information that is exchanged through California HIE services.

Table 9. Security Committee Activities

Security Committee Activity	Est. Timeframe
Security Baseline Assessment and Determination	Dec 3007 – Apr 2008
Access Control	Jan 2008 – Apr 2009
Develop Access Control Implementation Policy	Nov 2009 – On-Going
Develop Risk Management Implementation Policy	Mar 2010 – On-Going
Develop Consent Management Implementation Policy	Aug 2010 – On-Going

Develop Data Assurance Implementation Policy	Dec 2010 – On-Going
Develop Technical Controls Implementation Policy	Jun 2011 – On-Going
Develop Device and Media Implementation Policy	Dec 2011 – On-Going
Develop Security Incident Management Implementation Policy	Mar 2012 – On-Going
Develop Information Security Implementation Policy	Aug 2012 – On-Going
Develop Compliance Auditing Implementation Policy	Nov 2012 – On-Going
Develop Workforce Security Management Implementation Policy	Jan 2013 – On-Going
Develop Frequency of Actions Implementation Strategy Policy	Jun 2013 – On-Going
Develop Contingency Planning Implementation Policy	Dec 2013 – On-Going
Develop Facility Access Controls Implementation Policy	Jul 2014 – On-Going
Develop Network Security Management Implementation Policy	Dec 2014 – On-Going

9.4.4 HIE Committee Activities

The HIE Committee is responsible for taking the interim guidelines to the next level to recommend implementation strategies for privacy policies and security standards, and work collaboratively with California's HIOs to implement and test the requirements, resolve issues and recommend refinement of the guidelines as necessary. This Committee was established in late 2009, and will be receiving completed proposals from the Privacy and Security Committees to develop implementation and best practices recommendations on an ongoing basis.

Table 10. HIE Committee Activities

HIE Committee Activity	Est. Timeframe
Develop Implementation Strategy Tools	Mar 2010 – On-Going
Support Demonstration Projects	Mar 2010 – On-Going

9.4.5 Education Committee Activities

The Education Committee is responsible for the development of consumer and provider education resources and tools. The Education Committee will act as a resource and coordinate efforts with potential HITECH and ARRA funded demonstration projects, other demonstration projects, and the Privacy and Security Guidelines by developing educational toolkits to include fact sheets, frequently asked questions, interactive website, consent forms, a library of educational resources, awareness materials (brochures), and toll-free hotline number for consumers and providers. The Education Committee will also work with the RECs to provide information and outreach for providers.

The Education Committees will gather feedback from entities in the community that utilize the toolkit. The toolkit will be refined over time to include this feedback from the community, where appropriate, as well as harmonize with any State and federal regulation or policy. The Education Committee and the Patient Engagement Workgroup will merge to become one integrated committee under Cal eConnect's direction.

Table 11. Education Committee Activities

Education Committee Activity	Est. Timeframe
Standardize Opt-in Consent Form(s)	Jan 2010 – May 2010
Consumer Communications Toolkit	Jan 2010 – May 2010
Consumer Educational Fact Sheet	Jan 2010 – May 2010
Consumer FAQs	Jan 2010 – May 2010
Consumer Brochures/Materials	Jan 2010 – May 2010
Consumer Interactive Website of Resources and Tools	May 2010 – On-going
Provider Communications Toolkit	Jan 2010 – May 2010
Provider Educational Fact Sheet	Jan 2010 – May 2010
Provider FAQ's	Jan 2010 – May 2010
Provider Brochures/Materials	Jan 2010 – Sept 2010
Test Consumer Communications Toolkit	Jun 2010 – Dec 2010
Test Provider Communications Toolkit	Sept 2010 – Apr 2010
Update Consumer Communications Toolkit	Jan 2011 – Apr 2011
Consumer Marketing/Outreach	May 2011 – On-going
Update Provider Communications Toolkit	Jan 2011 – Apr 2011
Provider Marketing/Outreach	May 2011 – On-going
Provider Interactive Website of Resources and Tools	May 2010 – On-going

9.5 Demonstration Projects

The overall goal of demonstration projects is to create and maintain privacy and security rules that remove potential barriers and ensure equal access to all HIE participants. With such a divergent population of health care stakeholders with varying degrees of technical competency, each with different business requirements, it is not a simple task to level the field. Considerations must be given to technological feasibility, cost-effectiveness, business impact and legal risk.

California's tremendous diversity among health care stakeholders requires a close examination of implementation feasibility. To accommodate the diverse health care industry, which includes providers,

health plans, hospitals, HIOs, and other entities, policies address the cost, technological capabilities, business impacts, and diligent timing of guideline implementation. The eHealth Branch will test preliminary privacy and security guidelines in organizations already deploying HIE and EHRs in California.

California is exploring specific demonstration projects to gauge health care stakeholders' ability to implement privacy and security provisions related to HIE. The eHealth Branch is looking into several potential opportunities for testing privacy and security provisions including, but not limited to:

- *SHARP*: ONC has announced the availability of $60 million in funding for focused research in areas where breakthrough advances are needed to address barriers to the adoption of HIT to meet the goal of making EHRs available for all Americans by 2014. One of the four research focus areas is the security of HIT to address the challenges of developing security and risk mitigation policies and the technologies necessary to build and preserve the public trust as HIT systems become ubiquitous.

- *Beacon Community Cooperative Grants*: HHS is dedicating a total of $220 million in grants to support test cases for HIT and HIE within 15 communities. CHHS required that all California participants agree to participate in pilots. CalOHII's likely partnership with participating entities will serve to test the various issues discussed below.

- *RECs*: The REC program provides grants for the establishment of RECs to offer technical assistance, guidance and information on best practices to support and accelerate health care providers' efforts to become meaningful users of EHRs. CalOHII's Education and External Affairs Committee will provide education materials, tools and resources to assist these RECs in California.

- *California Health Care Stakeholder Volunteers*: California is opening its demonstration projects to any willing participant who will test the policies and issues discussed below.

Several privacy and security demonstration projects are being proposed as meaningful tests that will advance California closer to standard privacy and security rules for HIE. The following list has been determined by the eHealth Policy Branch to represent significant issues that may be resolved through testing in demonstration projects:

- *Consent for Opt-In*: The opt-in consent option for health care entities electronically exchanging data will be tested in order to gather information regarding complexity, cost, business impact, and technological challenges that may prohibit health care entities from adopting the opt-in consent option.

- *Consent for Opt-In with Restrictions*: The opt-in with restrictions consent option for health care entities electronically exchanging data will be tested as an alternative to the opt-in consent policy option.

- *Consent Education for Patients*: Consent education materials and tools will be tested to gather information related to the educational needs of a diverse population of people. This project will help take the pulse of Californian's comprehension of HIE and will aid in further development of educational resources.

- *Consent Training for Providers*: Provider educational materials and tools will be tested to understand the provider community needs and acquire feedback regarding consent options and HIE challenges.

- *Consent Registries*: HIOs will test consent management services that allow consumers to drive consent while allowing providers to use the consent across multiple entities. The project will gather information regarding consent management cost, complexity, and business impact.

- *Segregation of Data for Sensitive Health Information*: The ability to sequester sensitive health information from other health information will be tested as a State and federal legal compliance effort. The project will gather information regarding cost, complexity and business impacts.

- *Two-Factor Authentication*: Two-factor authentication for reliable access control will be tested for cost, complexity, and business impacts. Authentication is the process by which we determine that a system entry occurred by a specific individual and that individual carries the burden of proof that the access was not his or hers.

- *Authorization*: Authorization is the process by which access is granted after requirements have been met. The variety of security authorization attributes for HIE requires a robust set of test scenarios. Attributes include data source, entity of requestor, role of requestor, use of data, sensitivity of data and consent directives. This project will gather information regarding the various attributes, as well as the cost, complexity and business impacts.

- *Patient Access*: Testing patient access to their own health records will assist in understanding the technical challenges, as well as any business impacts or consumer navigation challenges.

- *DURSA*: DURSA is a comprehensive, multi-party trust agreement that will be signed by all NHIEs, both public and private, wishing to participate in the NHIN. California will test DURSA that complies with California laws.

9.6 Contractual Framework for Enforcement

An essential element of a comprehensive and uniform statewide policy framework for the HIE is the foundation of trust that must exist between patients on the one hand and providers and users of data on the other, and among the providers and users of data themselves. California has concluded that the most effective way to establish this level of trust is to provide an opportunity for participants in HIE to have an open and transparent process for development of policy and to agree to adhere to the policies that result.

California has examined the experience of other states where adherence to common and uniform State policies has been sought to be enforced through the terms of grant agreements governing State funding provisions or as a condition of participation in the use of state resources such as technology platforms. California has concluded that each of those models has deficiencies that can be initially addressed through a contractual model of participation and adherence.

In the contractual model, participants will be invited to participate in the statewide collaboration process to develop legal, business and technical rules that will govern HIE in California. The resulting agreement will require the HIE participants to adhere to the rules that are adopted through this process. A component of the contractual framework may be a DURSA so that each participant in HIE will know the legal, business and technical rules, including privacy and security guidelines to which each participant is bound.

Cal eConnect, in participation with the eHealth Policy Branch's Enforcement Committee described above, will ensure that appropriate oversight and enforcement mechanisms are established. Mechanisms include an arbitration forum in which disputes can be resolved, and authority to withdraw access to statewide shared services for a non-conforming data requester, provider or user.

10. Financial Model for HIE Services

This discussion of the financial sustainability of HIE is as much a discussion of options as it is a plan for success. The State expects to meet the needs of its citizens through a combination of public and private investments in HIT and HIE. The State will engage in these activities by promoting coordination and collaboration among private and public entities, ensuring that privacy rights of individuals is protected, that the needs of the vulnerable and underserved are met, and providing funding and resources through the State HIE Cooperative Agreement program for activities that benefit all citizens in areas where a business case for a private entity is lacking. In reviewing the potential payment models described as follows, the State will consider all models for all populations including the uninsured and underinsured.

10.1 Description of a Sustainability Model for California

There are many potential options for sustainability for the State HIE infrastructure. Cal eConnect will sustain the HIE infrastructure using predictable revenues sufficient to support the planned operations, and generally not with short-term funds. Cal eConnect plans to adopt a mixed delivery model providing most HIE services in a decentralized fashion, but with the support of centralized coordination and a centralized safety net.

Sustainability models may be geared away from direct support from institutions and providers and towards models that derive revenues from the broadest possible sources that derive value from such an infrastructure: public and private health plans (e.g. per member per month), current data providers (e.g., laboratories, radiology groups, hospitals), fee-based models (including utility add-ons such as special land and cellular telephone line excises) or other broad based revenue sources.

HIOs and regional HIOs do not typically have access to fee-based or taxation models. Sustainability for HIOs that govern and operate the local HIE can be achieved in numerous ways. However, there is only one option not laden with risk: the HIO delivers value to its stakeholders while charging those stakeholders fees that are perceived by the stakeholder to be as much as or less than the value they perceive they derive from their use of the services.

10.2 Current Modeling Approaches

Three strategic models for delivering reliable HIE throughout the state were considered. These models considered how much HIE might be sourced centrally versus how much would be sourced locally. The most heavily centralized model budgeted for a large portion of HIE services to be provided by the GE. The decentralized model presumed the GE would provide few services. The mixed model budgeted some

funds to central services and some funds to local services. A mixed model was selected, however, more study is required to determine the ratio of funds distribution for centralized versus decentralized services. Details of the models considered by the Finance workgroup can be found in Appendix 17.

The selection of the mixed model requires CHHS, as the recipient of the State HIE Cooperative Agreement funds, to allocate the funds among the following four needs:

- Funds to support CHHS and grant administration,
- Funds granted to support Cal eConnect and its administration,
- Funds granted to Cal eConnect to support central services (core or otherwise), and
- Funds for Cal eConnect to distribute to local/regional exchanges to connect with core services or enable local providers to achieve meaningful use.

10.3 Estimating Total Cost of HIE in California

The following analysis provides an upper bound cost estimate for total HIE coverage in California, based partially on work completed for the Loan Fund Workgroup. To begin, we looked at expenditures for statewide programs. New York has one of the more comprehensive programs of a State nearing the size of California.

Table 12. Comparison of California and New York Population and Area

State	Population	Area (Square Miles)
New York	19.3	54,000
California	36.5	164,000

To date, the State of New York has spent or committed $492 million for HIE, including all the functions that HITECH provides with stimulus funds – training, regional extension centers and assistance to HIOs. The State sees the expenditure to date as part of a $1 billion dollar project to implement HIE statewide.

If California were to take the New York State budget and adjust it based on population, the budget for California would be $1.89 billion. The investment made to date in New York indicates that the scope of what California must do to achieve linked records is a mammoth project, substantially beyond what the stimulus funds can begin to fund. Other states have committed State funds, but not nearly on the level of New York, more as seed or organizational funding. Maryland has provided $10 million. Florida has

provided about $5 million so far in regional HIO development and has estimated it will take another $10-15 million to accomplish an initial state health information network.[44]

Smaller states have developed cost estimates for statewide HIE as well. The State of Vermont began in October 2008, having each health insurer choose to pay 0.199% of all health care claims paid for its Vermont members in the prior year or a fee based on the insurer's proportion of overall claims in the prior year. This Health Care Information Technology Reinvestment Fee will produce approximately $32 million over seven years. This fund will be used to support statewide HIE and the adoption of certified EHRs.[45] Based on the population of Vermont being 621,270, this results in approximately $51.51 per capita.[46] Assuming 50% is for EHR, the HIE per capita amount would be estimated as $25.76. Applying this figure to the California population of 36,757,000, the California HIE budget for seven years would be approximately $947 million.[47]

Local HIO leaders discuss expansion technically in terms of the cost per interface implemented. Laboratory interfaces are among the most complex. Local HIOs in California were asked about the average cost per interface, typically between a provider, the HIE and laboratories not yet connected to the HIE. The HIE leadership suggested an average of between $15,000 to $46,000 per interface (with the amount including both inbound and outbound interfaces), plus maintenance charges to the EHR system vendor selling the base interface and HIE staff support costs of about $8,000 per year. OCHIN, a Pacific Coast provider of EHR systems primarily to community clinics and mental health programs, indicated that the average interface cost after implementing over 200 interfaces was as follows:

Table 13. Average Costs for New Interface (One Direction):

Component	Cost	Explanation
Base Interface	$10,000 to $15,000	Payment to vendor, one direction
Labor	$15,000	OCHIN staff cost
Maintenance	18% of base interface cost	Annual recurring cost

[44] Laura Kolkman, Mosacia Partners, telephone conversation, July 1, 2009.
[45] State Level HIE, Advancing Effective State-level Approaches to Interoperability in the New Federal Context: Realizing State-level HIE Value and Sustainability, May 15, 2009, pp. 66-67. http://slhie.org/wp-content/uploads/2009/12/SLHIE_Brief_AdvancingEffectiveSLHIEApproachesFinalReleased5_27_09.pdf.
[46] US Census Bureau, 2008, http://quickfacts.census.gov/qfd/States/50000.html.
[47] US Census Bureau, 2008, http://quickfacts.census.gov/qfd/States/06000.html.

Table 14. Average Costs for Secondary Copy of Interface Where OCHIN Owns Existing Interface (One Direction):

Component	Cost	Explanation
Base Interface	$5,000 to $10,000	Payment to vendor, one direction
Labor	$5,000	OCHIN staff cost
Maintenance	18% of base interface cost	Annual recurring cost

According to these estimates, a first interface is $25,000 to $30,000 and a secondary copy of the interface is $10,000 to $15,000. Overall, OCHIN estimates the average cost per interface at $20,000 one way. OCHIN has a highly skilled staff, has considered alternative approaches, and believes this is the real incremental cost for developing an additional interface and that there are no economies of scale.

Table 15. Approximate Counts of Providers in California

Organization Type	Count	Reference
HIE / Regional HIOs	20	Estimate
Hospitals	473	Office of Statewide Health Planning and Development [48]
Critical Access Hospitals	28	Office of Statewide Health Planning and Development[49]
Medical Groups	291	Cattaneo & Stroud, Inc., List of Active Medical Groups[50]
Solo & Two-Person Practices	14,837 (7,419 require interfaces; rest use ASP)	Medical Practice Business Blog[51]
Community Health Centers	110 centers, 796 sites	National Association of Community Health Centers, California Fact Sheet 2007[52]
Rural Health Clinics	263	CMS[53]
Behavioral Health Providers	~1,200	US DHHS, Substance Abuse and Mental Health Services Administration[54]
Medical Laboratories	2,439	Manta[55]
Pharmacy Benefit Managers	50	Estimate based on contracting experience[56]
Total Interfaces Needed	**12,105**	
*Includes the solo & two-person practices listed above.		

[48] http://www.oshpd.ca.gov/HID/Products/Listings.html
[49] http://www.oshpd.ca.gov/RHPC/pdf/Ruralhospital/CriticalAccessHospitalsList061108.pdf
[50] http://www.cattaneostroud.com/med_group_reports/3-Web.pdf
[51] http://www.allbusiness.com/services/health-services-offices-clinics-doctors/4492452-1.html
[52] http://www.nachc.com/client/documents/research/2008-State-Fact-Sheets/CAStatefactsheet08.pdf
[53] http://www.cms.hhs.gov/MLNProducts/downloads/rhclistbyprovidername.pdf#page=120
[54] http://mentalhealth.samhsa.gov/databases/facility-search.aspx?State=CA&fullname=California
[55] http://www.manta.com/mb_44_D0047_05/medical_laboratories/california. Somewhat mixed lab count.
[56] http://www.manta.com/mb_44_D0047_05/medical_laboratories/california. Somewhat mixed lab count.

To make a crude estimate of interfaces, assume that there is one interface between each hospital, each critical access hospital, each medical group, each solo and two-person practice, each mental health provider organization, each CHC and RHC, and each medical laboratory. In total, 19,523 interfaces are needed, assuming that every organization only interfaces with one HIO. While the laboratory interface is reasonably complex, the interfaces with provider organizations must transfer a number of different types of data: demographics, laboratory orders and laboratory results, radiology orders, referrals, chart notes, prescriptions, problem list, and CCD so there are actually a number of interfaces involved. Due to a lack of on-site IT staff, it is reasonable to assume that smaller physician practices may elect to purchase EHRs through an application services provider (ASP) with the interfaces included. This assumption reduced the number of interfaces needed to 12,105. To keep the numbers simple, a cost of $40,000 was assigned to each interface (for both directions), including those that actually represent several interfaces but are counted only as one. The product is $484 million. This estimate does not include the social capital cost of organizing HIOs, training, regional extension centers, hardware, networks, non-technical HIE staff, HIE management, base infrastructure or any other HIE costs. Note also that this estimate does not involve the number of HIEs in any way. Whether there is one HIE or 50, the interface estimate is unchanged.

Using the above estimates as crude indicators, the cost range for the project to provide HIE services throughout California is between $1 billion and $2 billion. The lower end of the range assumes costs beyond interfaces are another $500 million or that the Vermont model applies. The higher end cost is comparable to New York State, prorated based on population.

10.4 Estimating Costs to Support Regional and local HIOs

Every HIO is different in the quantity of hospitals, reference laboratories and physicians it connects. However, there are rules of thumb on how much money one HIO will need to operate, including paying for the technology being used and maintained, as well as the manpower to operate, market, and provide outreach. In general, a HIO can estimate its ongoing operating costs as the average of:

- Quantity of full service hospitals in the catchment area multiplied by $250,000 per year,
- Quantity of licensed health professionals in the catchment area multiplied by $2,500 per year, and
- Quantity of patients in the catchment area multiplied by $2.50 per year.

For example, a HIO with 10 full service hospitals, 1,800 licensed health professionals, operating in a region with a population of 1.2 million people should expect an annual operating budget of: ((10*250000)+(1800*2500)+(1200000*2.5))/3 = $3.33 Million per year.

10.5 Upfront Financing Strategies and Sources

Each HIO will consider three main sources of upfront financing: grant funding, self-funding and capital markets funding. Grant funding will be pursued from ARRA activities, private sector foundations and endowments. It is best to maximize these dollars now and not expect that they will be available in the future.

Self-funding is likely to become the most attractive approach. The return on investment on establishment of thin community health data services is increasingly attractive as health care moves massively from paper into electronic data services. The best example of self-funding is HealthBridge, an HIE in Cincinnati, Ohio. In a recent CAeHC webinar (10/22/09), Keith Hepp, Chief Financial Officer of HealthBridge, explained that HealthBridge was capitalized in 1997 with $1.75 million in startup loans from two health plans and five health care delivery organizations. HealthBridge operates a light interface service (e.g., 97% of the network traffic is clinical results delivery) and does not seek to impose heavy transactional or hosting costs on users. Of note, HealthBridge does not charge physicians for access to the HIE, eliminating one potential barrier to widespread adoption. HealthBridge has been cash flow positive for ten years. In particular, Mr. Hepp recommended that HIEs, “Treat ARRA dollars the same as capital, and use ARRA money to buy-down future costs.”

Cal eConnect will also research and review the potential for funding from the capital markets. Various means such as venture capital, bank financing and/or the bond market will be explored. The main prerequisite to secure funding from the capital markets will be a stable, ongoing revenue flow. However, there can be challenges to obtaining commercial capital, as shown by recent distress in the real estate and lending sectors; this type of funding requires reliable cash flow to pay it back. The Finance Workgroup recognizes the current challenges to accessing the capital markets, yet also realizes that this option must be considered as the budget and sustainability models are finalized. Having planned for this option will allow Cal eConnect, RECs and other entities to take advantage where possible and when this market becomes more viable than present conditions.

Bank financing may be available from both larger commercial banks and smaller community banks. Community banks in particular have programs available with the US Small Business Administration and the Federal Home Loan Bank of San Francisco. Other financing organizations could also package and

secure bond financing; funding could require a minimum guarantee of loans through the RECs to all providers and HIOs. These commercial vehicles would be available to the State, the RECs and the HIOs directly, and the providers.

The RECs, with Cal eConnect guidance, are responsible for identifying the funding models and pricing and repayment structures available to HIOs and providers. A referral list might be posted on REC websites, and a process to evaluate the feasibility of offering packaged group financing would be initiated. Cal eConnect accounting staff will also develop a list of resources available to them for State HIE pricing, repayment and qualifications they must meet to determine viability for future needs. It is recommended that this exercise occurs during the sustainability model development to ensure that the model generates sufficient funding to qualify for financing and repay debt.

10.6 Funding Options

The Finance Workgroup considered the following options for providing ongoing funding, apart from that received under the State HIE Cooperative Agreement program, to support the HIE.

- *Fees*: State fees designated for the purpose of supporting HIE, bond issuance, health plan claims surcharges, dedicated local or regional taxes;
- *Access Charges and Subscription Fees*: Possible fee structures would include a look-up charge, accessing patient data or results delivery or subscription fees based on the size and type of organization;
- *Savings Gain-Sharing*: Sharing with HIE cost savings enabled by the exchange; and
- *Current and Future Grant Funds*: DHS, HHS and private grant funding should also be considered and pursued.

Whereas there have been examples of sustainable HIOs since the mid 1990s, such as the Santa Cruz HIE, historically they have had to achieve sustainability and survive without statewide services. They did so by providing valuable services to their key stakeholders, and found equitable fee or revenue structures for them. There are many stakeholders that potentially derive value from a HIE services including: hospitals, physician practices and groups, health plans, local and county public health departments, safety net clinics, FQHCs, jails, large employers, business coalitions and patients. The value derived from each entity above varies with the scope, breadth and focus of the services provided.

In regional HIOs, the typical primary stakeholders are hospitals and physicians. Several HIOs have found sustainability simply by providing hub-based connectivity solutions for these participants. In other words, reducing the expense to hospitals, reference laboratories and radiology centers for results delivery saves money, which pays for a less expensive, more efficient shared infrastructure for all participating health data suppliers. Similarly, physician practices with EHRs may require only a single connection and interface to the HIE versus interfaces to each of the stakeholders. The cost savings related to interface work on each side can more than pay for the HIE infrastructure, including the ongoing savings to the data sources in no longer producing paper, operating their own fax servers and paying for courier services. HealthBridge in Greater Cincinnati excelled at this model, even taking over the paper printing and delivery for those not being delivered electronically. This central print model generates approximately $0.18 profit for the exchange for every printed result, whereas each hospital saves approximately $0.15 by having HealthBridge deliver it for them versus doing it themselves.

HIOs have been known to charge physicians an HIE connection fee to aid in their sustainability. Physicians typically have less ability to afford technology expenses than hospitals, and therefore, these fees tend to be low – in the range of $10 to $30 per month. However, in servicing large numbers of physicians, these fees can produce significant revenue sources for the HIO. If an HIO serving 600 physicians obtained $15 per month per physician, that HIO would be collecting $108,000 per year from those physicians alone.

Providing additional services (such as a web-based EHR) to physicians might significantly increase fees and generate additional revenues for the HIO. Prices for an interoperable, integrated clinical solution may be less than a typical cell phone bill. HIOs might profit by establishing volume license arrangements or hosting arrangements for these EHR or EHR lite solutions. However, ASP model EHRs may have disadvantages that limit their broad adoption, creating some risk to the HIO if a minimum volume is guaranteed to the EHR vendor. An HIO supplying an EHR lite may be able to provide fee-based clinical analytics to simplify provider and community reporting for quality measures to CMS (for meaningful use incentives), public reporting, and to inform the community about where its health care is good and where it needs to improve.

Physicians' fees may be absorbed by larger groups, such as IPAs, medical societies or other dues-paying organizations, but ultimately those fees are paid by the individual physicians. HMOs or other groups that contract with physicians to provide prepaid care for a set of patients often require specific health data communications connectivity between primary care, specialty physicians and institutional providers.

Physician utilization of the HIE is the prerequisite to all other revenue models. Without physician adoption, there is not sustainable HIE. Conversely, with high physician adoption rates, the opportunities for expanded participation and revenues are exponential. With high adoption rates, it is easy to attract the participation of public health, health plans and business coalitions. This advantage may be one of the reasons for the long-term success of HealthBridge, maximally reducing barriers to physician participation.

Health Plan or payer participation can be a key formula to sustainability. In the past decade, payers have come to the conclusion that a successful HIE may save them significant money when the HIO can demonstrate that exchange is:

- Reducing duplicate test reimbursements;
- Reducing adverse medical events from drug interactions;
- Reducing ER visits for chronically ill patients;
- Providing a platform for medical home initiatives; and
- Facilitating data collection for data quality and Health Care Effectiveness Data and Information Set (HEDIS) measurements.

The biggest hurdle, particularly in California, is the fragmentation of the commercial market. Payers are less willing to participate in HIE if they feel they are subsidizing their competition. The next biggest hurdle for enticing payers to help fund the ongoing HIO operations is the data sharing agreement. Historically, physicians and payers have been at odds on use of clinical data; physicians do not want to be unfairly rated or paid less based on insurers having access to this data, yet insurance companies can often aid in preventative care through their care management outreach if they have real time access to clinical data. A balance can be achieved, and the amount of money a payer will be willing to spend will be commensurate with what they can save. Payers will realize cost savings from the reduction in excess tests and adverse events facilitated by HIE. However, HIOs must be willing to objectively analyze health care delivery in their communities to document this savings, even when a shared savings model is not the chosen revenue model. Payers may save significantly more money if, for example, they can routinely prevent ER visits by their diabetic patients due to timely receipt of salient clinical member data through HIE. Even more money can be saved by the payers if the providers are given clinical decision support advice at the point of service so they are following best practices and not overlooking key patient data. Each HIO will have to determine the balance they can achieve prior to approaching the payers with proposals for participation.

Local and county public health departments can provide ongoing funding to the HIOs for making services they already pay for more efficient. For example, HIOs can easily provide public health automated and semi-automated reportable events operations from hospitals and physicians, which can replace their existing inefficient and slow paper processes. Additionally, robust HIOs can provide significant bio-surveillance and disease outbreak information to public health, which public health departments can pay for through their current funding for the same services. To reduce the burden on state and local agencies, public health departments at the state and local level can use cost savings to pay for additional costs incurred by supporting HIE.

Providing the necessary funding for HIE and dividing costs amongst stakeholders can be done in many ways. Some successful HIOs charge dues to their stakeholders, but apportion the costs commensurate with the ability to pay. For example, in an HIO where there is ample payer participation, the participation ratio may be something like 40% payers + 35% hospitals + 25% physicians. This formula is overly simplistic. In California, most care is not supplied on a percent of billed charges basis, which is the only fee structure to which the above formula might logically apply.

In most cases, HIOs have avoided transactional based fee models but there are exceptions. HIOs have been wise in realizing that it is necessary to demonstrate value up-front and preventing providers from determining that it is not worth sending out preliminary laboratory tests because they are charged by the test. Also, a payer will only pay where it is at risk for the payment. For example, an insurance carrier will not pay for costs avoided by its ASO customers. In addition, an insurance company will not pay where the facility benefits (makes a higher net profit) from avoided costs because it has undertaken less services to obtain its case rate. Many HIOs have preferred “all you can eat” models where participation fees are pre-ordained based on the size, type or ability of the organization to pay.

The most viable sustainable model for HIOs is to have broad based participation where stakeholders are charged fees or dues commensurate with the value they derive from the HIO combined with their ability to pay relative to other stakeholders. A complex model for access charges will be more complicated to manage than a simple one, and generally more costly to implement and maintain. Analysis remains to be done as to what structure, regardless of complexity, yields the most fair and acceptable result to participants.

In the course of doing business, Cal eConnect will develop a useful knowledge base, and will consider providing contracted services, either to the State or to HIE participants such as health systems. These services will complement the management of HIE services as a means of funding additional core services

and critical activities. Cal eConnect may offer assistance to HIOs in determining which model or combination of model(s) is most likely to be effective in their region. They may also assist HIOs by providing written support for those HIOs seeking to create improvement districts or other taxation authorities to raise needed funds from the local taxpayers, who ultimately benefit from effective HIE.

10.6.1 Approach to Developing a Sustainability Model

The following describes an 18-month Work Plan and activities to develop a sustainability model by quarter:

Table 16. Quarterly Plan for Developing A Sustainability Model

Quarter	Work Plan/Activities
1	Hire one staff person with accounting and financial analysis skills to develop and extend budget models for full life-cycle costing and manage daily accounting and reporting activities. Hire one staff person with skills to draft SOW, required project skills, procurement and contracting, and to hire and provide oversight and guidance to consultants, if needed. In addition to working with the financial staff to develop a sustainability model, support any governance-related procurements. These staff will work together with management and others (defined below) to develop surveys and RFIs. The objective is to collect information about and evaluate the various financial models currently in use for an ongoing revenue model to support costs that have been tested in the marketplace and are realistic. The objective is to identify those models that may be most effective for HIOs and models that best support State governance of HIE. Create an updated detailed budget narrative. Steps include: Finalize a GE staffing model; develop cost estimates for specific core services; update estimates for workgroup plans; update detailed budget narrative; and work with GE management and ONC to update the approved budget.

Quarter	Work Plan/Activities
2	Staff will work with advisory groups, CalOHII and other State employees to: 1. Develop a short survey that would list methods of payment or contribution by HIOs rated according to which is most to least desirable for the described HIE services; comments would be encouraged. The survey responses would be shared with HIE workgroups and known HIOs in the State. 2. Build on the California landscape inventory, possibly with a survey that updates and extends the survey work referenced in the technical architecture document. This would include identifying existing and potential new exchange networks that are developing partnerships that are considering becoming HIOs and their willingness to participate with HIE. 3. Develop RFI for HIE Core Services options. To encourage a broad range of options, the RFI should state that vendors are encouraged to respond with several solutions. These options might vary based on hosting environment and whether they are State owned and managed. Pricing for implementation and ongoing costs, such as maintenance and equipment upgrades should be included. Update cost estimates and budget with ONC as required.
3	The results of the payment and contribution survey responses would be totaled, comments grouped, results presented to management, working groups and HIOs, and next steps determined. The HIE landscape would be updated to determine ongoing gaps. Options for filling HIE gaps would be developed. All potential resources would be considered, including the California TeleHealth Network, Statewide Automated Welfare System (SAWS), DHCS Medi-Cal networks, tribal health care networks, the VA and DoD. The State would seek to collaborate before resolving to create or define HIE in a region with unmet need. Results will be shared with the HIE workgroups and HIOs in the state. Finally, results of the HIE RFI for Core Services would be consolidated and charted. If supported by Cal eConnect, project consultants will be hired to provide research on the pros and cons of each solution, with examples of State and local jurisdictions where each has been successful or failed, and identifying contributing factors. This might require interviews with representatives of those organizations. Results will be shared with the HIE workgroups and HIOs in the state.
4	Staff may discuss with one or more workgroups, hold stakeholder meetings, or a preferred sustainability method for HIOs and the State may be self-evident. HIOs will determine for themselves which sustainability model to use. Staff would conduct outreach to identified health care organizations in regions lacking HIOs and HIE. Staff will review RFI results for Core Services and identify the solutions and pricing that passed the viability tests in Quarter 3. Staff will compare options, including evaluating costs, to make recommendations to management. Recommendations will be shared with working groups and HIOs to ensure broad input, reducing the chance that assumptions are inaccurate or that vendors have over-promised.

Quarter	Work Plan/Activities
5	Staff will review and analyze the payment structures, develop budget models with this revenue information, and run models with the HIE cost information and governance costs. Staff will present options and cost models to management, the workgroups and HIOs for review and dissemination for public comment.
6	The sustainability model will be refined and finalized. Staff will continue to coordinate and support the expansion of HIE until there are either no gaps or the remaining gaps are inconsequential or cannot be covered.

10.6.2 Budget Narrative (Cost Estimates, Staffing Plans, Schedule of Tasks)

The budget amounts provided in the following sections reflect the suggested modifications based on this operational planning effort to the budget submitted to ONC as of February 1, 2010. These are provided as directional input. More narrative will be added as the line items are adjusted to reflect the actual staffing of the GE and the implementation plan that they develop. CHHS will require Cal eConnect to further refine the following cost estimates and budget over the next 90 days as part of their implementation plan.

10.6.3 Cal eConnect Cost Estimates

The budget for Cal eConnect will need to support staffing and resources.

Table 17. Budget for Cal eConnect (Years One through Four)

Cost	2010	2011	2012	2013	Total
GE Staff	$1,500,000	$1,500,000	$1,000,000	$750,000	$4,750,000
GE Benefit	$450,000	$450,000	$300,000	$225,000	$1,425,000
State Staff for Privacy and Security, Governance, Etc.	$534,456	$534,456	$534,456	$534,456	$2,137,824
State Benefits	$180,678	$180,678	$180,678	$180,678	$722,712
GE Travel	$98,333	$98,333	$98,333	$60,833	$355,832
State Travel	$20,334	$20,334	$20,334	$20,334	$81,336
GE Supplies	$105,750	$22,250	$27,750	$23,500	$179,250
State Supplies	$64,500	$20,050	$17,500	$17,500	$119,550
Contract Positions (legal, recruiter, consultant)	$1,106,500	$642,000	$496,500	$484,000	$2,729,000
Facilities and Other	$165,248	$162,748	$127,704	$109,438	$565,137
Governance Total:	**$4,225,799**	**$3,630,849**	**$2,803,255**	**$2,405,739**	**$13,065,641**

10.6.4 Patient Engagement Cost Estimates

The budget for Patient Engagement will need to support outreach activities. For detail on the activities of the Patient Engagement Workgroup, see Section 7, Patient and Consumer Engagement in HIE. The cost estimates for the activities detailed therein follow.

Table 18. Patient Engagement Cost Estimates

Cost	2010	2011	2012	2013	Total
Contractual $210,000 for engagement of a consumer relations firm to survey the population, design the campaign, and detail out the communication methodologies.	$200,000				$200,000
Full-time project manager with administrative and budget management support to manage the efforts, reporting to GE.		$77,300	$77,300	$77,300	$231,900
Materials: mailings, web campaigns, road shows, social media, meetings, etc to implement Communications Campaign as specified by consumer relations firm.	$100,000	$100,000	$75,050	$75,050	$350,100
Discretionary: meetings and outreach to influencers, key provider, community, and patient organizers who can become champions for HIE engagement.	$4500	$4500	$4500	$4500	$18,000
Patient Engagement Total:	**$304,500**	**$181,800**	**$156,850**	**$156,850**	**$800,000**

10.6.5 Provider Engagement Cost Estimates

The budget for provider engagement will need to support outreach activities. It is possible that this will become a line item in Cal eConnect budget; Cal eConnect should work closely with the RECs and DHCS on pooling resources for provider engagement activities. The staff and resources to meet this need will be the same as those for patient engagement and included in the budget outlined in Section 10.6.4.

10.6.6 Vulnerable and Underserved Populations Cost Estimates

In order to meet the needs of the various vulnerable and underserved populations, budget is being allocated to customize the communications plan and associated materials developed. The GE and its consultants will take those materials and work with multiple advocacy organizations across the state to develop the customizations and engage vulnerable and underserved populations.

Table 19. Vulnerable and Underserved Cost Estimates

Cost	2010	2011	2012	2013	Total
Consultant to manage customizations required to support the vulnerable and underserved populations.	$70,000	$70,000	$70,000	$70,000	$280,000

Cost	2010	2011	2012	2013	Total
Discretionary: meetings and outreach to influencers, key provider, community and patient organizers who can become champions for HIE engagement.	$5000	$5000	$5000	$5000	$20,000
Vulnerable and Underserved Total:	**$75,000**	**$75,000**	**$75,000**	**$75,000**	**$300,000**

10.6.7 Technical Services

The budget for technical services will need to include initial capital costs, fixed operating costs and variable operating costs. Because the technical processes should be running online, it is possible that cloud computing options offer zero capital costs, minimal fixed operating costs and variable costs, which are then proportionate to the services provided. In this way, the revenue received for offering these services should offset the costs. As the definition of services is yet to be confirmed, at the present time, the costs outlined below are estimates only. As one of the first steps in the core services procurement process, Cal e Connect will collect additional data, and will fully vet the resulting cost estimates in the RFP process.

Table 20. Technical Services Cost Estimates (Years One and Two)

Cost	2010	2011	2012	2013	Total
Equipment	$200,000	$100,000			$300,000
Contracts for State Level Core Services	$4,000,000	$2,000,000			$6,000,000
Contracts to Connect Immunization Registries	$500,000	$500,000			$1,000,000
Contract to Expand HIE Footprint	$5,000,000	$3,000,000			$8,000,000
Contract to Connect Existing HIOs	$3,000,000	$2,000,000			$5,000,000
Technical Services Total:	**$12,700,000**	**$7,600,000**	**$-**	**$-**	**$20,300,000**

10.6.8 Evaluation

In order to assess the effectiveness of Cal eConnect, HIE services statewide and each of the components individually mentioned above, resources will be allocated to baseline and ongoing measurements and metrics. Determination of which metrics to use shall be completed in year one.

Table 21. Evaluation Cost Estimates (Years One through Four)

Cost	2010	2011	2012	2013	Total
Evaluation Contract	$350,000	$175,000	$125,000	$126,000	$776,000
Audit	$75,000	$75,000	$75,000	$75,000	$300,000
Technical Services Total:	$425,000	$250,000	$200,000	$201,000	$1,076,000

10.7 Issue Resolution and Risk Mitigation

This section reviews issues and risk mitigation strategies relevant to all workgroups.

Table 22. Workgroup Issues and Risk Mitigation Strategies

Risk	Mitigation Strategies
Patients do not participate/interact with the HIE including recording their preferences, authorizing use, etc.	Patient criteria for success and metrics may be overly generalized, and should reflect the health status and accessibility of the target population on a segment by segment basis.
Vendors of Consumer systems (e.g. EHR, PHR, EHR), Care Management Applications, etc.) do not comply with integration and data sharing requirements of the HIE creating islands of PHI that are neither readily available to patients, available for comprehensive health view of the patient or available to be managed through master preferences and authorizations registered by patients in the HIE.	Some sort of patient-available identifier that clearly demonstrates the HIE compatibility and inclusion of PHI or other Health Information.
Hospitals and providers adopt systems that are incompatible with HIE systems, and therefore not be available for patient interactions through the HIE.	Identifying the HIE compliance (read, write, read/write) of a provider/physician/group.
Laboratories, pharmacies, ancillary providers, and other entities do not preserve downstream data preferences of consumers.	Cal eConnect will obligate all participants in HIE to observe privacy, security and data preferences of consumers through contractual agreements with enumerated remediation.
Subscription or access fees may be prohibitive for some providers or consumers to access HIE services.	Cal eConnect will determine a policy for grant assistance to enable universal access to the HIE.
Security of consumer equipment (personal computers, cell phones) in case of loss.	Identity verification on device required and/or ability to delete data remotely.
False positives or false negative matches of patient and data.	1) All incoming data is linked to originating data source, patient, and care giver leaving a detailed provenance to resolve the mis-matching of data. 2) Allow consumers to verify and correct data.
Not all remote monitoring devices have the ability to be networked	An explicit provision in Cal eConnect contractual agreements that clarifies that the hand entry of biometric readings into HIE connected applications and systems satisfies this requirement is needed.

Risk	Mitigation Strategies
Data integrity for vulnerable and underserved populations. (Example: many services provided to managed care members are carved out from managed care and provided through fee for service Medi-Cal.)	Real-time linking of data from behavioral health, dental, adult day health care, in-home supportive services, and CCS is critical to comprehensively manage patients. State and federal privacy laws may limit data linkage. Federal law and regulations limit the exchange of data without the express written consent of the patient.
The behavioral health population is complicated by the fact that multiple (and distinct) registration information profiles exist simultaneously in multiple databases.	Create data-stamping standards for creating patient profiles and notifications to other providers to cross-reference and combine multiple profiles for the same patient.
Fraud and abuse of HIE services.	Cal eConnect will maintain a strong fraud and abuse policy that is referenced explicitly in all contractual agreements, with penalties for noncompliance.
Breach of protected data, violation of privacy standards, unauthorized disclosure of PHI.	Working with CalOHII and CalPSAB, Cal eConnect will develop a plan for a potential breach of information and factor into its budget the costs of disclosure expenses related to customer contact and public response.
A local HIO or regional HIO has a data breach.	Cal eConnect can provide consulting help and remediation expenses such as technology and training. Cal eConnect may also want to consider an oversight/audit role for ensuring that the basic legal and operational processes are in place to deal with disclosure and breaches of information by the HIO.
Physicians may not adopt systems that are compatible with HIE systems, and therefore not be available for patient interactions through HIE.	Identifying the HIE compliance (read, write, read/write) of a provider.

10.8 Finance Controls and Reporting

10.8.1 Readiness Requirements for Receipt of Federal Stimulus Funds

On March 27, 2009, the Governor's Executive Order S-02-09 created the California Recovery Task Force to take the lead responsibility for establishing a systematic method for collecting, creating reporting standards and centrally locating all information regarding the uses, status, outcomes and accountability of ARRA funds received by California.

As such, all State agencies receiving ARRA funds including CHHS will be responsible for ensuring the necessary systems are in place to provide proper oversight, accounting, reporting and project management controls to ensure all ARRA funds are used efficiently and for the intended purposes.

10.8.1.1 Readiness Factors

As requested by the California Recovery Task Force, the Department of Finance, Office of State Audits and Evaluations (OSAE), recently reviewed six state agencies' readiness to receive and administer ARRA funds, with specific emphasis on their accountability and oversight processes. Based on these reviews and guidance contained in ARRA, the following core readiness areas have been identified as essential to ensure adequate oversight related to ARRA funding:

1. Oversight and Fraud Prevention

    - Agencies are to perform an ARRA-related risk assessment in order to identify and mitigate potential risks.

    - Agencies are to provide fraud awareness training to its employees and its recipients to make them aware of potential vulnerabilities of ARRA funds to fraudulent use.

2. Grants Management and Accountability

    - Agencies are to provide training to recipients regarding proper grant management and accountability.

    - Agencies are to develop standard grant templates with specific ARRA language and written guidance for recipients.

    - Agencies are to develop tracking mechanisms for specific ARRA data elements, including number of jobs created.

3. Reporting Requirements

    - Agencies must be prepared to separately track the receipt and disbursement of ARRA funds in their accounting systems.

    - Agencies must develop and maintain systems to track and identify administrative costs associated with administering ARRA funds.

4. Transparency

    - Agencies are to develop clear and informative information reporting systems.

Each State agency receiving ARRA funds must review and at a minimum implement the above readiness factors prior to the receipt and disbursement of funds.

10.8.1.2 Recent Readiness Review Concerns

The recent reviews of six State agencies' readiness to receive and administer ARRA funds identified the following concerns:

- Departments found that additional federal requirements for existing programs are creating unanticipated challenges.
- There is an increased need to improve oversight and controls by identifying and mitigating departmental risks related to ARRA on an ongoing basis.
- There is a need to identify high-risk sub-recipients for additional training and monitoring.
- Agreement language must be developed, requiring grantees to comply with changing ARRA requirements.
- Statewide standards for the form and content of reporting ARRA information must be developed and communicated.
- A statewide plan to coordinate and communicate data collection efforts among the various ARRA funded departments must be developed and communicated.
- Departments expressed the need to coordinate all audit efforts to prevent or minimize duplication.

It is recommended that all departments continue coordination efforts with State and federal authorities to obtain clear guidance over allowable administrative and overhead expenses, oversight roles and responsibilities for direct funding to localities, if applicable, and additional ARRA specific reporting data requirements.

10.8.1.3 Potential Risks of Federal Audit Exceptions

The readiness reviews and the guidance provided in this bulletin are intended to assist State agencies in identifying areas of potential risk, and affording agencies the opportunity to take the necessary corrective actions to mitigate identified risks in order to ensure compliance with all federal requirements.

Failure to comply with ARRA requirements may result in potential federal audit exceptions and the repayment of federal funds, with a potential negative impact on State general fund.

10.8.1.4 Additional Readiness Reviews

Additional agency/department reviews will be performed to assess readiness. Upon completion of readiness reviews, agencies/departments must submit a Corrective Action Plan (CAP) to address any concerns identified. CAPs are to be submitted electronically directly to OSAE within 30 days of notice. CAPs are to be submitted to: RecoveryAct.OSAE@dof.ca.gov.

Each agency or department will be contacted in the near future to schedule a readiness review.

10.8.1.5 Guidance and Future Bulletins

As previously stated, the above general guidelines and instructions are intended to assist agencies/departments in complying with ARRA requirements to ensure proper accountability and reporting. The above guidance is not all encompassing as federal requirements continue to evolve.

10.8.2 Accounting Requirements for Recovery Act Funds

Departments who have or will receive ARRA funds must follow the procedures outlined below and work with the State Controller's Office (SCO) to establish unique Federal Trust Fund account codes.

Pursuant to OMB Circular A-133, Subpart C, Section .310, all auditees are required to prepare a Schedule of Expenditures of Federal Awards (SEFA). Because of limitations in its automated accounting system, the State is unable to provide the required SEFA. Instead, the Department of Finance, OSAE, prepares a Schedule of Federal Assistance (Schedule), which shows total cash receipts, rather than expenditures by program. The Bureau of State Audits uses this Schedule to determine which federal programs are major programs for single audit purposes.

For fiscal year 2008-09, the OMB is requiring States to report ARRA expenditures separately in the SEFA. As noted above, for single audit purposes, the State will be reporting total receipts, rather than expenditures. OSAE utilizes the SCO Federal Trust Fund Report (also known as Report 50) to capture all federal receipts for the fiscal period. However, for fiscal year 2008-09, the ARRA receipts were not reported separately to SCO by State departments.

As a result, on August 5, 2009, OSAE requested all State departments provide all ARRA receipts (on a cash basis). State departments should report cash received as a recipient, which is defined as a non-

federal entity that expends federal awards received directly from a federal awarding agency to carry out a federal program. This request was made via email and was due August 18, 2009. For future fiscal years, it is anticipated the SCO's Report 50 will be able to capture the required federal receipts with ARRA receipts segregated. Please note: This request for ARRA receipts (cash basis) is not related to the ARRA reporting requirements per Section 1512.

In order to ensure ARRA receipts are tracked separately from other Federal awards and to facilitate development of the Schedule for fiscal year 2009-10, SCO is capturing ARRA receipts by establishing unique Federal Trust Fund account codes. ARRA accounts are designated a "6" series in the project number (P/N) field. This enables SCO to track the receipt of ARRA funds separately from other federal funds.

The SCO is designating a "6" series in the P/N field on ARRA accounts that were previously established without the "6" series P/N number and notifying agencies via memo of the new account coding. In these cases, the SCO is reclassifying the receipts to the amended ARRA account.

If a department previously submitted a Request to Establish or Amend Federal Trust Fund Account (AUD 10a) for ARRA funds without including any indication that the federal program is ARRA related, the department must inform SCO of the account code so SCO can validate the federal program has been set up as an ARRA account.

For departments that did not establish an ARRA account, but used an existing account for ARRA money, an AUD 10a form must be submitted to SCO to request an ARRA specific account. Departments will be notified by memo after SCO establishes the ARRA account. Upon receipt of the memo, departments must submit a Controller's Receipt (CR) correction to reclassify receipts to the new ARRA account.

Instructions specific to establishing an ARRA Federal Trust Fund account are as follows (see highlighted areas on attached sample form):

- Account Title: Include "ARRA" at the end of the account title.

- Federal Program Name: The Federal program listed in the Catalog of Federal Domestic Assistance (CFDA). The program name should correspond to the Federal Catalog Number (FCN) in Box 3A of the AUD 10a form. This is a five digit number used by the Federal Government to identify its various programs.

- P/N: The SCO is using this field as an identifier for ARRA funds. A "6" series P/N code is assigned by the SCO.

The department should use the ARRA specific Federal Trust Fund account code on all accounting transactions related to ARRA funds. The AUD 10a form is available on SCO website at: www.sco.ca.gov/Files-ARD/State_aud10a.pdf. Completed forms are sent to SCO, Division of Accounting and Reporting, for approval.

In addition to SCO's efforts to establish unique FCNs to track the receipt of ARRA funds, departments are reminded that both receipts and expenditures need to be tracked separately for ARRA funds in departmental accounting systems.

For departments using the California State Accounting and Reporting System (CALSTARS) and receiving ARRA funds, this may require the establishment of the Federal Catalog/SCO Project Number in the Federal Catalog Descriptor (D40) Table, a Project in the Project Descriptor (D42) Table, a Project/Work Phase in the Project Control (PC) Table (which references the D40 and D42 Tables), and a Program Cost Account (PCA) in the Program Cost Account Table (which references the PC Table). In cases where a department has already charged both non-ARRA funds and ARRA funds to one Federal Catalog/SCO Project number, the ARRA funds may need to be separated through adjusting entries. For more information about the Federal Trust Fund Accounting in CALSTARS, please refer to the CALSTARS Procedures Manual Volume 3, Chapter 10, which is available on the CALSTARS website: www.dof.ca.gov/html/calstars/calsdocs/manual/VOLUME-3/v3ch10.pdf.

Departments who are not on CALSTARS should also ensure that they are adequately tracking both receipts and expenditures for ARRA funds. Adequate accounting controls shall be established to ensure that ARRA funds are accurately reflected in the accounting systems. Departments should establish monthly reviews and reconciliations of ARRA receipts and expenditures.

Departments are also reminded that they are required to submit data necessary to comply with Section 1512 of the ARRA by using the California ARRA and Accountability Tool (CAAT). It is important that departments maintain accounting records to support information submitted to CAAT.

Please see Recovery Act Bulletins 09-12 and 09-13 for additional information on ARRA reporting. Recovery Act Bulletins are available on California's Economic Recovery portal at: www.recovery.ca.gov/HTML/About/supportingdocuments.shtml.

If you have any general questions, please contact the Fiscal Systems and Consulting Unit hotline at (916) 324-0385 or e-mail: fscuhotline@dof.ca.gov. For questions about AUD 10a or CR processing, please contact SCO accounting analyst.

10.8.3 The California ARRA and Accountability Tool (CAAT)

CAAT was developed as an on-line data filing tool, allowing California State departments receiving ARRA funds to provide required data about the funds received and disbursed. Departments have principal responsibility for the quality of the information provided, including the information provided by sub-recipients. As stated in OMB Memorandum M-09-21:

> "Data quality is an important responsibility of key stakeholders identified in the Recovery Act. Prime recipients, as owners of the data submitted, have the principal responsibility for the quality of the information submitted."

Consequently, departments (prime recipients) are responsible for directing their sub-recipient organizations to provide ARRA data in accordance with the schedule previously referenced, and for validating the quality of data submitted. In addition, only the individuals authorized by the Director or other entitled head of their organization can approve ARRA data for inclusion in State and federal reports.

As Stated in RAB 09-12, California is a centralized reporting State for ARRA. As such, all State department data will be collected and submitted through the CAAT. Therefore, departments must NOT register at FederalReporting.com as suggested by Recovery.gov. ALL Departmental reporting will be done through the CAAT. Departments should also inform their sub-recipients not to register at www.FederalReporting.gov. All sub-recipient data will be collected through the CAAT as part of the departments' ARRA data submission.

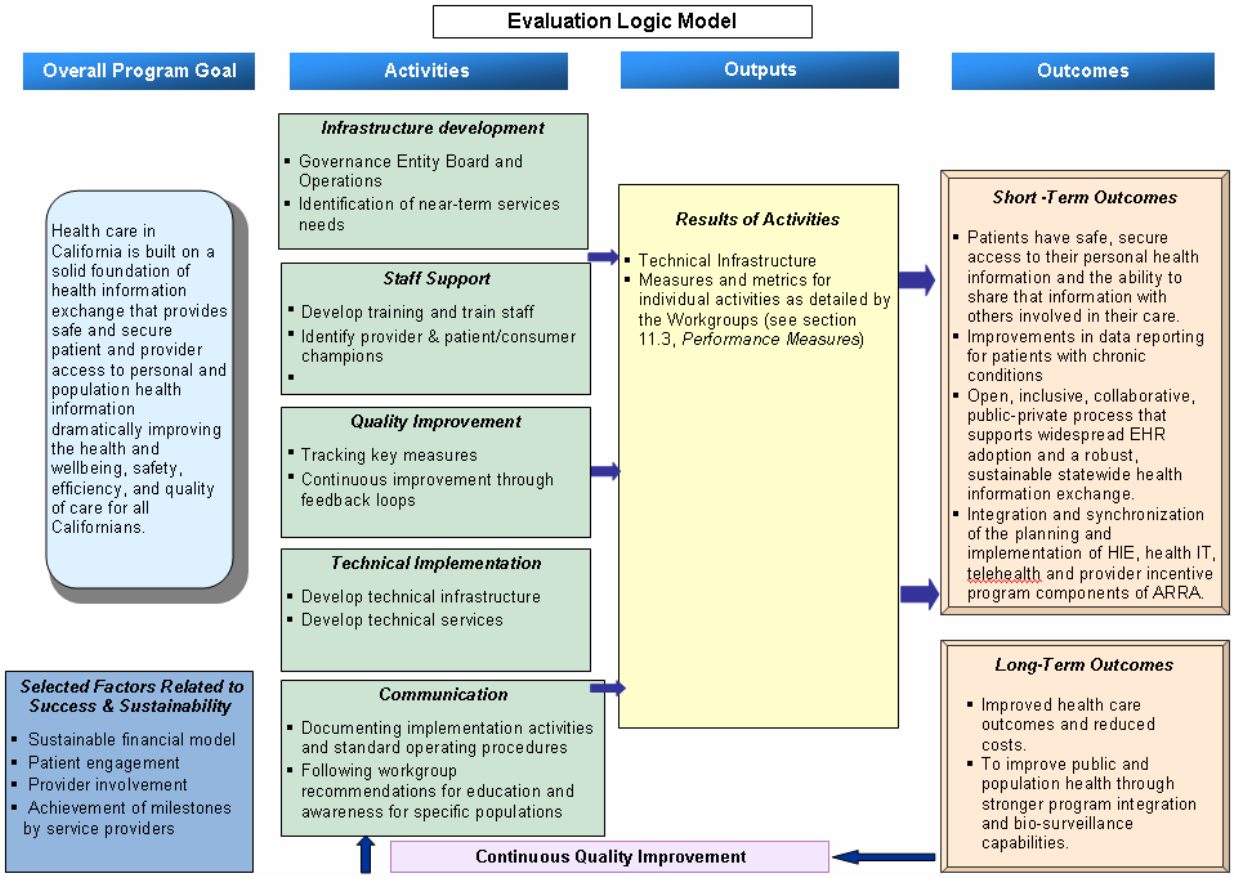
11. Evaluation

11.1 Framework

Achieving HIE goals is a systems-focused effort, involving multiple stakeholders and incremental processes. Additional work must be done to define the measures and mechanisms that will be used to assess the near term effects and systemic impact of HIE development efforts. ARRA highlights the importance of supporting health care system improvements, such as promoting care coordination and improving public health.

California is dedicated to demonstrating that progress is made toward these ends by employing a robust evaluation program. The goal of the evaluation effort is to demonstrate the economic and quality value of HIT investments and the effects of investments on providers and consumers, determine what is working and what needs to be improved, disseminate these lessons learned broadly within the state as well as at a regional and national level, and iteratively refine HIT in the state. To evaluate outcomes, the State, Cal eConnect and selected Evaluator will follow the logic model outlined below:

Figure 6. Evaluation Logic Model



11.2 Process

CHHS will define the details of the evaluation process, and will work collaboratively to provide oversight and guidance to the independent evaluator. In addition, the State will leverage technical assistance offered from the federal government. At a minimum, the evaluation process will include:

- Continuous evaluation, reassessment and revision of the State Strategic and Operational Plans,
- An annual evaluation that will be coordinated with the national program evaluation,
- Reporting requirements specified in the State HIE Cooperative Agreement program plus additional reporting requirements identified during the development of the Operational Plan,
- Performance metrics specified in the State HIE Cooperative Agreement program plus additional performance metrics identified during the development of the Operational Plan, and
- Coordination with national program evaluation and leverage technical assistance from the federal government for the California evaluation in an effort to implement lessons learned that will ensure appropriate and secure HIE resulting in improvement in quality and efficiency.

11.2.1 Procurement and Budget for Evaluator

California will allocate a portion of the funding received through the State HIE Cooperative Agreement Program to an independent evaluation process. Likewise, as the long-term funding model is defined, it will include a mechanism to fund on-going evaluation and analysis. In 2010, CHHS will draft procurement requirements, review with Legal for compliance, and revise as needed. The draft RFP for an entity to serve as the Evaluator will be sent for Legal review in the fall, and released in the third calendar quarter. A contract is expected to be awarded by the end of calendar year 2010.

11.2.2 Reporting and Evaluation Cycles

Cal eConnect will oversee a series of four evaluation cycles. The first Evaluation period is a "mini-period," with three phases occurring each per month: data collection in July; data analysis in August; and evaluation reporting in September 2010.

The second evaluation period begins with a two-week period of refining the evaluation criteria based on the reporting from the inaugural cycle, then proceeding through the same three phases; with the entire evaluation period lasting one year (from October 2010, through September 2011.) The third evaluation

period begins immediately following, in October 2011, lasting one year (through September 2012.) The fourth evaluation period follows the same pattern of four phases, lasting from October 2012, through September 2013.

11.3 Performance Measures

Performance measurement is a critical element of continual improvement. As such, the measures will necessarily evolve over time, and efforts will be refocused on areas of need. This initial set of measures is intended to establish state-specific and national perspectives on the degree of provider participation in HIE enabled State level technical services.

As required by the State HIE Cooperative Agreement program, the Evaluator will be responsible for evaluating the following elements:

- Has targeted degree of participation in HIE-enabled shared HIE services been achieved? If not, what is the remediation strategy?
- Has the organization developed and implemented financial policies and procedures consistent with State and federal requirements?
- Does the organization receive revenue from both public and private organizations?
- What proportion of the sources of funding to advance HIE are obtained from federal assistance, State assistance, other charitable contributions, and revenue from HIE services?
- Of other charitable contributions listed above, what proportion and dollar amounts of funding comes from health care providers, employers, health plans, and others?
- Has the organization developed a business plan that includes a financial sustainability plan?
- Does the governance organization review the budget with the oversight board on a quarterly basis?
- Does the recipient comply with the Single Audit OMB requirements?
- Is there a secure revenue stream to support sustainable business operations throughout and beyond the performance period? If so, how long will the sustainable revenue stream last?

During the Operational Planning process, each of the public workgroups developed performance measures to evaluate achievement of objectives above and beyond what is required by the ONC guidance. A description of those measures follows.

11.3.1 Patient Engagement Performance Measures

To address performance measures for patient engagement, a Metrics and Measurement Subcommittee of the Patient Engagement Workgroup convened with the objectives of developing a common set of metrics that crosses all populations with follow up development of incremental metrics that may be useful for unique populations.

The Metrics and Measurement Subcommittee included recommendations that support the adherence to metrics, e.g., a recommendation that providers be reimbursed. Metrics adopted will measure the percentage of the population interacting with the system, with the understanding that patient engagement is divorced from enforcement and outcomes.

The Metrics and Measurement sub-classifications will comprise four layers:

- Infrastructure growth as measured by rate of adoption;
- Effectiveness and efficiency of process;
- Data availability and accessibility; and
- Quality of data and response times.

The proposed evaluation framework is described in the tables in Appendix 17.

11.3.2 Vulnerable and Underserved Populations Performance Measures

To ensure coordination and active participation in HIE services from representatives of organizations and agencies that serve the needs of vulnerable and underserved populations, the following metrics have been proposed to Cal eConnect. The first group applies to all populations; the next groups is segmented by specific need.

- Attendance at regular meetings with stakeholders,
- The completion of an Operational Plan in 12-18 months, and

- The identification of funding streams to sustain the plan.

For rural and Indian health services, the measurement is the number of communities that enter and complete the RHITC program.

For all other vulnerable and underserved populations, metrics are:

- Drawdown of meaningful use incentive payments by providers serving the vulnerable and underserved populations,
- Comparing expected population distributions, and
- Outreach to provider groups that are not well represented in MU and HIE.

11.3.3 Technical Infrastructure Performance Measures

TWG and TAC developed a set of evaluation questions related to the goals and principles of the workgroup. Cal eConnect and Evaluator will work to develop specific measures for the technical performance of the HIE.

- Is the statewide technical architecture for HIE developed and ready for implementation according to HIE model(s) chosen by the governance organization?
- Does statewide technical infrastructure integrate State-specific Medicaid management information systems?
- Does statewide technical infrastructure integrate regional exchanges?
- How many and what proportion of health care providers in the State are able to send or receive electronic health information using components of the HIE Technical infrastructure?
- How many and what percentage of providers with EHRs is achieving meaningful use utilizing State HIE services?

11.3.4 Cal eConnect Performance Measures

Cal eConnect will have a set of performance measures for its own convening, coordinating, and managing functions; and is additionally responsible for the performance of Business and Technical Operations and

adherence to Legal and Policy Requirements. Throughout the planning process, the following questions were developed to guide the Evaluator in assessing whether Cal eConnect is meeting key milestones:

- What proportion of the governing organization is represented by public stakeholders?
- What proportion of the governing organization is represented by private sector stakeholders?
- Does the governing organization represent government, public health, hospitals, employers, providers, payers and consumers?
- Does the State Medicaid agency (DHCS) have a designated governance role in the organization?
- Has the governing organization adopted a strategic plan for statewide HIT?
- Has the governing organization approved and started implementation of an Operational Plan for statewide HIT?
- Are governing organization meetings posted and open to the public?
- Do regional HIE initiatives have a designated governance role in the organization?
- Is technical assistance available to those developing HIE services?
- What percentage of the State does not yet have access to HIE services?
- How many HIOs have been assisted by Cal eConnect?
- How many HIOs have failed and for what reason(s)?
- How do the forecasted number of transactions for each shared service compare with their actual use?
- How many educational and outreach sessions has Cal eConnect performed and how many individuals attended?
- How effective was the marketing effort to consumers and providers according to the metrics outlined in the Communications Plan?
- Is the statewide governance organization monitoring and planning for remediation of HIE as necessary throughout the State?

- What percent of health care providers has access to broadband?
- What statewide shared services or other statewide technical resources are developed and implemented to address business and technical operations?
- Has the governance organization developed and implemented privacy policies and procedures consistent with State and federal requirements?
- How many trust agreements have been signed?
- Do privacy policies, procedures and trust agreements incorporate provisions allowing for public health data use?
- Identify and inform CalPSAB of privacy and security policies which may need to be amended when it is not feasible to implement or operationalize the policy.

12. Acknowledgements

The operational plan would not have been written were it not for the hard work and time commitment of hundreds volunteers led by dedicated co-chairs and supported by the tireless contributions of workgroup consultants and State staff. Invaluable contributions of resources were received from LA Care Health Plan, The California Endowment and the California HealthCare Foundation. This could not have been done without their generous support.

12.1 Co-Chairs

Workgroup co-chairs spent hours of every week in workgroup calls and Operations Team meetings; we are grateful and indebted to their service and commitment: Steve Barrow, Scott Cebula, Albert Chan, Rim Cothren, Steven Henry, Mike Kirkwood, Laura Landry, Stephanie Oprendek, Larry Ozeran, Wayne Sass and Larry Stofko.

Enough cannot be said about the staff and consultants who managed the workgroups, hosted our summit, stood up and supported websites, wikis and listservs. Many midnight deadlines came and went, and all were hit – a few just barely.

12.2 Consultants and Staff

Consultants and Staff included Tim Andrews, Lisa Ashton, Lynn Barr, Bill Bernstein, Scott Christman, Eva Coblentz, Larry Dickey, Gwyn Doebbert, Amanda Goltz, Kathleen Delaney-Greenbaum, Bobbie Holm, Peter Hung, Alex Kam, Alana Ketchel, Timathie Leslie, Julie Murchinson, Kim Ortiz, Joseph Ray, Christine Schmoeckel, Elaine Scordakis, Linette Scott and Walter Sujansky.

Special thanks to Nova Stewart and OCPRHIO for securing a location and supporting our Summit, and for Eileen Moscaritolo at CalOptima for helping to make it happen. The California eHealth Collaborative and CalRHIO also must be recognized for the effort and work they have done to advance health information exchange goals in the state, support this process, and work towards the establishment of Cal eConnect. The founding co-chairs of Cal eConnect, Don Crane and David Lansky have gone above and beyond the call of duty.

Finally, none of this would be possible without the leadership of Secretary Kim Belshé and Undersecretary Joe Munso. Their faith in and commitment to this process has kept it true.

Appendix 1: Glossary

American Recovery and Reinvestment Act of 2009 (ARRA): is a $787.2 billion stimulus measure, signed by President Obama on February 17, 2009, that provides aid to States and cities, funding for transportation and infrastructure projects, expansion of the Medicaid program to cover more unemployed workers, Health IT funding, and personal and business tax breaks, among other provisions designed to "stimulate" the economy.

Centers for Medicare and Medicaid Services (CMS): is a federal agency within the United States Department of Health and Human Services that administers the Medicare program and works in partnership with State governments to administer Medicaid, the State Children's Health Insurance Program (SCHIP), and health insurance portability standards.

Certification Commission for Healthcare IT (CCHIT): is a recognized certification body (RCB) for electronic health records and their networks. It is an independent, voluntary, private-sector initiative, established by the American Health Information Management Association (AHIMA), HIMSS, and The National Alliance for Health Information Technology.

Consent: The Health Insurance Portability and Accountability Act Privacy Rule sets out two types of permission that are used to permit a covered entity to use or disclose protected health information: consent and authorization. A written "authorization" is required in certain circumstances, including for most disclosures of psychotherapy notes; to disclose health information for "marketing"; and for uses and disclosures that are not otherwise required or permitted by the privacy regulation. The Privacy Rule, however, generally permits a covered entity to use and disclose protected health information without an individual's authorization for treatment, payment and health care operations, and certain other specified purposes.

The Privacy Rule includes detailed requirements for the authorization form that must be used to obtain authorization when required. All authorization forms must contain certain core elements, including:

- A specific description of the information to be used or disclosed and the purposes of the use or disclosure;
- The identity of the person or class of persons authorized to make the requested use or disclosure;

- The identity of the person or class of persons to whom the covered entity may make the requested use or disclosure;
- A Statement of the person's right to revoke the authorization; and
- The signature and date of the authorization.

A general "consent" is permitted but not required for use or disclosure of information for treatment, payment, and health care operations. Covered entities that choose to obtain a patient's consent for use or disclosure of information for treatment, payment, and health care operations have complete discretion in designing their consent form and process. The regulation does not define the term "consent" and does not specify any requirements for the content of consent forms.

Some types of records require a different consent than HIPAA. Additional requirements for a legally effective consent may also be contained in state law or statutes like the federal Confidentiality of Alcohol and Drug Abuse Patient Records Act.

Consumer: the universe of patients or potential patients; any individual who has consumed a health product or service or is likely to require attention from health service providers at some point in his or her life span.

Electronic Health Record (EHR): As defined in the ARRA, an Electronic Health Record (EHR) means an electronic record of health-related information on an individual that includes patient demographic and clinical health information, such as medical histories and problem lists; and has the capacity to provide clinical decision support; to support physician order entry; to capture and query information relevant to health care quality; and to exchange electronic health information with, and integrate such information from other sources.

Electronic Prescribing (e-Prescribing): A type of computer technology whereby physicians use handheld or personal computer devices to review drug and formulary coverage and to transmit prescriptions to a printer or to a local pharmacy. E-prescribing software can be integrated into existing clinical information systems to allow physician access to patient-specific information to screen for drug interactions and allergies.

Eligible Provider: as defined in ARRA, eligible providers include physicians, dentists, nurse mid-wives and nurse practitioners, or physician assistants (practicing in a federally qualified health center or rural health clinic led by a physician assistant.)

Family: persons designated by a consumer as their personal representative to be entitled to access the consumer's electronic records through HIE. (In the case of a minor, persons deemed by the State to be responsible for that individual.)

Federal Communications Commission (FCC): is the United States government agency charged with regulating interstate and international communications by radio, television, wire, satellite and cable.

Federally-Qualified Health Centers (FQHCs): are "safety net" providers such as community health centers, public housing centers, outpatient health programs funded by the Indian Health Service, and programs serving migrants and the homeless. FQHCs provide their services to all persons regardless of ability to pay, and charge for services on a community board approved sliding-fee scale that is based on patients' family income and size. FQHCs are funded by the federal government under Section 330 of the Public Health Service Act.

Governance Entity (GE): For the State of California, the Governance Entity is the State Designated Entity. (See definition for State Designated Entity.) In California, the GE is Cal eConnect.

Health Consumer: an individual who self-selects for interest in health-related information, for participation in health-related groups or electronic conversations, for accessibility to marketing of health-related products.

Health Information Exchange (HIE): As defined by the Office of the National Coordinator and the National Alliance for Health Information Technology (NAHIT), Health Information Exchange means the electronic movement of health-related information among organizations according to nationally recognized standards.

Health Information Technology (Health IT or HIT): As defined in the ARRA, Health Information Technology means hardware, software, integrated technologies or related licenses, intellectual property, upgrades, or packaged solutions sold as services that are designed for or support the use by health care entities or patients for the electronic creation, maintenance, access, or HIE.

Health Information for Economic and Clinical Health (HITECH) Act: collectively refers to the health information technology provisions included at Title XIII of Division A and Title IV of Division B of the ARRA.

Health Insurance Portability and Accountability Act (HIPAA): was enacted by Congress in 1996. Title I of HIPAA protects health insurance coverage for workers and their families when they change or

lose their jobs. Title II of HIPAA, known as the Administrative Simplification (AS) provisions, requires the establishment of national standards for electronic health care transactions and national identifiers for providers, health insurance plans, and employers. The Administration Simplification provisions also address the security and privacy of health data. The standards are meant to improve the efficiency and effectiveness of the nation's health care system by encouraging the widespread use of electronic data interchange in the U.S. health care system.

Health Information Organization (HIO): An organization that oversees and governs the exchange of health-related information among organizations according to nationally recognized standards.

Health care Information Technology Standards Panel (HITSP): A multi-stakeholder coordinating body designed to provide the process within which stakeholders identify, select, and harmonize standards for communicating and encouraging broad deployment and exchange of health care information throughout the health care spectrum. The Panel's processes are business process and use-case driven, with decision making based on the needs of all NHIN stakeholders. The Panel's activities are led by the American National Standards Institute (ANSI), a not-for-profit organization that has been coordinating the U.S. voluntary standardization system since 1918.

Interface: A means of interaction between two devices or systems that handle data.

Interoperability: Interoperability means the ability of health information systems to work together within and across organizational boundaries in order to advance the effective delivery of health care for individuals and communities.

Medi-Cal: Medi-Cal is California's Medicaid program. This is a public health insurance program which provides needed health care services for low-income individuals including families with children, seniors, persons with disabilities, foster care, pregnant women, and low income people with specific diseases such as tuberculosis, breast cancer or HIV/AIDS. Medi-Cal is financed equally by the State and federal government.

Meaningful EHR User: As set out in the ARRA, a Meaningful EHR user meets the following requirements: (i) use of a certified EHR technology in a meaningful manner, which includes the use of electronic prescribing; (ii) use of a certified EHR technology that is connected in a manner that provides for HIE to improve the quality of health care; and (iii) use of a certified EHR technology to submit information on clinical quality and other measures as selected by the Secretary of HHS.

Nationwide Health Information Network (NHIN): A national effort to establish a network to improve

the quality and safety of care, reduce errors, increase the speed and accuracy of treatment, improve efficiency, and reduce health care costs.

Notification: While the term notification is not directly contemplated in Health Insurance Portability and Accountability Act, the concept of providing notice of privacy practices is. The Privacy Rule requires a covered entity to provide individuals with a written notice describing the entity's privacy practices. Health plans are required to give notice at enrollment and to notify individuals every three years that the privacy practices notice is available. Providers that have a direct treatment relationship with an individual are only required to give notice at the date of the first service delivery; and except in emergency circumstances, must make a good faith effort to obtain a written acknowledgment from the individual of receipt of the notice. Providers must also have notice posted on the premises. Both plans and providers have special notice requirements if their privacy practices change. Clearinghouses acting as business associates of another covered entity are not required to give notice to patients. The notice must include:

- A description of an individual's rights with respect to protected health information and how the individual may exercise those rights;
- The legal duties of the covered entity;
- A description of the types of uses and disclosures of information that are permitted, including those that are permitted or required without the individual's written authorization;
- How an individual can file complaints with the covered entity and the Secretary of HHS;
- How the covered entity will provide the individual with a revised notice if the notice is changed;
- A contact person for additional information; and
- The date on which the notice is in effect.

Office of the National Coordinator (ONC): serves as principal advisor to the Secretary of HHS on the development, application, and use of health information technology; coordinates HHS's health information technology policies and programs internally and with other relevant executive branch agencies; develops, maintains, and directs the implementation of HHS' strategic plan to guide the nationwide implementation of interoperable health information technology in both the public and private health care sectors, to the extent permitted by law; and provides comments and advice at the request of

OMB regarding specific Federal health information technology programs. ONC was established within the Office of the Secretary of HHS in 2004 by Executive Order 13335.

Patient: any consumer known to health service providers because care has been provided, or planned.

Personal Health Information (PHI): As defined by HIPAA, any information in the medical record or designated record set that can be used to identify an individual and that was created, used, or disclosed in the course of providing a health care service such as diagnosis or treatment.

Privacy: In December 2008, the Office of the National Coordinator for Health IT released its "Nationwide Privacy and Security Framework For Electronic Exchange of Individually Identifiable Health Information," ("Framework") in which it defined privacy as, "An individual's interest in protecting his or her individually identifiable health information and the corresponding obligation of those persons and entities that participate in a network for the purposes of electronic exchange of such information, to respect those interests through fair information practices." This language contrasts with the definition of privacy included in the National Committee on Vital and Health Statistics' (NCVHS) June 2006 report, entitled, "Privacy and Confidentiality in the Nationwide Health Information Network." In its report, NCVHS recommended the following definition for "privacy": "Health information 'privacy' is an individual's right to control the acquisition, uses, or disclosures of his or her identifiable health data."

Regional Health Information Organization (regional HIO): A health information organization that brings together health care stakeholders within a defined geographic area and governs health information exchange among them for the purpose of improving health and care in that community.

Regional Health Information Technology Extension Centers (RHITECs): As set out in the ARRA, Regional Health Information Technology Extension Centers will be established and may qualify for funding under ARRA to provide technical assistance and disseminate best practices and other information learned from the Health Information Technology Research Center to aid health care providers with the adoption of health information technology.

State-Designated Entities (GEs): As defined in the ARRA, State-Designated Entities (GEs) may be designated by a State as eligible to receive grants under Section 3013 of the ARRA. To qualify as an GE, an entity must be a not-for-profit entity with broad stakeholder representation on its governing board; demonstrate that one of its principal goals is to use information technology to improve health care quality and efficiency through the authorized and secure electronic exchange and use of health information; adopt

nondiscrimination and conflict of interest policies that demonstrate a commitment to open, fair, and nondiscriminatory participation by stakeholders; and conform to other requirements as specified by HHS. The State Designated Entity in California is Cal eConnect.

Security: The Health Insurance Portability and Accountability Act Security rule defines "Security or Security measures" as "encompass[ing] all of the administrative, physical, and technical safeguards in an information system.

Two-Factor Authentication: An authentication factor is a piece of information and process used to authenticate or verify the identity of a person or other entity requesting access under security constraints. Two-factor authentication is a system wherein two different factors are used in conjunction to authenticate. Using two factors as opposed to one factor generally delivers a higher level of authentication assurance. Two-factor authentication typically is a signing-on process where a person proves his or her identity with two of the three methods: "something you know" (e.g., password or PIN), "something you have" (e.g.,. smartcard), or "something you are" (e.g., fingerprint or iris scan).

U.S. Department of Health and Human Services (HHS): is the federal government agency responsible for protecting the health of all Americans and providing essential human services. HHS, through CMS, administers the Medicare (health insurance for elderly and disabled Americans) and Medicaid (health insurance for low-income people) programs, among others.

Appendix 2: Acronyms Used

ARRA:	American Recovery and Reinvestment Act
ASTM:	American Society for Testing and Materials
CAAT:	California ARRA and Accountability Tool
CAeHC:	California eHealth Collaborative
CAIR:	California Automated Immunization Registry
CalHIPSO:	California Health Information Partnership and Services Organization (formerly Cal-REC.)
CalOHII:	Office of Health Information Integrity
CalPSAB:	California Privacy and Security Advisory Board
CalREDIE:	California Reportable Disease Information Exchange
CalRHIO:	California Regional Health Information Organization
CALSTARS:	California State Accounting and Reporting System
CAPH:	California Association of Public Hospitals
CAQH:	Council for Affordable Quality Health care
CCD:	Continuity of Care Document
CCF:	Community Care Facility
CCR:	Continuity of Care Record
CDC:	Centers for Disease Control and Prevention
CDPH:	California Department of Public Health

CFDA:	Catalog of Federal Domestic Assistance
CHA:	California Hospital Association
CHCF:	California HealthCare Foundation
CHFFA:	California Health Facilities Financing Authority
CHHS:	California Health and Human Services Agency
CHWA:	California Health Workforce Alliance
CMR:	Confidential Morbidity Reporting
CMS:	Centers for Medicare and Medicaid Services
CMS:	Case Management System (in context of CWS)
CORE:	Committee on Operating Rules for Information Exchange
CPCA:	California Primary Care Association
CR:	Controller's Receipt
CSRHA:	California State Rural Health Association
CTEC:	California Telemedicine and eHealth Center
CTN:	California TeleHealth Network
CVX:	Clinical Vaccine Codeset Names
CWS:	Child Welfare Services
DHCS:	Department of Health Care Services
DOB:	Date of Birth
DSL:	Digital Subscriber Line
DURSA:	Data Use and Reciprocal Support Agreement
EARS:	Early Aberration Reporting System
ED:	Emergency Department
EDI:	Electronic Data Interchange
EHR:	Electronic Health Record
ELINCS:	EHR-Laboratory Interoperability and Connectivity Specification
ELR:	Electronic Laboratory Reporting
FCC:	Federal Communications Commission
FCN:	Federal Catalog Number
FERPA:	Family Educational Rights and Privacy Act
FQHC:	Federally Qualified Health Center
GE:	Governance Entity
GPRA:	Government Performance and Requirements Act
HEDIS:	Health care Effectiveness Data and Information Set
HEP:	Health and Education Passport
HHS:	United States Department of Health and Human Services
HIE:	Health Information Exchange
HIMSS:	Healthcare Information and Management Systems Society
HIO:	Health Information Organization
HIPAA:	Health Insurance Portability and Accountability Act
HIT:	Health Information Technology
HITECH:	Health Information Technology for Economic and Clinical Health Act, part of ARRA
HITFAC:	Health Information Technology Financing Advisory Commission
HITSP:	Health Care Information Technology Standards Panel
HL7:	Health Level 7
HMO:	Health Maintenance Organization
HTTP:	Hypertext Transfer Protocol
ICD-9 or ICD-10:	International Classification of Diseases, version 9 or 10
IDN:	Integrated Delivery Network
IFR:	Interim Final Rule

IPA:	Independent Physician Association
IPSec:	Internet Protocol Security
IT:	Information Technology
LEC:	Local Extension Center
LOINC:	Logical Observation Identifiers Names and Codes
Medi-Cal:	California Medicaid Program.
MITA:	Medicaid Information Technology Architecture
MMIS:	Medicaid Management Information System
MOU:	Memorandum of Understanding
NAPHSIS:	National Association for Public Health Statistics and Information Systems
NCHS:	National Center for Health Statistics
NCVHS:	National Committee on Vital and Health Statistics
NGA:	National Governors' Association
NHIE:	Nationwide Health Information Exchange
NHIN:	Nationwide Health Information Network
NHIO:	NHIN-Enable HIO Nodes
NICU:	Neonatal Intensive Care Unit
NIEM:	National Information Exchange Model
NIST:	National Institute of Standards and Technology
NPI:	National Provider Identifier
NPRM:	Notice of Proposed Rulemaking
OASE:	Office of State Audits and Evaluation
OCIO:	State Chief Information Officer
OHIT:	Office of Health Information Technology (California)
OMB:	Office of Management and Budget
ONC:	Office of the National Coordinator for Health Information Technology
OSHPD:	Office of Statewide Health Planning and Development
P/N:	Project Number
PBM:	Pharmacy Benefits Management
PHI:	Personal Health Information
PHIN:	Public Health Information Network
PHIN-MS:	Public Health Information Network Messaging System
PHR:	Personal Health Record
PPO:	Preferred Provider Organization
REC:	Regional Extension Center
regional HIO:	Regional Health Information Organization
RHITEC:	Regional Health Information Technology Extension Center (same as REC)
RPMS:	Resource and Patient Management System
RODS:	Real Time Outbreak Disease Surveillance
SACWIS:	Statewide Automated Child Welfare Information System
SAML:	Security Assertion Markup Language
SAWS:	Statewide Automated Welfare
SBHC:	School-Based Health care
SCO:	State Controller's Office
SEFA:	Schedule of Expenditures of Federal Awards
SHARP:	Strategic HIT Advanced Research Projects Program
SMS:	Short Message Service
SNOMED:	Systematized Nomenclature of Medicine
SOAP:	Simple Object Access Protocol
SOP:	Standard Operating Procedure
STEVE:	State and Territorial Exchange of Vital Events

TAC:	Technical Advisory Committee
TRC:	TeleHealth Resource Center
TLS:	Transport Layer Security
TWG:	Technical Working Group
UDDI:	Universal Description Discovery Interface
UHC:	United Health care
URI:	Uniform Resource Identifier
URL:	Uniform Resource Locator
USDA:	United States Department of Agriculture
WSDL:	Web Services Description Language

Appendix 3: List of Proposed Requirements for Governance Board

- Organizational
    - Not-for-profit organization under California law
    - Diverse board composition from multiple types of organizations from multiple regions throughout the state
    - Board must include: Secretary of HHSA, the Deputy Secretary of HIT and representatives from the Senate and the Assembly as voting members of the HIE Governance Entity
    - Experienced and qualified executive management team and staff, who act under the direction of the Organization's Board of Directors to address privacy and security, technical approach and health IT adoption
    - Adequate workgroups and subcommittees to reasonably accomplish the goals established in the State's Strategic Plan on for HIT/HIE.
    - Demonstration that one of its principle goals is to use information technology to improve health care quality and efficiency through the authorized and secure electronic exchange and use of health information
    - Commitment to protect the public's interests and ensure accountability of HIEs in the state
    - Nondiscrimination and conflict of interest policies that demonstrate a commitment to open, fair and nondiscriminatory participation by stakeholders
    - Does not directly operate a HIE or have any financial stake in a HIE or HIE vendor.
    - Articles of Incorporation and Bylaws will clearly describe who the members are, how members are selected, and the powers that members will have.
    - Appropriate insurance
    - Trusted, independent voice that can reflect a diverse array of interests and perspectives on key policies and standards

    - Ability to convene and facilitate multiple collaborative workgroups, including:
        - Health Outcomes
        - Privacy and Security
        - Technical Approach
        - Sustainability

- Health IT Adoption
    - Ability to convene workgroups that include membership from all regions of California
    - Experience with outreach and advocacy, specifically the advocacy of HIE
    - Recognized as an educator and information resource for HIE and health IT efforts
    - Commitment to implementation of transparent workgroup and convening efforts

- Health Outcomes
    - Support the integration of HIE efforts with other healthcare goals, objectives and initiatives
    - Ensure that entity activities support California's 2010 and 2020 health outcome goals
    - Ensure that entity activities incorporate regional variation
    - Assess candidate services and use cases and develop strategy that best meets the needs of the most patients.

- Privacy and Security
    - Coordinate with CalPSAB to define privacy and security policy and guidance
    - Ability to monitor implementation of California's privacy and security policy and guidance and, if appropriate, enforce them
    - Demonstrated knowledge and experience of existing privacy and security issues
    - Ability to manage policy monitoring and development on an ongoing basis

- Management
    - Demonstrated ability to acquire and train appropriate resources
    - Experience in issuing and managing multiple grants in excess of $1,000,000 each.
    - Experience in managing contracts for various types of services including:
        - Technology

        - Legal
        - Administrative
        - Professional
    - Appropriate strategies to facilitate the alignment of statewide, interstate and national HIE strategies
    - Appropriate strategies to facilitate the alignment of statewide, interstate and national HIE strategies
    - Appropriate strategies to coordinate HIE efforts with other CA health IT efforts, including Medi-Cal, public health, RECs, workforce, etc.
    - Implement a dispute resolution mechanism to adequately and appropriately reconcile divergent opinions and perspectives

- Evaluation and Assessment
    - Evaluation and assessment experience in complex programmatic and fiscal environments focused on health improvement.
    - Assess the quality improvement benefits created through HIE efforts within the state
    - Develop evaluation and accountability measures and framework for HIE implementation and health IT initiatives
    - Continually track and report on progress of HIE and health IT initiatives
    - Track, assess and maintain inventory of stakeholder activities
- Financial
    - Experience in development and administration of grant-making processes consistent with state and Federal Guidelines
    - Proven experience with raising funds from multiple sources – both public and private
    - Robust administrative and financial process, including adherence to GAAP and all federal and state laws
- Technical
    - Ability to track, assess and align California efforts with national HIE and health IT efforts
    - Experience in developing complex use cases that span multiple systems as well as multiple entities
    - Ability to enforce technology policies and practices

- Ability to define, prioritize, select, leverage and manage shared health it services across a wide range of stakeholders

- Recognized technical expertise on staff

Appendix 4: Interview Protocol and List of Interviewees

Hospital/Health Systems

Project Purpose

The State is partnering with the California HealthCare Foundation (CHCF) to undertake a time-limited process that will strengthen California's ability to maximize federal HIE/HIT funding. The product of this collaborative effort will be a plan that describes the state role in the operation and governance of health information exchange (HIE), either through direct management or through the use of a "State Designated Entity". Our goal is to maximize the state's competitiveness in applying for HIE implementation funding from the ARRA's Health Information Technology for Economic and Clinical Health Act (HITECH). CHCF has selected Manatt Health Solutions, a division of Manatt, Phelps and Philips, to facilitate the project.

As a Health System and healthcare stakeholder your perspective is critical.

(1) Learn more about your current and planned activities;

(2) Understand your perspectives on statewide initiatives; and

(3) Understand what role you believe the State should play in supporting local exchanges now, and during the implementation process (assuming Federal HITECH implementation funding is obtained)

A. Organization Information

Current Organization Structure

A1. How are you structurally organized? How are your physician relationships managed. Please describe other relationships with third party organizations / affiliated groups.

A2. Where are your head-quarters and primary offices located? Where are your facilities located and what is your general footprint in CA / outside of CA?

A3. Please describe in general how decisions regarding health IT (financial, strategic, resources, etc) are made collectively as a system versus at an individual facility level.

Stimulus and HIE

A4. How do you believe your organization will benefit from Medicare and Medi-Cal payment incentives for EHR adoption? Is your organization assisting providers with preparation for meaningful use? If so, how? Is participation mandatory for providers? What is the current level of adoption?

A5. How is your organization participating in health information exchange (HIE) activities? What organizations, if any, are you exchanging information? How is your interaction with other initiatives at the regional and state level governed?

A6. Within your organization what enforcement procedures for compliance with HIE rules or agreements do you have? How has your organization managed compliance with State and Federal privacy statutes and regulations?

A7. Do you anticipate undergoing significant changes with respect to HITECH and if so what specifically are you doing to prepare?

State

A8. What should the State's role be in determining statewide or regional governance for health information exchange? How can the State ensure that the needs of local HIE initiatives have adequate representation in funding decisions and priorities?

A9. Should the governance of State HIE be vested in a State agency, in a statewide not-for-profit that is designated by the State (a "State Designated Entity" or "SDE"), in a combination or hybrid of the two or in none of the above? What should the Governance Board for this HIE look like? Please explain.

A10. Should there be an Advisory Board that serves as a forum for stakeholders to express their views and coalesce around recommendations? What should be the State's role on

such an Advisory Body? Are there other mechanisms that could be used to get input from other stakeholders?

A11. What do you see happening in other states in which you operate? What components would you like to see in CA? What components would you want CA to do differently?

B. Technology Approach

Technical Approach to HIE

B1. Does your organization have a role in providing technical services to providers? If so, please describe type of services and organizations to whom you provide technical services

B2. How many organizations/users do you currently electronically exchange health information? Do you electronically send data to county health department or to the state? Please describe the type of data and how it is exchanged?

B3. What is your average daily volume of data exchanged with outside organizations?

B4. What data is currently being shared electronically? What do you expect to be shared within the next six months?
   a. What networks are you a part of (e.g. SureScripts, direct connections, clearinghouses, etc)? What has your experience with connectivity and exchange been?
   b. What networks would you consider participating in?

B5. What technical approaches are you using to implement your architecture? (e.g., WS-Security, SAML tokens), HITSP messaging formats – your 'technology stack')
   c. What standards do you use for data?
   d. What standards do you use for messaging?
   e. How do these standards address interoperability?
   f. Do you currently support interfaces with community-based EHR enabled providers? If so are those interfaces bi-directional?
   g. What are the requirements for organizations/providers to provide information into your HIE?
   h. What is the current state of your technical architecture? Which components do you have implemented? When were they implemented / or planned to be implemented?

B6. Which vendors are providing the various components of your HIE service?
   i. What product version are you using?
   j. Are the vendor/products CCHIT certified? SureScripts certified?

B7. What other care coordination or data sharing projects or initiatives are you participating in currently? In the past? Plan to participate in? (e.g. broadband and telehealth)

C. Clinical Priorities

HIE Clinical Priorities

C1. What are your organizations primary clinical objectives for HIE? How were these selected? What other clinical objectives were considered?

State

C2. What should the State's role be in determining clinical priorities for the state and at a regional level?

C3. What clinical priorities should be addressed at the state level? Regional level? Facility level? How should these be prioritized and implemented?

D. Privacy and Security

D1. Should patients have a right to entirely exclude their data from being exchanged? Should there be an opt-in our opt-out strategy in place? Should there be a break-the-glass clause? Can patients access their own data electronically? If so is there a mechanism for them to control and/or request/require incorrect data to be corrected?

D2. For what purposes can patient information currently be accessed? Are there permitted uses beyond diagnosis and treatment? What policy/mechanism exists as to assuring the "minimum necessary" standard?

D3. Do you have a process for using de-identified data for research purposes? For the development of best practices or other policy decisions?

D4. What do you see at the biggest issues in privacy and security around HIE in a hospital setting?

State

D5. What privacy policies and security procedures should be established and governed at a state-level?

D6. What privacy policies and security procedures should be established and governed at the local level?

D7. Is there a role for "safe harbors" clauses to aid HIE?

D8. What should the State's role be in addressing privacy and security policies for health information exchange at a statewide and regional level?

D9. To what extent have you or members of your organization participated in the California Privacy and Security Advisory Board (CalPSAB)? If yes, what role do you see the PSAB playing going forward that would best support health information exchange across the State?

E. Financing

F1. What is the ballpark of dollars that you have spent to implement Health IT such as EMR/EHR, CPOE, Etc.?

F2. What were the capital build cost that were incurred, or are expected to be incurred, in order to share health information outside of your organization?

F3. What are the costs, or expected costs, of ongoing operations associated with sharing health information outside of your organization?

F4. How do you believe your organization will benefit from Medicare and Medi-Cal payment incentives for EHR adoption?

F5. Do you see your organization benefiting from HIE and having broader access to patient information? Where do you see the benefit accruing? How?

State

F6. What should the State's role be in determining a statewide or regional HIE financing model?

F7. What is the role of the State in ensuring access to stimulus funds?

F8. What is the role of the State in a statewide HIE sustainability model?

G. Wrap Up/Overall Recommendations

G1. What recommendations would you provide the State as it considers how to approach stimulus funding?

Local Initiatives

Project Purpose

The State is partnering with the California HealthCare Foundation (CHCF) to undertake a time-limited process that will strengthen California's ability to maximize federal HIE/HIT funding. The product of this collaborative effort will be a plan that describes the state role in the operation and governance of health information exchange (HIE), either through direct management or through the use of a "State Designated Entity". Our goal is to maximize the state's competitiveness in applying for HIE implementation funding from the ARRA's Health Information Technology for Economic and Clinical Health Act (HITECH). CHCF has selected Manatt Health Solutions, a division of Manatt, Phelps and Philips, to facilitate the project.

A critical element of this process is ensuring that we fully understand the current state and future plans of significant HIE implementation projects currently underway in California. We are particularly interested in learning about the stage of implementation of each project and specific functionality such as: e-prescribing, EHR adoption, electronic laboratory results reporting, clinical data exchange, administrative payment processing, as well as technical architecture, involvement of key stakeholders, number of people, and regions served.

As a local HIE initiative your perspective is critical.

On today's call we would like to:

(1) Learn more about your current and planned activities;

(2) Understand your perspectives on statewide initiatives; and

(3) Discuss your challenges, and suggestions for moving forward.

(4) Understand what role you believe the State should play in supporting local exchanges now, and during the implementation process (assuming Federal HITECH implementation funding is obtained)

A. Governance

Current Organization Structure

A1. Within your organization what is the process for decision-making? What authority/control does the organization have over its participants? What is the relationship between the operating exchange (and if there's a separate organization, that entity) and the participants (i.e., the data providers)?

A2. Who are the key stakeholder organizations/participants in your organization? How do you incorporate stakeholder feedback into your process? How are consumers engaged in your process, if at all?

A3. What is the composition of your Board of Directors? How is that composition determined?

A4. Within your organization what enforcement procedures for compliance with HIE rules or agreements do you have? How has your organization managed to comply with State and Federal privacy statutes and regulations, enforce those policies, and assure participants of their liability concerns with respect to potential privacy and security breaches?

A5. Does your organization maintain business associate agreements or contracts with other organizations? If so, with what organizations? Is your organization always the business associate?

A6. How is your interaction with other initiatives at the regional and state level governed?

A7. Is your organization preparing for significant changes with respect to HITECH and if so what specifically are you doing to prepare? Are there restrictions or limitations on your structure?

A8. Have you assessed your members' qualifications for meaningful use (e.g. Medicare and Medi-Cal)?

A9. Does your organization carry insurance? If yes, can you provide us with coverage information and your insurer's name?

State

A10. What should the State's role be in determining statewide or regional governance for health information exchange? How can the State ensure that the needs of local HIE initiatives (yours and others not yet operational) have adequate representation in funding decisions and priorities?

A11. What is the natural jurisdiction around which an HIE should be organized (e.g., nation, state, region, etc)? What form of jurisdiction will best position an HIE to benefit from federal and other available grant funding?

A12. Should the governance of the State HIE be vested in a State agency, in a statewide not-for-profit that is designated by the State (a "State Designated Entity" or "SDE"), in a combination or hybrid of the two or in none of the above? What should the Governance Board for this HIE look like? Please explain.

A13. Should there be an Advisory Board that serves as a forum for stakeholders to express their views and coalesce around recommendations? What should be the State's role on such an Advisory Body? Are there other mechanisms that could be used to get input from other stakeholders?

B. Clinical, Financial and Administrative Priorities

Clinical Priorities

B1. What are the primary clinical objectives of your HIE? How were these selected? What other clinical objectives were considered? (e.g. medication management, emergency room results viewing, medical home)

B2. Please describe your clinical use cases. What is the timeline around their implementation? What stakeholders will participate in their implementation?

B3. What factors influenced your selection and sequencing of use cases? Have these changed or been influenced by HITECH?

B4. Have you created an evaluation plan? How will you measure and monitor outcomes?

Financial and Administrative

B5. Does your support financial or administrative transactions? If so what types currently, or are planned/future (e.g., claims, eligibility, enrollment, etc.)

B6. Has there been any evaluation of operational/financial gains attributable to the exchanges supporting financial/administrative transactions?

State

B7. What should the State's role be in determining clinical priorities for the state and at a regional level?

B8. What clinical priorities should be addressed at the state level? Regional level? How should these be prioritized and implemented?

C. Technology Approach

Technical Approach

C1. What is the architectural model for your health information exchange? What are the most important motivations for choosing this model? What other approaches or models did you consider?

C2. What functionalities/services are you currently providing through your initiative? What do you expect to provide within the next six months? 12 months? What functionalities are most critical to your participants?

C3. How many organizations/users are connected to your exchange? What is your average daily transaction volume? What is the on-boarding process for organizations and providers?

C4. What data is currently being shared electronically through your health information exchange? What do you expect to be shared within the next six months?
   k. What networks are you a part of (e.g. SureScripts, direct connections, clearinghouses, etc)? What has your experience with connectivity and exchange been?
   l. What networks would you consider participating in?

C5. What technical approaches are you using to implement your architecture? (e.g., WS-Security, SAML tokens), HITSP messaging formats – your 'technology stack')
   m. What standards do you use for data?
   n. What standards do you use for messaging?
   o. How do these standards address interoperability?
   p. Do you currently support interfaces with community-based EHR enabled providers? If so are those interfaces bi-directional?
   q. What are the requirements for organizations/providers to provide information into your HIE?

C6. Which vendors are providing the various components of your HIE service?
   r. What product version are you using?
   s. Are the vendor/products CCHIT certified? SureScripts certified?

C7. What other technical projects or initiatives are you participating in currently? In the past? Plan to participate in? (e.g. broadband and telehealth)

C8. What are you doing to prepare your members to achieve EHR meaningful use?

C9. Do you currently connect to or plan to connect to other initiatives/HIEs? If so, what is your technical approach? Have you successfully tested connections to the NHIN gateway?

C10. Please describe your architecture's ability to scale without degradation of services.

State

C11. What is the State's role in determining architectural principles and data exchange requirements?

C12. Does the State have a role in providing technical services? How do you envision such services being leveraged at a regional level?

C13. How do you envision the State interacting with regional deployments?

D. Privacy and Security

Privacy and Security

This section addresses privacy and security policies. If possible, please provide us with a copy of your current privacy and security policies in advance of our call. Please note that we cannot guarantee the confidentiality of documents should you provide them.

D10. In developing your privacy and security policies, did you refer to or model any of your policies on existing policies or available guidance?

D11. Do your protocols require affirmative patient consent for data suppliers to make available (i.e., upload) patient data, demographic or clinical, to the exchange?

D12. Do your protocols require affirmative patient consent for providers to access patient data, demographic or clinical, that has been made available to the exchange?

D13. Do patients have a right to entirely exclude their data from the exchange? Is there an opt-in our opt-out strategy in place? in development? If yes, why did you select this model? Is there a break-the-glass clause? Can patients access their own data? If so is there a mechanism for them to control and/or request/require incorrect data to be corrected?

D14. What policies do you have regarding authentication and authorization?

D15. What are your audit policies internally? What audit policies do you require business associates or partners to comply with?

D16. Does the HIE provide for role-based access?

D17. Do you filter data? If so, what data is filtered and on what criteria? Why do you filter data?

D18. Which categories of individuals/entities are eligible for access to the HIE?

D19. What policies are in place regarding dissemination of patient information beyond the local HIE?

D20. What policies do you have with respect to the dissemination of patient information across state borders? Have you established any protocols with providers in neighboring states? How do you handle differing state laws and policies?

D21. For what purposes can patient information currently be accessed? Are there permitted uses beyond diagnosis and treatment? What policy/mechanism exists as to assuring the "minimum necessary" standard?

D22. Have you established a de-identification policy/mechanism?

D23. Do you have any policies related to data use for researchers?

D24. What are your "security incident"/breach procedures? Remedies?

D25. Do you have a process for using de-identified data for research purposes? For the development of best practices or other policy decisions?

State

D26. What privacy policies and security procedures should be established and governed at a state-level?

D27. What privacy policies and security procedures should be established and governed at the local level?

D28. Is there a role for "safe harbors" clauses to aid HIE?

D29. What should the State's role be in addressing privacy and security policies for health information exchange at a statewide and regional level?

D30. To what extent have you or members of your organization participated in the California Privacy and Security Advisory Board (CalPSAB)? If yes, what role do you see the PSAB playing going forward that would best support health information exchange across the State?

E. Financing

E1. Do you have a current business plan and financial model that you can share with us?

E2. What is the estimated amount of funding required for the "capital" build of your HIE? What is the estimated amount of funding required to support HIE growth? Do you anticipate accessing HITECH funds for any of your planned capital and ongoing expenses?

E3. What have been the primary sources of funding for the "capital" build?

E4. What is the estimated amount of funding required for ongoing operations?

E5. What are the anticipated sources of funding for ongoing operations?

E6. When do you anticipate your organization will be financially sustainable? What will sustainability require? What is the scalability of your model?

E7. Are you providing or planning to provide incentives or requirements for: Adoption? Implementation? Ongoing maintenance? How do you expect these incentives to be allocated?

E8. Have you performed an ROI analysis? Do you employ a shared-savings model? How would you account for and measure ROI/shared savings in a manner that would satisfy a third party?

State

E9. What should the State's role be in determining a statewide or regional HIE financing model?

E10. How do you believe your organization will benefit from Medicare and Medi-Cal payment incentives for EHR adoption?

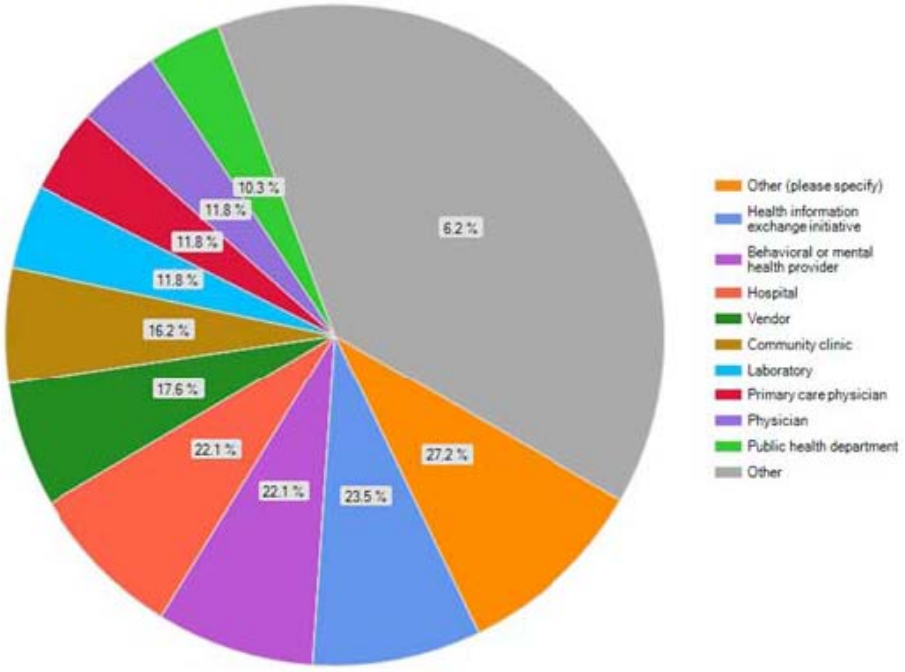
E11. What is the role of the State in ensuring access to stimulus funds?

E12. What is the role of the State in a statewide HIE sustainability model?

F. Wrap Up/Overall Recommendations

F1. What recommendations would you provide the State as it considers how to approach stimulus funding?

Appendix 5: Web Information Collection Tool and Respondent Demographic Summary



Introduction

The State is partnering with the California HealthCare Foundation (CHCF) to undertake a time-limited process that will strengthen California's ability to maximize federal HIE/HIT funding. The product of this collaborative effort will be a plan that describes the state role in the operation and governance of health information exchange (HIE), either through direct management or through the use of a "State Designated Entity". Our goal is to maximize the state's competitiveness in applying for HIE implementation funding from the ARRA's Health Information Technology for Economic and Clinical Health Act (HITECH).

As a healthcare stakeholder your perspective is critical.

This survey is intended to inform the HIE planning process through

- Learning more about your current and planned activities; and
- Understanding what role you believe the State should play in supporting local exchanges now, and during the implementation process (assuming Federal HITECH implementation funding is obtained)

Contact & Organization Information

Please complete the following information about yourself and the organization you represent.

1. First Name
2. Last Name
3. Title
4. Organization
5. Phone
6. Email
7. Address
8. City
9. State
10. Zip
11. Web address/URL for your organization
12. What stakeholder category do you represent (please select all that apply):
    - Behavioral or mental health provider
    - Community clinic
    - Consumer
    - Employer or health care purchaser
    - Health plan
    - Health information exchange initiative
    - Hospital
    - Laboratory
    - Radiology provider
    - Public health department
    - Medicare
    - Medi-Cal
    - Military and/or VA medical facility
    - Outpatient/Ambulatory surgery center
    - Patient or consumer group
    - Pharmacy benefit manager (PBM)
    - Pharmacy
    - Primary care physician

- Physician
- Surgeon
- Registered Nurse
- Nurse Practitioner
- Allied health professional
- Quality improvement organization
- Skilled nursing facility
- State agency
- Vendor
- Other: Please describe_____

Organization Information

- How is your organization participating in health information exchange (HIE) activities?

Governance

- Please describe how you believe health information exchange should be governed and managed in the State of California.

Clinical Priorities

- What clinical priorities should be addressed at the state level? Regional level? How should these be prioritized and implemented?

Technology Approach

- Does the State have a role in providing technical services? How do you envision such services being leveraged at a regional level?

Privacy and Security

Financing

- Do you have ideas for ensuring financial sustainability for health information exchange? Please describe.

Overall

- What are the best ways to engage consumers in the use of health information?
- What input or feedback would you like to provide into the current process?
- Other comments

Input Mechanism

- If you have materials or overview documents that you would like to share as an input into this process please send them to insert email address here

Appendix 6: List of eHealth Advisory Board Members

CO-CHAIRS

Kim Belshé, Secretary, California Health and Human Services Agency

Paul Tang, MD, Vice President and Chief Medical Information Officer, Palo Alto Medical Foundation

MEMBERS

Elaine Alquist, Chair, Senate Committee on Health

Karen Bass, Speaker of the Assembly

Patrick Johnston, President and CEO, California Association of Health Plans

Dale Bonner, Secretary, Business, Transportation and Housing Agency

Rachelle Chong, Commissioner, California Public Utilities Commission

Donald Crane, President and CEO, California Association of Physician Groups

Duane Dauner, President, California Hospital Association

Joe Dunn, Chief Executive Officer, California Medical Association

Carmela Castellano Garcia, President and CEO, California Primary Care Association

Karen Hatfield, President, California Clinical Laboratory Association

Melissa Stafford Jones, President and CEO, California Association of Public Hospitals

Sam Karp, Vice President of Programs, California HealthCare Foundation

David Lansky, PhD, President and CEO, Pacific Business Group on Health

Ken McEldowney, Executive Director, Consumer Action

Lynn Rolston, Chief Executive Officer, California Pharmacists Association

Teri Takai, State Chief Information Officer, Office of the State Chief Information Officer

Ben Wilson, Director of Healthcare IT, Intel Digital Health Group

Appendix 7: List of Operations Team Members

Operations Team	
Name	**Organization**
Andrews, Tim	High Pine Associates, LLC
Ange, Erika	The Lewin Group
Ashton, Lisa	Mercy Medical Group, CHWMF
Barr, Justin	CHHS- CalOHII
Barr, Lynn	Consultant to CHHS
Barrow, Steve	CA State Rural Health Association
Boynton, Ann	Manatt Health Solutions
Chan, Albert	Palo Alto Medical Foundation
Christman, Scott	CA Dept. of Public Health
Doebbert, Gwendolyn	CHHS
Frohlich, Jonah	California Health and Human Services Agency
Goltz, Amanda	Manatt Health Solutions
Henry, Steven	UnitedHealth Group
Holm, Bobbie	CHHS- CalOHII
Kam, Alex	Office of health Information Integrity
Ketchel, Alana	CHHS
Kirkwood, Mike	Polka
Kuhmerker, Kathy	The Lewin Group
Landry, Laura	Long Beach Network for Health
Leahy, Kevin	CHHS- CalOHII

Leslie, Timathie	Manatt Health Solutions
Oprendek, Stephanie	California Institute for Mental Health
Ortiz, Kim	Medi-Cal
Ozeran, Larry	Clinical Informatics, Inc
Ray, Joseph	Manatt Health Solutions
Sass, Wayne	Nautilus Healthcare Management Group
Schmoeckel, Christine	CHHS-CalOHII
Scott, Linette	CA Dept. of Public Health
Stofko, Larry	St. Joseph Health System
Sujansky, Walter	Sujansky & Associates, LLC
Wallis, Kier	Manatt Health Solutions

Appendix 8: List of CalPSAB Board and Committee Members

CalPSAB Board Members	
Name	**Organization**
Pam Dixon, Co-Chairperson	World Privacy Forum
Rory Jaffe, Co-Chairperson	California Hospital Patient Safety Organization
Karen Johnson	Department of Health Care Services
Cindy Ehnes	Department of Managed Health Care
Joanne McNabb	Office of Privacy Protection
John Rice	California Public Employees' Retirement System
David Nelson	California State Association of Counties
Kathryn Lowell	Health Systems and Life Sciences, Business, Transportation and Housing Agency
Todd Ferris	Stanford University School of Medicine
Laura LaCorte	University of Southern California
Douglas Hillblom	California Pharmacists Association
Pamela Lane	California Hospital Association
William Barcellona	California Association of Physician Groups
Lynn McCullough	American College of Emergency Physicians
LaVonne LaMoureaux	California Health Information Association
Paul Smith, M.D.	American Association of Retired Persons
Ken McEldowney	Consumer Action
Leanne Gassaway	America's Health Insurance Plans
Veenu Aulakh	California HealthCare Foundation

Privacy Committee Members	
Name	**Organization**
Michelle Nix, Co-Chair	McKesson Pharmaceuticals
Monica Moldovan, Co-Chair	UC Davis Health Systems
Jana Aagaard	Law Office of Jana Harder Aagaard
Linda Ackerman	Privacy Activism
Sunday Aigboboh	Department of Public Health
Venus Andrade	California Dept of Veterans Affairs
Todd Andros	Member of Workgroup
John Antrobus	Blue Shield of California

Privacy Committee Members	
Name	**Organization**
Chris Apgar	Apgar & Associates, LLC
Shelly Awes	County of Fresno, DPH
Brent Barnhart	Kaiser Permanente
Joan Beach	CHW
Cassi Birnbaum	Rady's Children's Hospital and Health Center
Norm Black	Department of Mental Health- Legal
Cynthia Bosco	DDS
Marie Carmichael	Riverside County Regional Medical Center
Maria Chaves	ACCEL
Roman Diaz	Touchstone Compliance
Kevin Dickey	Contra Costa County
Leo Dittemore	Healthcare Partners Medical Group
Pam Dixon	World Privacy Forum
Sean Michael Dodd	Mental Health Services, County of Napa HHS
Karen Elliot	L.A. Care Health Plan
Michael Ellison	CA Dept. of Alcohol and Drug Programs, Information Management Services Division
Cheryl Esters	Solano County
Greg Ewing	American River Strategic Advisors, LLC
Dan Falzarano	CalPERS
Kelley Farrell	Department Of Alcohol and DrugPrograms, Office of Legal Services
Debra Fisher	Scripps Green Hospital
Robert Folden	CHW-Redding Mercy Medical Center
Sydney Foster	Object Health
Alex Fowler	PricewaterhouseCoopers
Linda Fredericksen	California EDD
Jon Friedman	OptumHealth
Jennifer Frost	Member of Workgroup
Gail Gannon	Ensante
Linda Garrett	Member of Workgroup
Lennore Gilbert	California Health Information Association
Lora Gilmore	Department of Managed Health Care
Dixie Gleason	Mendocino Community Center
Gina Gonzales	DMH
Collin Goodrum	Arrowhead Regional Medical Center
Amy Guardino	Good Samaritan Hospital
Matthew Haddad	Anthem Blur Cross Blue Shield
Ross Hallberg	John Muir Health
Cambria Haydon	St Johns Hospital
Terry Hearn	WellPoint Inc. – HIT
Jeremy Henley	ID Experts
Douglas Hillblom	California Pharmacist Association
Gerry Hinkley	Pillsbury Winthrop Shaw Pittman

Privacy Committee Members	
Name	**Organization**
Gayle Hirahara	California ADP
Allen Hobbs	Kaiser Permanente Information Technology
Sheri Hofer	CalPERS
Amy Hooper	Mercy Hospital of Folsom
Cheri Huber	County Supervisors Association of California
Margaret Jakobson	Disability Rights California
Katherine Johnson	Public Health Foundation Enterprises
Michael Johnson	Safety Net Connect
Eileen Kahaner	Sidley Austin, LLP
Memo Keswick	Self-Employed
Allegra Kim	Assembly Committee on Health
Michelle Kirby	Mercy Medical
Vicky Kirby-Martin	University of California San Francisco
Penny Knapp	California Department of Mental Health
Laura LaCorte	University of Southern California
Jane Lamborn	Dept. of Health Care Services
Laura Landry	Long Beach Network for Health
Theresa Lea	Department of Alcohol and Drug Programs
Gwen Lewis-Reid	Member of Workgroup
Eric Liederman	Kaiser Permanente Health Connect N. California
Kathleen Lynaugh	Blue Shield of California
John Macauley	Anakam Inc.
Nina Maruyama	San Francisco Health Plan
John Mattison	Kaiser Permanente Health Connect
Mike Matull	Coalition of Orange County Community Clinics
Linda McBride	County of Los Angeles
Joanne McNabb	California Department of Consumer Affairs
Dale Miller	Member of Workgroup
David Minch	John Muir Health
Monica Moldovan	UC Davis Health Systems
Dale Morgan	California EDD
Kathleen (Kevie) Naughton	UCSD Health Sciences
David Nelson	San Diego County
Kevin Nelson	Cottage Health System
Michelle Nix	McKesson Pharmaceutical
Robert O'Neill	OHC
T. Stephanie Oprendek	California Institute for Mental Health
Kim Ortiz	DHCS
Anup Patel	InterHealth Corporation/Presbyterian Intercommunity Hospital
Lori Potter	Foundation Health Plan, Inc.
Jason Rancadore	Center for Health Improvement
Max Reynolds	University of California Office of General Counsel
Lois Richardson	California Hospital Association
Lori Ridley	Kaiser Pemanente
Mary Riemersma	CAMFT

Privacy Committee Members	
Name	**Organization**
Jamie Riggs-Nagy	Santa Cruz County Public Health
Carol Risely	California Department of Developmental Services
Brian Rosman	Bull Services
Jeff Sanchez	California Department of Public Health
Mark Savage	Consumers Union of United States, Inc
Angela Saverice-Rohan	WellPoint, Inc.
Kurt Schwartz	BearingPoint, Inc.
Lynn Scott	Department of Veterans Affairs
Dorian Seamster	Health Improvement Partnership
Andrew Serwin	Foley and Lardner, LLP
Marilyn Shreve	Member of Workgroup
AnnMarie Skullr	Long Beach Network for Health
Anna Slomovic	Anakam Inc.
Greg Smith	Public Health Foundation Enterprises
Leo St. John	
Charles Steen	Catholic Healthcare West
Stephen Stuart	California DPH
Colleen Sullivan	Henrietta Weill Memorial Child Guidance Clinic
James Sullivan	BearingPoint, Inc.
Enrique Terrazas	UCSF
Lee Tien	Electronic Frontier Foundation
Laurie Tull	Anakam Inc.
Laura Venegas	California ADP
Penny Villalva	CalPERS
Kier Wallis	Manatt, Phelps & Phillips, LLP
Jing Wang	Kaiser Permanete
Jason Watts	Public Health Foundation Enterprises
Kim Wells-Ball	Barton Memorial Hospital
Jef Williams	Ascendian Healthcare Consulting
Adrian Wong	California Pharmacists Association
Janlee Wong	National Association of Social Workers, California Chapter
Matt Woodhill	Resilient Trust Networks
Deborah Yano-Fong	UC San Francisco
John McCumber	Symantec Corporation

Security Committee Members	
Name	**Organization**
Sunday Aigboboh	Department of Public Health
Joan Beach	CHW
Bill Beighe	Physicians Medical Group of Santa Cruz
Donald (Don) Berman	Medical Information Services for Digital Renaissance Group, LLC
Thys Bohr	California Department of Veterans Affairs
Jean Bowman	Sutter Health

Security Committee Members	
Name	**Organization**
Tina Buop	Muir Medical Group IPA, Inc.
Wincy Carr	Fresno County ITSD
Maria Chaves	ACCEL
David Chou	AHMC Healthcare
Peter Clark	Anakam Inc.
Don Couch	Scan Health Plan
Gary Coverdale	Sutter County
Michael Davis	SPAWAR Information Assurance Technical Authority
Jorge DeCesare	Catholic Healthcare West
Matthew Deveny	Sutter Health
Roman Diaz	Touchstone Compliance
Kevin Dickey	Contra Costa County
Karen Elliot	L.A. Care Health Plan
Tracy Elmer	Sharp-Rees-Stealy Medical Center
Lorraine Espitallier	Department of Alcohol & Drug Programs, Licensing & Certification Div.
Greg Ewing	American River Strategic Advisors, LLC
Cynthia Fair	CDSS
Dan Falzarano	CalPERS
Sydney Foster	Object Health
Gina Gonzales	DMH
Robert Grill	EDS
Lori Hack	Object Health
Michael Hagerty	Kaiser Permanente
Luba Halich	Palomar Pomrado Health
Terry Hearn	WellPoint Inc. – HIT
Eric Helfin	Medicity
Duane Henderson	Henderson Consulting Behavioral Information Technology
Sheri Hofer	CalPERS
Bill Howe	Applied Business Continuity Consulting LLC
Gary Hummel	State of California OCIO-Office of Information Security
Bob Hunter	Microsoft Corporation
Susan Ingebretsen	Washington Hospital
Jose Jimenez	Anakam Inc.
John Keith	Long Beach Memorial Medical Center/Miller Children's Hospital
Memo Keswick	Self-Employed
Laura Landry	Long Beach Network for Health
Stephen Lau	University of California, San Francisco
Dan Lutkenhouse	IF Interop Foundry
John Macauley	Anakam Inc.
Lee Macklin	CDCR
Andie Martinez	California Primary Care Association
Mike Maxwell	Symantec Corporation

Security Committee Members	
Name	**Organization**
Evelyn Milani	Applied Business Continuity Consulting LLC
David Minch	John Muir Health
Monica Moldovan	UC Davis Health Systems
Steve Moore	CDHCS
Dale Morgan	California EDD
Lee Mosbrucker	OCIO
David Nelson	San Diego County
Bill Pankey	Tunitas Group
Anup Patel	InterHealth Corporation/Presbyterian Intercommunity Hospital
Mark Paulding	Hogan & Hartson LLP
Hari Pendyala	FishNet Security
George Pennebaker	California Pharmacists Association
Robert Pittman	County of Los Angeles
Daniel Pothen	Mission Hospital/CHOC at Mission
Rob Quadri	Barton HealthCare System
Lorraine Rinker	Rinker and Associates
Sunny Saran	E.H.R Readiness
Angela Saverice-Rohan	WellPoint, Inc.
Kurt Schwartz	BearingPoint, Inc.
Daniel Sedano	Kaiser Permanente IT
Ryan Stewart	Jimenez Consulting Solutions LLC on behalf ofCatholic Healthcare West
James Sullivan	BearingPoint, Inc.
Paul Tobia	Sharp HealthCare
Laurie Tull	Anakam Inc.
Jeffrey Van Gundy	Symantec Corporation
Brett Wahlin	Kaiser Permanente
Jing Wang	Kaiser Permanete
Mark Weatherford	California Office of Information Security
Jef Williams	Ascendian Healthcare Consulting
Matt Woodhill	Resilient Trust Networks

Legal Committee Members	
Name	**Organization**
Jana Aagaard	Law Office of Jana Harder Aagaard
Linda Ackerman	Privacy Activism
John Antrobus	Blue Shield of California
Ellen Badley	Department of Managed Health Care
Bill Barcellona	California Association of Physician Groups
Brent Barnhart	Kaiser Permanente
Kristi Beckley	Employment Development Department
Peter Bibring	ACLU of Southern California
Steven Bonorris	UC Hastings College of the Law
Melissa Borrelli	Department of Managed Health Care, Office of Legal Services

Legal Committee Members	
Name	**Organization**
Cynthia Bosco	DDS
Christine Brown-Roberts	Member of Workgroup
Seth Brunner	Managed Risk Medical Insurance Board
Marie Carmichael	Riverside County Regional Medical Center
Martha Chase	Santa Clara Valley Medical Center
John Christiansen	Christiansen IT Law
Steve Churchwell	DLA Piper US LLP
Eva Coblentz	CalOHII
Jeanette Cotanche	Alameda Co. Medical Center
John Cronin	California Pharmacists Association
Abigail Cruz	California Department of Rehabilition
Kathleen Delaney-Greenbaum	CalOHII
Devon Devine	Claremont Partners, Inc.
Kelley Evans	Sutter Health
Greg Ewing	American River Strategic Advisors, LLC
Kelley Farrell	Department Of Alcohol and DrugPrograms, Office of Legal Services
Sydney Foster	Object Health
Jonah Frohlich	Office of Health Information Integrity
Suzanne Giorgi	CalOHII
Dorothy Glancy	Santa Clara University, School of Law
Staci Goodwin	CalOHI
Steven Gray	Kaiser Permanente
Lori Hack	Object Health
Matthew Haddad	Anthem Blur Cross Blue Shield
Beth Herse	California OSHPD
Douglas Hillblom	California Pharmacist Association
Barbara Hiyama Zweig	Department of Mental Health
Bobbie Holm	CalOHII
Christopher Holt	California Department of Managed Health Care
Cheri Huber	County Supervisors Association of California
Sandra Hughes	California EDD
Vallene Indvik	DSS
David Jensen	California Association of Marriage and Family Therapists
Eileen Kahaner	Sidley Austin, LLP
Carole Klove	UCLA Medical Sciences
Mark Kohler	WellPoint Inc.
John Krave	Kaiser Foundation Health Plan, Inc.
Dianne Kryter	Member of Workgroup
Janine LaMar	Department of Alcohol and Drug Programs
Jane Lamborn	Dept. of Health Care Services
Kathleen Lynaugh	Blue Shield of California
Nicholas Mazanec	CalOHII
Linda McBride	County of Los Angeles

Legal Committee Members	
Name	**Organization**
John McCann	CalOHII
David Minch	John Muir Health
Monica Moldovan	UC Davis Health Systems
Eva Vera Morrow	LA County
Michelle Nix	McKesson Pharmaceutical
Austin O'Flynn	Catholic Healthcare West
Anna Orlowski	UCD Med Ctr
Holly Pearson	DMHC
Susan Penney	California Medical Association
Steve Phillips	Hooper, Lundy and Bookman
Diane Premeau	Santa Clara Valley Health and Hospital Systems
Jason Rancadore	Center for Health Improvement
Laura Randles-Little	DSS
Dana Read	Children's Hospital
Andrea Resnick	UOP
Max Reynolds	University of California Office of General Counsel
Lois Richardson	California Hospital Association
Rob Rodgers	Northrop Grumann
Wendy Roop-Keegan	California Hospital Association
Lynda Russell	Cedars Sinai Medical Center Representing California Health Information Association
Lucia Savage	United Healthcare--Legal Dept.
Mark Savage	Consumers Union of United States, Inc
Angela Saverice-Rohan	WellPoint, Inc.
Stuart Seaborn	Protection and Advocacy, Inc.
Andrew Serwin	Foley and Lardner, LLP
Ashish Shah	CalRHIO/Medicity
Gerry Solomon	Public Health Foundation Enterprises
Lilly Spitz	Planned Parenthood Affiliates of California
Morgan Staines	California Department of Alcohol and Drug Programs
Stephen Stuart	California DPH
Lee Tien	Electronic Frontier Foundation
Roberta Ward	California DHCS
Elizabeth Wied	OSHPD
Joanna Wineberg	UC Hastings College of the Law
Dana Winterrowd	California Department of Consumer Affairs
Deborah Yano-Fong	UC San Francisco

HIE Committee Members	
Name	**Organization**
Sajid Ahmed	L.A. Care Health Plan
Caleb Arias	Coalition of Orange County Community Clinics
Susan Arrieta	L.A. Care Health Plan
Bill Barcellona	California Association of Physician Groups

HIE Committee Members	
Name	**Organization**
Isabel Becerra	Coalition of Orange County Community Clinics
Bill Beighe	Physicians Medical Group of Santa Cruz
Cassi Birnbaum	Rady's Children's Hospital and Health Center
Bill Braithwaite	Anakam, Inc
Fred Bret-Mounet	Relay Health
Tina Buop	Muir Medical Group IPA, Inc.
Lawrence Carlos	Member of Workgroup
Maria Chaves	ACCEL
Eva Coblentz	CalOHII
Jorge DeCesare	Catholic Healthcare West
Kathleen Delaney-Greenbaum	CalOHII
Lyman Dennis	El Dorado Health Consulting
Sandra Dunn	SANDRA DUNN & ASSOCIATES
Karen Elliot	L.A. Care Health Plan
Gene Fernandez	L.A. Care Health Plan
Debra Fisher	Scripps Green Hospital
Sydney Foster	Object Health
Jonah Frohlich	Office of Health Information Integrity
Jennifer Frost	CalRHIO
Ann Geyer	Tunitas Group
Suzanne Giorgi	CalOHII
Lori Hack	Object Health
Ross Hallberg	John Muir Health
Terry Hearn	WellPoint Inc. – HIT
Bobbie Holm	CalOHII
Susan Ingebretsen	Washington Hospital Healthcare System
Chris Ingersoll	RelayHealth
Katherine Johnson	Public Health Foundation Enterprises
Bob Katter	Relay Health
Allegra Kim	Assembly Committee on Health
Walter Kopp	Member of Workgroup
Laura Landry	Long Beach Network for Health
Eric Liederman	Kaiser Permanente Health Connect N. California
John Macauley	Anakam Inc.
Tom MacMillan	Brown & Toland Medical Group
Sheila Maloney	Santa Clara Family Health Plan
Keith Matsutsuyu	ER Connect
John Mattison	Kaiser Permanente Health Connect
Nicholas Mazanec	CalOHII
John McCann	CalOHII
David Minch	John Muir Health
Monica Moldovan	UC Davis Health Systems
Michelle Nix	McKesson Pharmaceutical
Dan Nutkist	HITRUST
Marian Reed	Member of Workgroup

HIE Committee Members	
Name	**Organization**
Debbie Reiger	California Regional Health Information Organization (CalRHIO)
Sunny Saran	E.H.R Readiness
Mark Savage	Consumers Union of United States, Inc
Angela Saverice-Rohan	WellPoint, Inc.
Dorian Seamster	Health Improvement Partnership
Terri Shaw	Children's Partnership
AnnMarie Skullr	Long Beach Network for Health
Anna Slomovic	Anakam Inc.
Debra Spindel	Nautilus Healthcare Management Group, LLC
Bill Spooner	Sharp HealthCare
Margaret Suddards	AXOLOTL
Christina Thielst	Freelance Administrator and Entrepreneur
Laurie Tull	Anakam Inc.
Sean Turner	Jimenez Consulting Solutions LLC
Royce Uehara	HealthCare Partners
Jonathan Wallach	Catholic Healthcare West
Scott Whyte	Catholic Healthcare West
Jef Williams	Ascendian Healthcare Consulting
Janlee Wong	National Association of Social Workers, California Chapter
Deborah Yano-Fong	UC San Francisco
Jami Young	Tehachapi Valley Health Care District

Education Committee Members	
Name	**Organization**
Sajid Ahmed	L.A. Care Health Plan
Lisa Ashton	UCSF School of Pharmacy--CHWMF
Veenu Aulakh	California Health Care Foundation
Joan Beach	CHW
Brenda Beranek	Accenture
Vicki Carlisle	Dominican Santa Cruz Hospital
Scott Christman	CDPH
Deborah Collier	Cedars Sinai Medical Center
Kam Coveyou	California Office of Privacy Protection
Penny Cox	San Bernardino County DPH
William Craddock	IBM Global Services
Roman Diaz	Touchstone Compliance
Patricia Duffy	Regional Health Occupations Resource Center SB City College
Jens Egerland	Accenture
Cheryl Esters	Solano County
Kathy Ficco	Community Health Clinics and Programs, St. Joe's
Jennifer Frost	CalRHIO
Bryan Gardner	CHW - Marketing & Communications
Amanda Goltz	Manatt

Education Committee Members	
Name	**Organization**
Sylvia Guerrero	Los Angeles County DMH
Haether Harper	Edelman
Lura Hawkins	California Association of Physician Groups
Dorith Hertz	California DPH
Cheri Huber	County Supervisors Association of California
Karen Hunt	CalRHIO
Eileen Kahaner	Sidley Austin, LLP
Michelle Kirby	Mercy Medical
Penny Knapp	California Department of Mental Health
Walter Kopp	Member of Workgroup
Pam Lane	California Hospital Association
Elise Lenox	Marin County Privacy Program and Department of Health and Human Services Compliance Program
Dan Lutkenhouse	IF Interop Foundry
Tom MacMillan	Brown & Toland Medical Group
Andie Martinez	California Primary Care Association
Linda McBride	County of Los Angeles
Kathy McCaffrey	HFS Consulting
Karen McGlinn	Share Our Selves
Joanne McNabb	California Department of Consumer Affairs
Maryanne Miller	California Department of Mental Health
Mike Negrete	Premier Pharmists Networks
David Nelson	San Diego County
Kevin Nelson	Cottage Health System
T. Stephanie Oprendek	California Institute for Mental Health
Tallien Perry	Health Law Pratice
Diane Premeau	Santa Clara Valley Health and Hospital Systems
Sunny Saran	E.H.R Readiness
Mark Savage	Consumers Union of United States, Inc
Marilyn Schuyler	California Department of Health Care Services
Linette Scott	CDPH
Dorian Seamster	Health Improvement Partnership
Sara Sherer	Keck School of Medicine University of Southern California
Marilyn Shreve	Member of Workgroup
AnnMarie Skullr	Long Beach Network for Health
Paul Smith	AARP
Jaspreet Sodhi	Central Valley Health Network
Teresa Stevenson	CalOptima
Christina Thielst	Freelance Administrator and Entrepreneur
Kier Wallis	Manatt, Phelps & Phillips, LLP
Roberta Ward	California DHCS
Jef Williams	Ascendian Healthcare Consulting
Deborah Yano-Fong	UC San Francisco

Appendix 9: Workgroup Charters, Rosters, and Biographies of Chairs [Formerly Appendix 3]

Workgroup Chair Biographies

Vulnerable and Underserved Workgroup

- **Steve Barrow** is Policy Director at the California State Rural Health Association, bringing an in-depth knowledge of the challenges facing rural populations. He is also involved in the immunization registry through his work as a Board of Directors Member of CA Immunization Coalition (CIC) and Co-Chair of the CIC Advocacy/Legislative Committee and the group's Secretary Treasurer.

- **Stephanie Oprendek** is a Senior Associate at the California Institute for Mental Health, a Board Member of the American College of Mental Health Administration, and formerly of the CA Department of Mental Health. She was involved in the development of the California Health IT Strategic Plan this summer, focusing on the inclusion of behavioral health needs.

Patient Engagement Workgroup

- **Albert Chan, MD** brings the provider perspective, drawing on a wealth of expertise in clinical operations and HIT implementations. Currently at Palo Alto Foundation Medical Group, he is the Physician Champion for their ambulatory EHR and the Medical Director of Health Information Management, directing a physician optimization team to provide strategy and change management leadership for EHR and PHR innovations.

- **Larry Stofko** is the Chief Information Officer and Senior Vice President at St. Joseph's Health System, 14-hospital, $3.7 billion not-for-profit Catholic health system. Larry contributes an experienced view of the institutional perspective on EHR adoption and participation in HIE services, understanding organizational priorities and needs as well as the care delivery system's interactions with patients and their families.

- **Mike Kirkwood**, is the Chief Executive Officer of Polka, a secure mobile personal health platform that allows users to manage their health and wellness, brings the consumer and innovation perspective to this group. An active leader in the Health 2.0 innovation and entrepreneur community, Mike has more than 15 years experience in creating and adapting usable technologies and applications that patients and their families can use to improve their health.

Finance Workgroup

- **Steven Henry** is the Director of Treasury Investment Management at UnitedHealth Group. Steven has been with United Health Group for over 12 years and has played a key role as a co-chair of the State's EHR Loan Fund Workgroup and contributor to the eHealth strategic plan.

- **Dr. Larry Ozeran** is a lifelong Californian who provides routine and emergency surgical services to medically underserved Yuba and Sutter county residents. He has been a software engineer for over 30 years and an advocate for health care reform for more than a decade. Dr. Ozeran serves as Chair of the Yuba-Sutter Healthcare Council (YSHC), promoting the most effective use of limited health care resources. He is leading the YSHC in a project to explore and possibly establish a regional HIO. Dr. Ozeran is an Associate Clinical Professor at UC Davis in the Health Informatics Program with a focus on social, organizational and political issues. He is also President of Clinical Informatics, Inc., which promotes optimal use of technology in clinical practice.

Technical Advisory Committee and Technical Working Group

Co-Chairs of Technical Working Group

- **Laura Landry**: no biography provided.

- **Scott Cebula** is President and Managing Member of Cebula IT Consulting LLC, a health care IT firm covering Southern California. He is a co-chair of the California HIE Technical Working Group and a board member for OCPRHIO (Orange County's Health Information Exchange). Scott has been in health care IT for twenty years, having starting his career as a Fortune 500 consultant. He has a B.S. in Mechanical Engineering from Cal, and post graduate work in Aerospace Engineering at USC (where he also served as adjunct faculty for the MHA program). Prior to forming his firm, , Scott was affiliated with several leading Southern California health systems and hospitals. He served as CIO for Huntington Memorial Hospital, CTO for St. Joseph Health System, and VP of Information Services for MemorialCare. He is privileged to have been associated with facilities that won two innovation awards and six consecutive 'Most Wired' awards.

Co-Chairs of the Technical Working Group

- **Robert Cothren, MD** is Chief Technology Officer of Cognosante, where he leads the critical assessment of emerging health technologies, applying novel approaches to interoperability that enable clinical analytics, population health applications, collaboration with payers, and decision support to transform clinical practice, public

health, and health plan operations. Dr. Cothren participates in establishing national standards for interoperability as a member of the Healthcare Information Technology Standards Panel, Integrating the Healthcare Enterprise, and HL7 standards organizations. Dr. Cothren acts as a senior architect within the Office of the National Coordinator for Health IT Federal Health Architecture program, helping produce an open-source gateway for nationwide health information exchange, advising on business, technical, and governance strategy for widespread interoperability for health information, and aiding federal agencies in establishing health exchange initiatives. Dr. Cothren was formerly CTO and Chief Scientist of Northrop Grumman's health practice and Director for its Clinical Information Systems Division. During his tenure at Northrop Grumman, he led a diverse team of IT and health professionals delivering electronic health records, health information exchange, and semantic interoperability solutions. He managed development and maintenance of AHLTA, the largest enterprise EHR in the world, for the DoD, and the Bi-directional Health Information Exchange, a set of technologies delivering interoperability of health information worldwide between the DoD and VHA. He led development of a NHIN architecture demonstrating national interoperability of health information, initiated a project in the Trial Implementation NHIN phase 2 in collaboration with The Cleveland Clinic, and continues his involvement with NHIN and ONC through the current limited production activities.

- **Wayne Sass** serves as Vice President, Chief Information Officer, and Privacy Officer for Nautilus Healthcare Management Group, LLC with overall responsibility for Corporate Information Services, Systems Development, I.S. Operations, Process Improvement, Project Management Office, Business Continuity Program, Eligibility, Benefits, Provider Pricing, Decision Support, Clincal Analytics, HCC/RAF Data Support, HIPAA Compliance, liaison with outside counsel, and Government Affairs. Nautilus Healthcare Management Group is a Newport Beach-based management services organization (MSO). Nautilus provides management services to physician organizations and provider practices. Nautilus' physician organization clients include Greater Newport Physicians, Edinger Medical Group, Cedars-Sinai Health Associates and Cedars-Sinai Medical Group; all among the top ranked physician organizations in the State. Nautilus Physician Services offers a comprehensive range of practice management services ranging from billing only to full practice management, including EHR implementation and support, for more than 160 Orange County providers in almost 60 practices. Before the formation of Nautilus, Wayne served as the Chief Information Officer and Privacy Officer for Greater Newport Physicians Medical Group, Inc. Wayne is also the former Vice President of Information Technology for DaVita Inc, the country's largest for-profit provider of

dialysis services. In that role he was responsible for DaVita's enterprise IT infrastructure supporting its nationwide network of outpatient dialysis clinics.

Other Contributors

- **Walter Sujansky** is the President of Sujansky & Associates, a consulting firm that specializes in the representation, analysis, and exchange of clinical data in information systems. Dr. Sujansky serves as the technical lead on the ELINCS project, a national initiative to standardize the electronic reporting of laboratory test results to EMR systems. Dr. Sujansky has also provided technical leadership in the development of data-interchange standards and data-integration techniques for the California Clinical Data Project, a statewide initiative to measure and improve chronic disease care through information technology.

Workgroup Rosters

Technical Advisory Committee	
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Cooper, Crystal	OSI
Coye, Molly	CalRHIO
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Frohlich, Jonah	California Health and Human Services Agency
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Hearn, Terry	Wellpoint
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Joslyn, Scott	MemorialCare
Joyner, David	Blue Shield of California
Kennedy, Charles	Blue Cross of California
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Vulnerable and Underserved Workgroup

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Solomon, Cynthia	FollowMe/CHRDC
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Stovall, Heidi	MiVIA
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Verbeten, Nileen	Member of Workgroup
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HIE Policy Coordination Workgroup	
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Humphrey, Bev	CDDS
Blair, Denise	CDMH

HIE Policy Coordination Workgroup	
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Snead, Jan	CDOR
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Sanson, Will	CDSS
Wagner, John	CDSS
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Stilling, Rebecca	DCSS
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Franklin, Greg	DHCS
Maxwell-Jolly, David	DHCS
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Krum, Terresa	MRMIB
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Fukui-Grandy, Joyce	OHII
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Clendenin, Stephanie	OSHPD
Holstein, Deborah	OSHPD
Kassis, Michael	OSHPD
Springarn, Ron	OSHPD
Benedetto, Paul	OSI
Cooper, Crystal	OSI
Morrison, Chris	OSI
Rose, Debbie	OSI

State of California
HEALTH AND HUMAN SERVICES AGENCY
Patient Engagement Workgroup Charter

Workgroup Charter			
Name:	Patient Engagement	**Co-Chairs:**	TBD
Meeting Frequency:	Likely Bi-weekly	**Consultants:**	• Manatt Health Solutions

Reporting Structure: The Workgroup is convened under the authority of the Secretary of Health and Human Services Agency, and it reports, on an interim basis, to the Deputy Secretary, HIT, and the eHealth Advisory Board. The Workgroup will work cooperatively with the Operations Team and other Workgroups or Committees established in support of California's eHealth initiative. It is anticipated that the Workgroup will be incorporated into the Governance Entity structure once the Governance Entity is selected and that structure is put into place.

Linkage to other activities: Other efforts, such as the California Privacy and Security Board (CalPSAB), Medi-Cal meaningful use program, workforce training, regional extension centers and others must be incorporated into the process as appropriate. As necessary, ad hoc committees that include members of CalPSAB and Workgroup members will be created to effectively and quickly deal with issues.

Purpose: This Workgroup will identify innovative approaches to engaging and empowering patients and their families through the use of technology that harnesses the HIE infrastructure, and recommend how to incorporate these approaches into the State's HIE services.

Principles:

- Patients and their families should have access to and control of their information, and be involved in the process of developing consent and privacy notifications to understand how their data will be used in HIE services.
- The process for developing an engagement strategy for patients and their families should be collaborative, open, inclusive, fair, and transparent.
- Meaningful use criteria and HIE services should serve as the foundation for developing a patient and family engagement strategy and recommendations.
- Patient and family engagement should address how personal health records (PHRs) and other consumer-centric tools factor into overall health management, and the best ways to use PHRs to advance consumer empowerment.
- Each point of care should be a point of engagement where the patient's provider enables the patient and his or her family to understand and participate in the promise of HIE.
- The Workgroup should encourage entrepreneurship and a burgeoning competitive commercial marketplace for secure and sound HIE products and services that will encourage patient and family engagement in health care decision making.
- The greater goal of engaging patients and their families in HIE services is to improve health outcomes. Improving outcomes is achieved by inculcating patients and with a sense of accountability, providing tools to improve medication and treatment regimen adherence, empowering individuals to take an active role in their own health and self-management, and increasing satisfaction with health care services.

Goals:

- Draft a detailed plan for engaging patients and their families with statewide HIE services, and to develop an engagement strategy to be incorporated into the Operational Plan.
- Define key elements, timeline, and resources required for a patient and family engagement strategy, including specific tools to ensure that patients and families have access to and control of their health information.
- Create patient and family education materials and patient awareness initiatives, and address educational need to show that patients and families' participation as technology and data-enabled partners in the care process is key to improving the patient's health outcomes.
- Recommend patient and family engagement programs to assist the HIE Governance Entity and the State to put the expected $38.8 million in HITECH grant funding to the best and highest use.
- Develop patient- and family-centric use cases to ensure that implementation maintains a focus on patient involvement and inclusion.
- Define metrics and measurement tools to ensure that patient and family engagement objectives are being met.
- To garner support, consensus and endorsement from California providers, policymakers consumer advocacy networks, eHealth and Health 2.0 innovators in patient self-management tools, and providers, payers and other stakeholders working to foster patient and family engagement with HIE services.

Areas of Responsibility:

1. Good faith participation in a collaborative process involving all stakeholders with shared as well as differing interests
2. Thoughtful input into and careful review of patient engagement strategies, educational materials, and awareness initiatives
3. Discussion and refinement of patient and family engagement strategies and programs in an open, collaborative process.
4. Ensuring that all stakeholders are afforded the opportunity to participate in the process
5. Prioritizing patient- and family-centered use cases to inform decision-making
6. Wide communication of and awareness building for this effort to stakeholders across California

Operational Plan Requirements & Deliverables:

- Patient engagement strategy for inclusion in the Operational Plan, defining key elements, timeline, and resources required to implement the strategy
- Requirements for incorporation into the technical design to ensure that meaningful use criteria, as well as mechanisms for patient and family access and control are incorporated into HIE services
- Communications plan to facilitate patient and family education and awareness of HIE and tools for patient access and control of their health information, leveraging industry knowledge to understand patients and target messaging.
- Metrics and measurement tools to ensure that objectives of the patient and family engagement strategy are monitored and met
- Patient Engagement Workgroup project schedule (2010 - 2013)
- Patient Engagement Workgroup staffing plans
- Patient Engagement Workgroup cost estimates
- Issue identification and risk mitigation strategies

Suggested Timeline for Completion of Operational Plan Deliverables

- December 7, 2009: Workgroup kickoff meeting to review and confirm Workgroup charter and timeline; Develop work plan to complete identified Operational Plan deliverables
- January 4, 2010: Initial drafts or outlines of deliverables for Operational Plan
- February 1: Workgroup Summit to review initial draft of Operational Plan
- February 5: Second draft of deliverables for Operational Plan
- March 5: Final draft of deliverables for Operational Plan

Other Deliverables

- Garner support, consensus and buy-in from California consumer advocacy networks, eHealth and Health 2.0 innovators in self-management tools for patients and their families, and providers, payers and other Stakeholders working to foster patient engagement with HIE services
- Measure and monitor progress against defined metrics and recommend actions to ensure patient and family engagement strategy objectives are met on a timely basis

State of California
HEALTH AND HUMAN SERVICES AGENCY
Financing Workgroup Charter - *DRAFT*

Workgroup Charter			
Name:	Financing Workgroup	**Co-Chairs:**	TBD
Meeting Frequency:	Likely Bi-weekly	**Consultants:**	Manatt Health Solutions Alana Ketchel

Reporting Structure: The Workgroup is convened under the authority of the Secretary of Health and Human Services Agency, and it reports, on an interim basis, to the Deputy Secretary, HIT, and the eHealth Advisory Board. The Workgroup will work cooperatively with the Operations Committee and other Workgroups or Committees established in support of California's eHealth initiatives. It is anticipated that the Workgroup will be incorporated into the Governance Entity structure once the Governance Entity is selected and that structure is put into place.

Linkage to other activities: Other efforts, such as the California Privacy and Security Board (CalPSAB), Medi-Cal meaningful use program, workforce training, regional extension centers (RECs), and others must be incorporated into the process as appropriate. As necessary, ad hoc committees that include members of these and other organizations and Workgroup members will be created to effectively and quickly deal with issues.

Purpose: Recognizing that the creation of a robust health information exchange (HIE) infrastructure in California will depend on its ability to secure the financial capital to build infrastructure capabilities and develop ongoing revenue streams to maintain operations, the Financing Workgroup will address the need to develop financing strategies and sustainability models for HIE in California.

Principles:

1. The process for developing and evaluating sustainability models and financing strategies should be a collaborative, open, inclusive, fair and transparent. Such a process will engender trust and collaboration between and among stakeholders.
2. HIE financing strategies should consider how to leverage the Medicare and Medicaid meaningful use incentives that are anticipated to create demand for products and services that enable HIE among eligible providers.
3. The proposed financing strategies and sustainability models should support a means for providers to achieve meaningful use and address disparities in providers' abilities to secure financial capital.
4. The State's financial and technical assets, including access to ARRA administrative matching funds and CMS "meaningful use" incentive payments, should be leveraged to support the development of financing strategies sustainability models for HIE infrastructure.
5. Public and private sector assets, including existing investments in health IT and HIE, should be leveraged to support the creation of a robust HIE infrastructure.
6. The Workgroup should coordinate with efforts currently underway in California, including other workgroups that are part of the current process, CalPSAB, the Medi-Cal meaningful use program, REC programs, California Health Financing Facilities Authority (CHFFA), and other identified efforts.

Goals:

1. To develop financing strategies that will enable the provision of high-value HIE services, including those that support meaningful use and others that generate sustainable demand.
2. To develop cost estimates for achieving statewide HIE (total cost of HIE infrastructure)
3. To develop policy recommendations for financing strategies and sustainability models that may be incorporated into the Operational Plan for submission to the Office of the National Coordinator for Health IT (ONC) on March 31, 2010.
4. To ensure that requirements of the expected HIE participants are incorporated into and supported by the HIE infrastructure; expected HIE participants include: consumers, hospitals, ambulatory care providers, health plans, health information organizations (HIOs), government and others.
5. To garner support, consensus, and buy-in from California stakeholders around financing strategies and sustainability models for HIE in California.

Areas of Responsibility:

7. Good faith participation in a collaborative process involving all stakeholders with shared as well as differing

interests.

8. Thoughtful input into and careful review of proposed financing strategies and sustainability models.

9. Discussion and refinement of proposed strategies and models.

10. Ensuring that all stakeholders are afforded the opportunity to participate in the process.

11. Prioritizing the needs of providers serving vulnerable and underserved populations.

12. Wide communication of and awareness building for this effort to stakeholders across California

Operational Plan Requirements & Deliverables

1. Financing strategies and sustainability model for inclusion in the Operational Plan
- **a.** Identification of possible revenue sources, including tax subscription models and possible loan funds
- **b.** Proposed approach to build sustainability model to support CA HIE services

2. Estimated costs for statewide HIE in California

1. Finance Workgroup Project schedule (2010 - 2013)
2. Finance Workgroup Staffing plans
3. Finance Workgroup Cost estimates
4. Issue Identification and risk mitigation strategies

3. Metrics and measurement tools to ensure that objectives are met

Suggested Timeline for Completion of Operational Plan Deliverables

- December 7, 2009: Workgroup kickoff meeting to review and confirm Workgroup charter and timeline; Develop work plan to complete identified Operational Plan deliverables
- January 4, 2010: Initial drafts or outlines of deliverables for Operational Plan
- February 1: Workgroup Summit to review initial draft Operational Plan
- February 5: Second draft of deliverables for Operational Plan
- March 5: Final draft of deliverables for Operational Plan

Other Deliverables (required completion by April 2011)

13. Revenue source identification, including tax and subscription models and possible loan funds

14. Sustainable business model for statewide HIE services including pricing strategy

15. Detailed plan to administer sustainable revenue to support CA HIE services, including budget, available funding sources, and recommendations

State of California
HEALTH AND HUMAN SERVICES AGENCY
Vulnerable and Underserved Populations Workgroup Charter - *DRAFT*

Workgroup Charter			
Name:	Vulnerable and Underserved Populations	**Co-Chairs:**	TBD
Meeting Frequency:	Likely Bi-weekly	**Consultants:**	Manatt Health Solutions Alana Ketchel

Reporting Structure: The Workgroup is convened under the authority of the Secretary of Health and Human Services Agency, and it reports, on an interim basis, to the Deputy Secretary, HIT, and the eHealth Advisory Board. The Workgroup will work cooperatively with the Operations Team and other Workgroups or Committees established in support of California's eHealth initiative. It is anticipated that the Workgroup will be incorporated into the Governance Entity structure once the Governance Entity is selected and that structure is put into place.

Linkage to other activities: Other efforts, such as the California Privacy and Security Board (CalPSAB), Medi-Cal meaningful use program, workforce training, regional extension centers and others must be incorporated into the process as appropriate. As necessary, ad hoc committees that include members of CalPSAB and Workgroup members will be created to effectively and quickly deal with issues.

Purpose: This Workgroup will address the specific needs and disparities among vulnerable and underserved populations including children in foster care programs, aging and disabled population (including dual eligibles and those beneficiaries being served through Medi-Cal Managed Care plans), mental health, behavioral health and the uninsured, and incorporate their needs into the Operational Plan. The Workgroup will develop and recommend a communication and outreach strategy to ensure the considerations and disparities among vulnerable and underserved populations are known and addressed.

Principles:

- The process for incorporating the needs of the vulnerable and underserved populations into HIE services should be collaborative, open, inclusive, fair and transparent.
- Meaningful use criteria and HIE services should serve as a foundation for developing tools that serve these populations.
- HIE services should support community care and improve care for underserved populations, and provide a means for providers to achieve meaningful use, depending on their needs and pre-existing capabilities.
- The Committee should coordinate with programs supporting California's health care safety net facilities and providers in underserved communities, including Child Support Services, County Foster Care, Juvenile Justice and Mental Health Programs, Department of Health Care Services programs, California Medical Assistance Program, long-term care and other programs servicing vulnerable populations
- HIE services must support the aforementioned programs and recognize that California's health care safety net facilities and providers in underserved communities generally face significant fiscal and resource challenges

Goals:

- To assist the Technical Workgroup, Operations Team, HIE Governance Entity and CHHS to enable statewide HIE while addressing the specific needs of the vulnerable and underserved populations and working to eliminate disparities in care.
- To ensure that federally defined and California Medi-Cal requirements for addressing the needs of these populations are met to assist the HIE Governance Entity and the State to put the expected $38.8 million in HITECH grant funding to the best and highest use.
- To ensure that requirements of the expected participants in HIE are incorporated into specific tools and functions developed or these populations; expected participants include: consumers, hospitals, ambulatory care providers, health plans, HIOs, government and others
- To garner support, consensus and buy-in from California advocacy groups representing these populations.
- To ensure that the HIE needs of the various program providing critical services to these populations are addressed and met through the HIE services to be developed

- To ensure that communication strategies are developed that allow these populations and the programs that serve them to access HIE services

Areas of Responsibility:

16. Good faith participation in a collaborative process involving all stakeholders with shared as well as differing interests
17. Thoughtful input into and careful review of the specific communication and education program needs of these populations.
18. Discussion and refinement of proposed tools and programs for these populations in an open, collaborative process.
19. Ensuring that all stakeholders are afforded the opportunity to participate in the process
20. Prioritizing tools and communications programs for these populations to inform decision-making
21. Wide communication of and awareness building for this effort to stakeholders, representatives, and advocacy groups for these populations.

Operational Plan Requirements & Deliverables

5. Recommendations and strategy to address the needs and disparities among vulnerable and underserved populations for inclusion in the Operational Plan
6. Requirements for incorporation into the technical design to ensure that the meaningful use criteria, as well as the needs and disparities among vulnerable and underserved populations are incorporated into HIE services
1. Communication and outreach strategy to vulnerable and underserved populations that integrates input from groups with experience and insight into the needs of vulnerable and underserved populations (e.g. CHCF, CalPSAB, DHCS, DSS, Juvenile Justice, Long Term Care and Rehabilitation programs, CMAC, Indian Services, and DDS)
- Metrics and measurement tools to ensure that needs and disparities among vulnerable and underserved populations as identified in the Operational Plan are monitored and met
7. Vulnerable and Underserved Populations project schedule (2010 - 2013)
8. Vulnerable and Underserved Populations staffing plans
9. Vulnerable and Underserved Populations cost estimates
10. Issue identification and risk mitigation strategies

Suggested Timeline for Completion of Operational Plan Deliverables

■December 7, 2009: Workgroup kickoff meeting to review and confirm Workgroup charter and timeline; Develop work plan to complete identified Operational Plan deliverables
■January 4, 2010: Initial drafts or outlines of deliverables for Operational Plan
■February 1: Workgroup Summit to review initial draft of Operational Plan
■February 5: Second draft of deliverables for Operational Plan
■March 5: Final draft of deliverables for Operational Plan

Other Deliverables

22. Ensure that requirements of the expected participants are incorporated into specific tools and functions developed for special populations
23. Garner support, consensus and buy in from advocacy groups representing vulnerable and underserved populations
24. Measure and monitor progress against defined metrics and recommend actions to ensure patient engagement strategy objectives are met on a timely basis

Appendix 10: CHHS HIE Policy Coordination Workgroup.

State of California
HEALTH AND HUMAN SERVICES AGENCY
Workgroup Charter

Workgroup Charter			
Name:	CHHS HIE Coordination & Policy Workgroup	**Co-Chairs:**	TBD
Meeting Frequency:	Quarterly (long-term)	**Consultants:**	Christine Schmoeckel

			Gwendolyn Doebbert

Reporting Structure: The Workgroup is convened under the authority of the Secretary of Health and Human Services Agency, reporting to the Deputy Secretary, HIT.

Linkage to other activities: Other efforts and opportunities presented by events and programs such as the State Enterprise Architecture, MediCal EHR Incentive Program, ARRA, and HITECH should be incorporated into the process as appropriate. Additionally, ad hoc committees will be created to effectively and quickly deal with emergent issues.

Purpose: With the primary focus on improving patient outcomes, this workgroup will address the policy needs of CHHS Departments and Offices required to: a) collaborate on the exchange of health information (HIE); b) incorporate CHHS and State eHealth initiatives in response to the ARRA; and to c) provide a collaborative foundation for future Agency-wide efforts and cross-departmental cooperation in support of HIE/HIT.

Principles:

2. The process for achieving our goals will be collaborative, open and inclusive of all CHHS departments and offices.
3. Decisions reached by the committee will be based upon a consensus of the members present or participating online.
4. The workgroup's primary focus is to address policies that will support the efficient, inter-departmental exchange of health information and the removal of programmatic and systemic silos within and between departments.
5. HIE services will support community care and improve care for vulnerable and underserved populations, and will provide means for providers to achieve "meaningful use", depending on their needs and pre-existing capabilities.
6. The programmatic needs of county, regional and local partners will be considered as well as the requirements of CHHS departments and offices.

Goals:

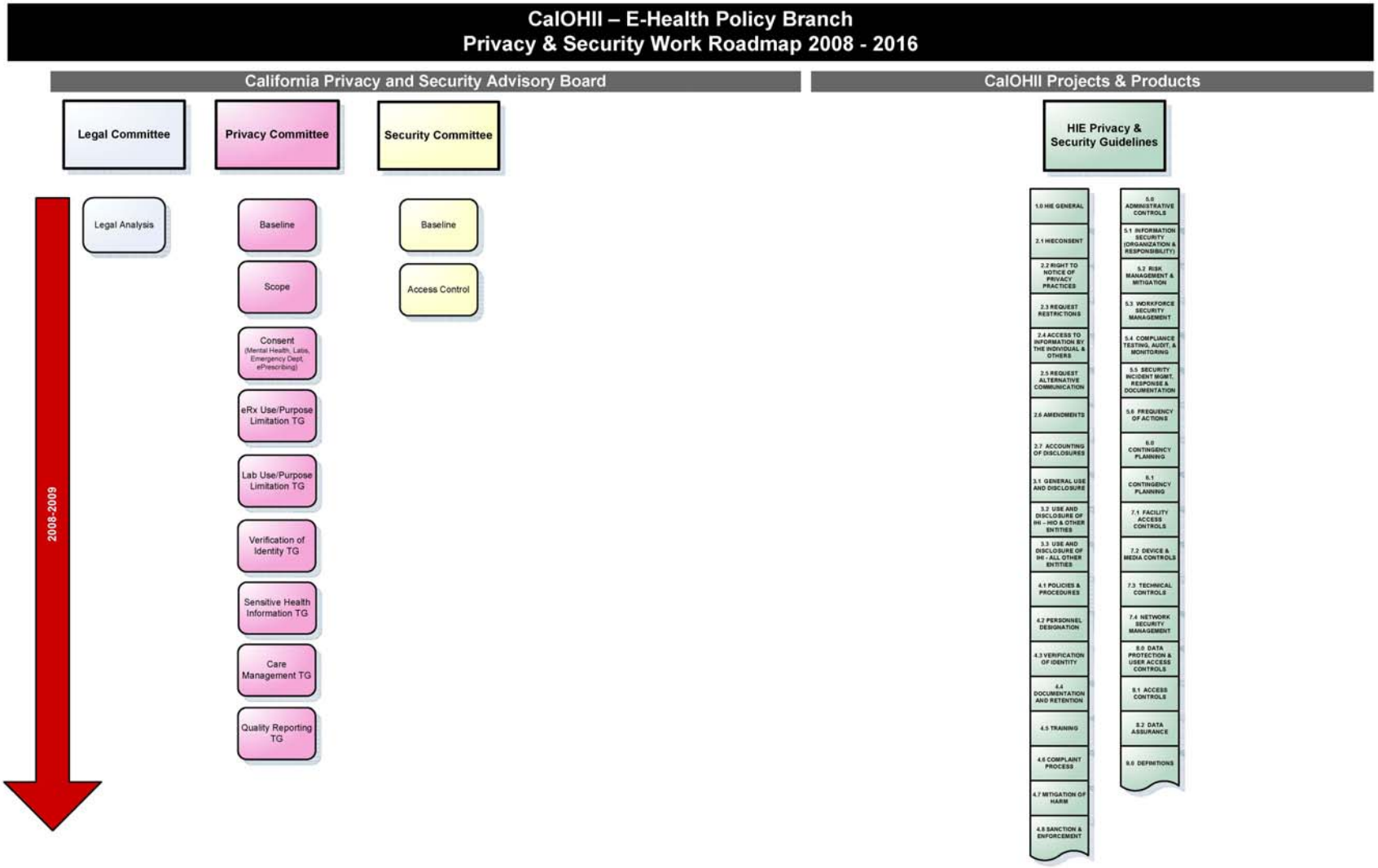
1. Identify common business processes and requirements, including health information policies and procedures and core data elements that could be shared among departments to facilitate the efficient provision of health information.
    - Develop use cases that provide a framework to describe business processes that must be supported.
2. Draft a plan for developing HIE capacity at the CHHS enterprise level in order to share commonly required data when programmatically and legally appropriate.
3. Enable departments to better leverage and plan resources to take advantage of opportunities to improve program outcomes as a result of HIE.
4. Provide a workgroup process that can include other departments, agencies and communities external to CHHS.
5. Provide input to State eHealth planning and implementation processes and the California HIE Operational Plan.
6. Maximize opportunities for Federal matching funds through projects such as MITA , Enterprise Architecture and the Medi-Cal EHR Incentive Program.

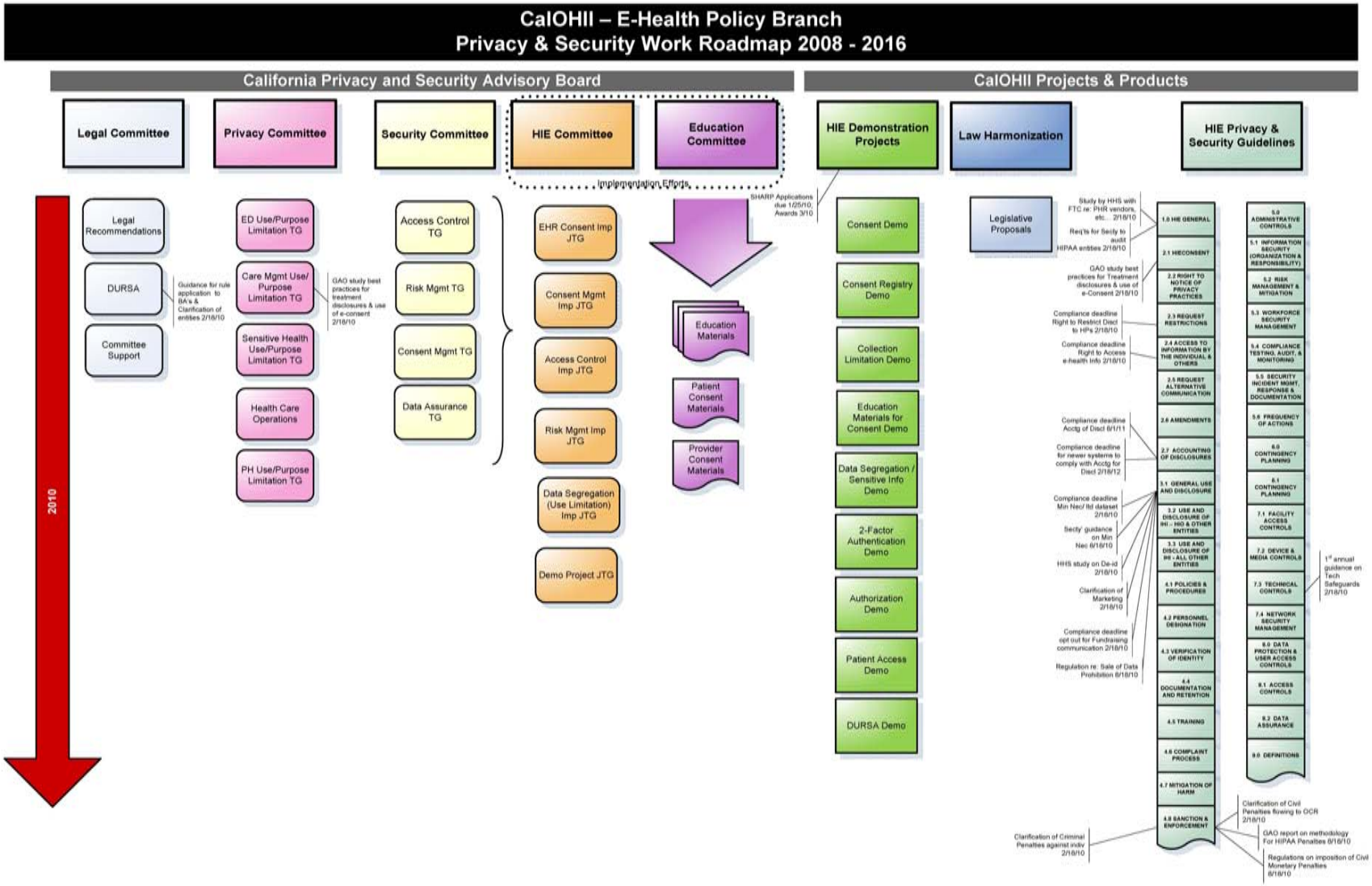
Areas of Responsibility:

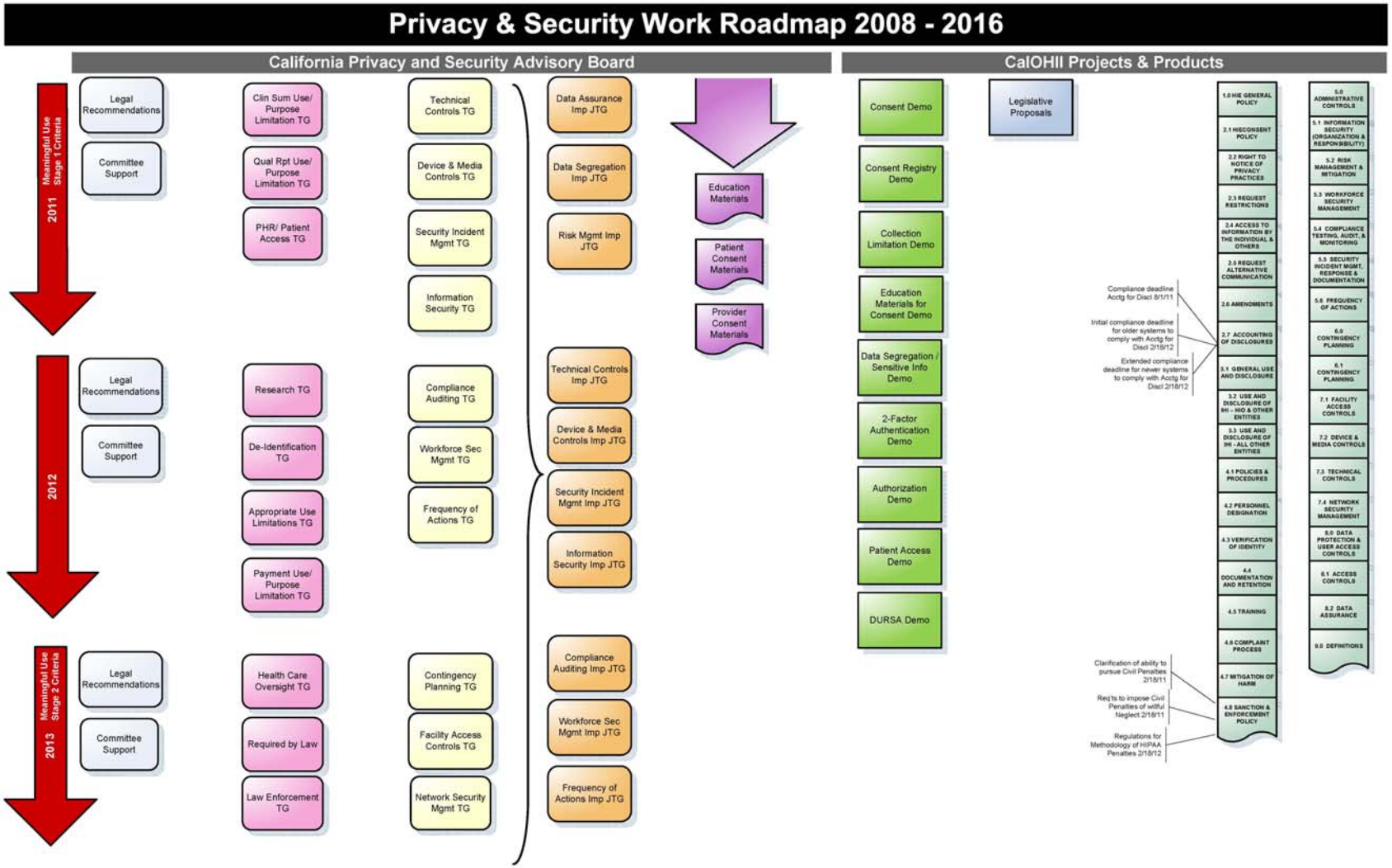
- Participate in a good faith collaborative process involving all stakeholders with shared as well as differing interests.
- Discuss and refine proposed recommendations and products in an open, collaborative process.
- Ensure that all stakeholders are afforded the opportunity to participate in the process.
- Prioritize and communicate program business requirements to inform HIE decision-making and policies.

Deliverables:	**The following areas are outside of the scope of this Committee:**
TBD	➢ Technical Systems Design

Appendix 11: CalOHII E-Health Branch Work Roadmap




CalOHII – E-Health Policy Branch
Privacy & Security Work Roadmap 2008 - 2016
California Privacy and Security Advisory Board
CalOHII Projects & Products
Legal Committee
Privacy Committee
Security Committee
HIE Committee
Education Committee
HIE Demonstration Projects
Law Harmonization
HIE Privacy & Security Guidelines
Implementation Efforts
2010
Legal Recommendations
DURSA
Committee Support
Guidance for rule application to BA's & Clarification of entities 2/18/10
ED Use/Purpose Limitation TG
Care Mgmt Use/ Purpose Limitation TG
Sensitive Health Use/Purpose Limitation TG
Health Care Operations
PH Use/Purpose Limitation TG
GAO study best practices for treatment disclosures & use of e-consent 2/18/10
Access Control TG
Risk Mgmt TG
Consent Mgmt TG
Data Assurance TG
EHR Consent Imp JTG
Consent Mgmt Imp JTG
Access Control Imp JTG
Risk Mgmt Imp JTG
Data Segregation (Use Limitation) Imp JTG
Demo Project JTG
SHARP Applications due 1/25/10, Awards 3/10
Education Materials
Patient Consent Materials
Provider Consent Materials
Consent Demo
Consent Registry Demo
Collection Limitation Demo
Education Materials for Consent Demo
Data Segregation / Sensitive Info Demo
2-Factor Authentication Demo
Authorization Demo
Patient Access Demo
DURSA Demo
Legislative Proposals
Study by HHS with FTC re: PHR vendors, etc.. 2/18/10
Req'ts for Secty to audit HIPAA entities 2/18/10
GAO study best practices for Treatment disclosures & use of e-Consent 2/18/10
Compliance deadline Right to Restrict Disct to HPs 2/18/10
Compliance deadline Right to Access e-health Info 2/18/10
Compliance deadline Acctg of Disct 8/1/11
Compliance deadline for newer systems to comply with Acctg for Disct 2/18/12
Compliance deadline Min Nec/ Ltd dataset 2/18/10
Secty' guidance on Min Nec 8/18/10
HHS study on De-id 2/18/10
Clarification of Marketing 2/18/10
Compliance deadline opt out for Fundraising communication 2/18/10
Regulation re: Sale of Data Prohibition 8/18/10
1.0 HIE GENERAL
2.1 HIECONSENT
2.2 RIGHT TO NOTICE OF PRIVACY PRACTICES
2.3 REQUEST RESTRICTIONS
2.4 ACCESS TO INFORMATION BY THE INDIVIDUAL & OTHERS
2.5 REQUEST ALTERNATIVE COMMUNICATION
2.6 AMENDMENTS
2.7 ACCOUNTING OF DISCLOSURES
3.1 GENERAL USE AND DISCLOSURE
3.2 USE AND DISCLOSURE OF IHI - HIO & OTHER ENTITIES
3.3 USE AND DISCLOSURE OF IHI - ALL OTHER ENTITIES
4.1 POLICIES & PROCEDURES
4.2 PERSONNEL DESIGNATION
4.3 VERIFICATION OF IDENTITY
4.4 DOCUMENTATION AND RETENTION
4.5 TRAINING
4.6 COMPLAINT PROCESS
4.7 MITIGATION OF HARM
4.8 SANCTION & ENFORCEMENT
Clarification of Criminal Penalties against indiv 2/18/10
Clarification of Civil Penalties flowing to OCR 2/18/10
GAO report on methodology For HIPAA Penalties 8/18/10
Regulations on imposition of Civil Monetary Penalties 8/18/10
5.0 ADMINISTRATIVE CONTROLS
5.1 INFORMATION SECURITY (ORGANIZATION & RESPONSIBILITY)
5.2 RISK MANAGEMENT & MITIGATION
5.3 WORKFORCE SECURITY MANAGEMENT
5.4 COMPLIANCE TESTING, AUDIT, & MONITORING
5.5 SECURITY INCIDENT MGMT, RESPONSE & DOCUMENTATION
5.6 FREQUENCY OF ACTIONS
6.0 CONTINGENCY PLANNING
6.1 CONTINGENCY PLANNING
7.1 FACILITY ACCESS CONTROLS
7.2 DEVICE & MEDIA CONTROLS
7.3 TECHNICAL CONTROLS
1st annual guidance on Tech Safeguards 2/18/10
7.4 NETWORK SECURITY MANAGEMENT
8.0 DATA PROTECTION & USER ACCESS CONTROLS
8.1 ACCESS CONTROLS
8.2 DATA ASSURANCE
9.0 DEFINITIONS


Privacy & Security Work Roadmap 2008 - 2016
California Privacy and Security Advisory Board
CalOHII Projects & Products
Meaningful Use Stage 1 Criteria
2011
Legal Recommendations
Committee Support
Clin Sum Use/ Purpose Limitation TG
Qual Rpt Use/ Purpose Limitation TG
PHR/ Patient Access TG
Technical Controls TG
Device & Media Controls TG
Security Incident Mgmt TG
Information Security TG
Data Assurance Imp JTG
Data Segregation Imp JTG
Risk Mgmt Imp JTG
Education Materials
Patient Consent Materials
Provider Consent Materials
2012
Legal Recommendations
Committee Support
Research TG
De-Identification TG
Appropriate Use Limitations TG
Payment Use/ Purpose Limitation TG
Compliance Auditing TG
Workforce Sec Mgmt TG
Frequency of Actions TG
Technical Controls Imp JTG
Device & Media Controls Imp JTG
Security Incident Mgmt Imp JTG
Information Security Imp JTG
Meaningful Use Stage 2 Criteria
2013
Legal Recommendations
Committee Support
Health Care Oversight TG
Required by Law
Law Enforcement TG
Contingency Planning TG
Facility Access Controls TG
Network Security Mgmt TG
Compliance Auditing Imp JTG
Workforce Sec Mgmt Imp JTG
Frequency of Actions Imp JTG
Consent Demo
Consent Registry Demo
Collection Limitation Demo
Education Materials for Consent Demo
Data Segregation / Sensitive Info Demo
2-Factor Authentication Demo
Authorization Demo
Patient Access Demo
DURSA Demo
Legislative Proposals
Compliance deadline Acctg for Disc! 8/1/11
Initial compliance deadline for older systems to comply with Acctg for Disc! 2/18/12
Extended compliance deadline for newer systems to comply with Acctg for Disc! 2/18/12
Clarification of ability to pursue Civil Penalties 2/18/11
Req'ts to impose Civil Penalties of willful Neglect 2/18/11
Regulations for Methodology of HIPAA Penalties 2/18/12
1.0 HIE GENERAL POLICY
2.1 HIECONSENT POLICY
2.2 RIGHT TO NOTICE OF PRIVACY PRACTICES
2.3 REQUEST RESTRICTIONS
2.4 ACCESS TO INFORMATION BY THE INDIVIDUAL & OTHERS
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4.5 TRAINING
4.6 COMPLAINT PROCESS
4.7 MITIGATION OF HARM
4.8 SANCTION & ENFORCEMENT POLICY
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5.1 INFORMATION SECURITY (ORGANIZATION & RESPONSIBILITY)
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8.0 DATA PROTECTION & USER ACCESS CONTROLS
8.1 ACCESS CONTROLS
8.2 DATA ASSURANCE
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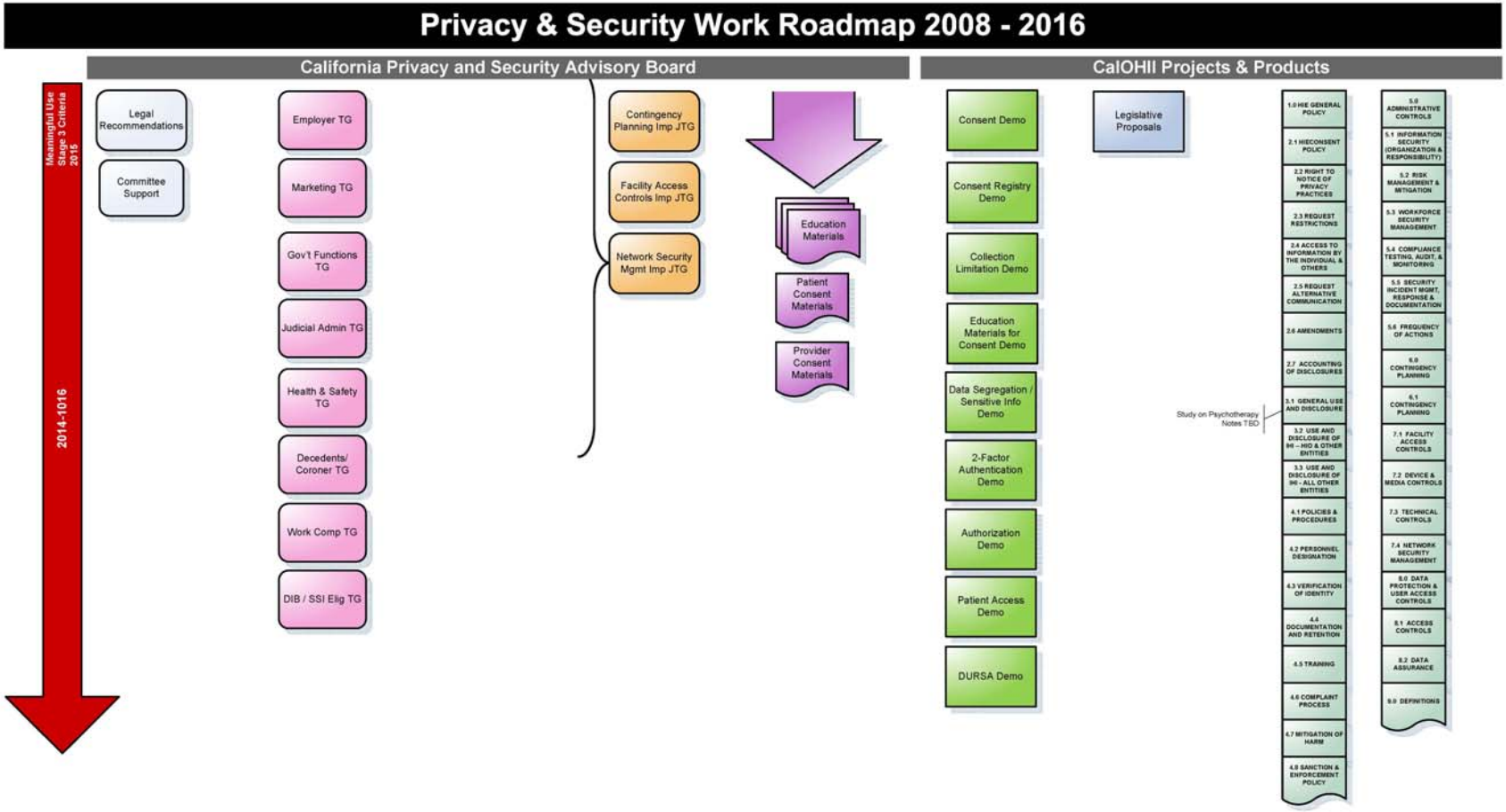
Privacy & Security Work Roadmap 2008 - 2016
California Privacy and Security Advisory Board
CalOHII Projects & Products
Meaningful Use Stage 3 Criteria 2015
2014-1016
Legal Recommendations
Committee Support
Employer TG
Marketing TG
Gov't Functions TG
Judicial Admin TG
Health & Safety TG
Decedents/ Coroner TG
Work Comp TG
DIB / SSI Elig TG
Contingency Planning Imp JTG
Facility Access Controls Imp JTG
Network Security Mgmt Imp JTG
Education Materials
Patient Consent Materials
Provider Consent Materials
Consent Demo
Consent Registry Demo
Collection Limitation Demo
Education Materials for Consent Demo
Data Segregation / Sensitive Info Demo
2-Factor Authentication Demo
Authorization Demo
Patient Access Demo
DURSA Demo
Legislative Proposals
Study on Psychotherapy Notes TBD
1.0 HIE GENERAL POLICY
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5.3 WORKFORCE SECURITY MANAGEMENT
5.4 COMPLIANCE TESTING, AUDIT, & MONITORING
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5.6 FREQUENCY OF ACTIONS
6.0 CONTINGENCY PLANNING
6.1 CONTINGENCY PLANNING
7.1 FACILITY ACCESS CONTROLS
7.2 DEVICE & MEDIA CONTROLS
7.3 TECHNICAL CONTROLS
7.4 NETWORK SECURITY MANAGEMENT
8.0 DATA PROTECTION & USER ACCESS CONTROLS
8.1 ACCESS CONTROLS
8.2 DATA ASSURANCE
9.0 DEFINITIONS

Appendix 12: Request for Information for Governance Entity

Request for Information:
Potential Health Information Exchange Governance Entity

Purpose of this Request for Information

This Request for Information (RFI) is issued by the California Health and Human Services Agency (CHHS) to determine whether one or more organizations might qualify to be the State's Health Information Exchange (HIE) Governance Entity. CHHS will evaluate responses to the RFI and may, at its sole discretion, at the conclusion of the evaluation process select **one** of the respondents to be the State's HIE Governance Entity. The State reserves to right to initiate confidential discussions with one, some or all applicants regarding any response submitted to ask questions and clarify respondent intent and meaning. These discussions may include suggestions from the State to revise one or more aspect of the response.

The State may determine that no respondent will be selected as the HIE Governance Entity.

If the State selects an HIE Governance Entity, it is possible that the HIE Governance Entity will become the State-Designated Entity, as defined in Section 3013 of the Health Information Technology for Economic and Clinical Health Act' (HITECH), and therefore eligible to apply for specific federal funds on the State's behalf. The State may elect not to use a State-Designated Entity and instead apply directly for funds.

The purpose of California's advancement of health information technology and exchange is to improve safe and secure patient and provider access to personal health information and decision-making processes, benefiting the health and wellbeing, safety, efficiency, and quality of care for all Californians.

This purpose is supported by the following goals:

- To ensure patients have safe, secure access to their personal health information and the ability to share that information with others involved in their care

- To engage in an open, inclusive, collaborative, public-private process that supports widespread EHR adoption and a robust, sustainable Statewide health information exchange
- To improve health care outcomes and reduce costs
- To maximize California stakeholders' access to critical ARRA stimulus funds
- To integrate and synchronize the planning and implementation of HIE, HIT, teleHealth and provider incentive program components of the federal stimulus act
- To ensure accountability in the expenditure of public funds
- To improve public and population health through stronger public health program integration, bio-surveillance and emergency response capabilities

Please refer to www.hie.ca.gov for additional details of the State's initiatives in this area.

The Federal Office of the National Coordinator released the funding opportunity announcement for the ***State Health Information Exchange Cooperative Agreement Program*** on August 20, 2009. Selection of a HIE Governance Entity is, therefore, on an accelerated timeline and this process reflects that sense of urgency.

A Framework for HIE

The following framework describes the State's priorities for health information exchange. This framework has four components or "corners"; information exchange priorities that support meaningful use, trust, a technical model, and sustainability. Applicants to this RFI should use this framework to develop and submit proposals

HIE priorities - achieving meaningful use: Eligible hospitals, clinics and providers will be required to exchange health information to achieve meaningful electronic health record use and thereby obtain Medi-Cal and Medicare incentives payments. To support these requirements, California's health information exchange capabilities must be expanded rapidly and align with meaningful use. These health information exchange meaningful use priorities include:

- Electronic prescribing and refill requests, including prescription fill status / medication fill history

- Clinical laboratory ordering and results delivery
- Clinical summary exchange for care coordination and patient engagement
- Electronic public health reporting (e.g.., immunizations, laboratory results, etc.)

Trust: HIE infrastructure must be developed and sustained in an environment that fosters trust. This requires an open, inclusive and transparent process that is respectful of divergent views, but that drives a process towards consensus. Any initiative that does not make this a top priority will not succeed.

A Supportable Technical Architecture: California has assets that should be leveraged to support HIE. These assets include: hospital, clinic and practice based electronic health record systems, functioning and nascent information exchanges, broadband networks, public health registries, lab and reporting systems, and pharmacy and lab networks. These assets can and should support a vendor-agnostic, service-oriented HIE model.

Sustainability: California may receive up to $40 million in Federal funding for HIE. While this is a significant investment it represents only a fraction of what is ultimately needed to develop and sustain ubiquitous HIE services. Any HIE model must determine how funding will be obtained to further build out the infrastructure, and to sustain exchange that is built once the $40 million is invested. The sustainability model must encompass all aspects of exchange, including regional and other health information exchanges.

Finally, during the planning process, CHHS received stakeholder feedback indicating that there should be a separation between a governance entity and operating entities that build and maintain the HIE. However, this separation does not rule out that centrally operated services could be sponsored by the HIE Governance Entity, either through contracts or more direct oversight and management. Such services could only be sponsored by the HIE Governance Entity if the services are requested and driven by the critical stakeholders: hospitals, physicians, health plans and payers, consumers and other providers. Respondents to this RFI will need to describe how such a separation would either bolster or undermine efforts to support HIE efforts, specifically with respect to the four corners of the framework referenced here.

Responses to the RFI must address how a governance entity would invest up to $40 million to support these priorities to develop and sustain HIE infrastructure in California.

Role of California's HIE Governance Entity

California must align its health information exchange implementation and priorities with the current federal definition of meaningful use to ensure that its eligible Medicare and Medi-Cal providers are able to demonstrate meaningful use and are positioned to receive the maximum incentive reimbursement and avoid future reimbursement penalties. With this as an imperative, immediate priorities have been delineated to support Medicare and Medi-Cal provider. CHHS will work with the HIE Governance Entity to coordinate activities across California and its many stakeholders, including Medi-Cal and State and local public health programs. The Governance Entity's primary responsibilities will, at a minimum, include:

- Establishing a technical architecture that is vendor-agnostic and leverages California's information technology infrastructure to enable the rapid propagation of information exchange services across the State.
- Convene a broad array of hospitals, physicians, other providers and other stakeholders to agree to and support a set of shared services.
- Determine the most efficient way to spend limited funding to support the identified priorities of lab data exchange, pharmacy / Rx history, continuity of care, and public health, and other priorities as identified by the institutions engaged in health information exchange.
- Perpetuate and support HIE services beyond stimulus funding.

These responsibilities must also support the priorities described in the State HIE Cooperative Agreement Program announced by ONC on August 20. In that announcement, ONC expects States to use their authority, programs, and resources to:

- Develop State level directories and enable technical services for HIE within and across States.
- Remove barriers and create enablers for HIE, particularly those related to interoperability across laboratories, hospitals, clinician offices, health plans and other health information trading partners.
- Convene health care stakeholders to ensure trust and support for a Statewide approach to HIE.

- Ensure that an effective model for HIE governance and accountability is in place.
- Coordinate an integrated approach with Medicaid and State public health programs to enable information exchange and support monitoring of provider participation in HIE as required for Medicaid meaningful use incentives.
- Develop or update privacy and security requirements for HIE within and across State borders.

In addition, States may choose to enter into multi-State arrangements. States submitting multi-State applications will be evaluated at both the multi-State and individual State level; the multi-State plan will be evaluated as a whole, but State plans must be sufficient at the individual State level as well. For multi-State applications, one State or SDE must act as the responsible fiscal agent.

Additional areas of responsibility can be found in Section VI. HIE Governance Entity Proposed Areas of Responsibility. Specific organizational requirements can be found in Exhibit A.

The Secretary of CHHS may also convene an Advisory Committee to advise the work of the HIE Governance Entity. The HIE Governance Entity will work cooperatively with any such Committee and other State of California sponsored committees, Boards, Departments and Agencies in the conduct of all activities.

RFI Response Format and Content

This section articulates the RFI Response format and content. CHHS encourages respondents to be thorough, thoughtful and succinct. Response Sections 2 and 3 are expected to be in a detailed narrative. Narratives must be in 12 point font and limited to 10 pages or less for both Sections. The 10 page limit does not apply to the Cover Letter, Interim Financing, Organizational Requirements Matrix, Biographies and Letters of Support. Please do not include any other attachments.

Submission and Timeline

Proposals must be submitted electronically to hie@chhs.ca.gov no later than ***5pm PDT, Thursday September 10, 2009***. Responses will be reviewed against the criteria defined in this RFI by a selection committee comprised of State employees. The selection committee will evaluate and score each proposal separately. Selection committee consensus scores will be made public and are not subject to appeal or protest. CHHS will respond to RFI applicants no later than Tuesday September 29, 2009.

The response must be presented in the following sections and in the following order:

Cover letter

Signed by an individual legally authorized to bind the organization

Governance entity approach and plan

Each response must lay out a plan for meeting the Federal and State requirements. Assuming California or its designee applies for and receives up to $40 million in federal funding to support HIE adoption, respondents should detail their plans and approach regarding how they intend to work with California and CHHS to:

- Establish a technical architecture and standards.
- Establish privacy and security standards and enforcement.
- Define the set of State-level shared services and repositories for California.
- Rollout services and propagating throughout California.
- Achieve sustainability in order to perpetuate and support the HIE infrastructure beyond the potential $40M in federal funding.
- Analysis of whether the State should pursue a multi-State approach and why

The respondents' plans should be specific and succinct. Responses must specifically outline the following for each of the items above:

- The role of the governance entity and the staffing model of the organization.
- How dollars will be spent by the governance entity for its own operations as well as for dispersed funds for HIE services.
- Timeframes for all activities.
- How existing investments and existing HIE activity will be leveraged.
- How the approach will achieve trust, participation, buy-in and, ultimately, adoption among stakeholders.

Separation of governance from operations

CHHS received strong stakeholder feedback during the planning process that Stated that there needs to be a separation of governance from operations in the governance entity. However, this separation does not rule out centrally operated services. Respondents are asked to respond to the following:

- How does the separation of governance from operations impact the components of the respondents plan and approach above? Specifically comment on the impacts to stakeholder buy-in and trust as well as costs.
- Given the separation of governance from operations, what is the governance entity's role in providing State-level services?
- What process would be used to determine if and when it might be appropriate for the HIE Governance Entity to initiate the provision of some services?

Interim Financing

Please provide a chart that clarifies the financial needs of the organization, including salaries and benefits, contract costs (and types of contracts anticipated), rent and other facilities costs, travel, other expenses.

Organizational requirements matrix

Exhibit A provides other specific requirements of the Governance Entity, and asks you to describe how your organization currently meets these requirements and, where there are gaps, how you propose to meet the requirements. The overall timeline for achieving electronic health record meaningful use for eligible providers is very short. The State must work expeditiously to do its part to maximize the potential reimbursement for which providers are eligible. As a result, we have determined that the HIE Governance Entity should meet all of the established requirements by March 31, 2010. Please note that it is not necessary that the respondent currently meet all of the requirements in order to submit a response to this RFI. In developing the response, emphasis should be placed on clearly articulating a feasible plan to meet the requirements.

Respondents must complete Exhibit A and include it as the response. Description of how the current organization meets the Requirements, gaps identified between the current organization and the Requirements and the plan to bring the organization into compliance with each Requirement.

Exhibit A below contains four columns.

Requirement: This column contains the specific requirement that must be met by March 2010.

Current Organization: In this column, describe how and to what extent your current organization meets the requirement.

Identified Gaps: In this column, describe the gap between the current organization and the requirement. Describe how the current organization fails to fully meet the requirement.

Strategy to Address the Gap: In this column, describe the proposed strategy to address the identified gaps. This strategy should included estimated resource needs (personnel and financial) and timeline for filling the gap.

Biographies

Brief biographies (1-3 pages) of Board members and senior executives (current and proposed to the extent known).

Letters of Support

Please provide letters of support from various stakeholder organizations within California. Letters of support should be from different stakeholder types (e.g. hospital or hospital system, provider group, RHIO, consumer group, community health center, etc.). Letters of support should come from more than one region within the State. Safety net organizations should be well represented in the letters of support. An applicant that proposes a multi-State plan should provide letters of support from other States.

An applicant that proposes a multi-State plan should provide letters of support from other States.

Evaluation

The CHHS will evaluate each organization's proposal individually and assign a score to each section. In assigning scores, the Selection Committee will take into consideration the severity of the gaps (if any) between the current organization and the requirements and the overall feasibility of the proposal to resolve these gaps. CHHS reserves the right to talk with any or all respondents about their response to this RFI as part of the evaluation process. All such discussions will be confidential.

HIE Governance Entity Proposed Areas of Responsibility

Convene	Coordinate	Manage
• Provide neutral forum for all stakeholders • Educate constituents & inform HIE policy deliberations • Advocate for statewide HIE • Serve as an information resource for local HIE and health IT activities • Track/assess national HIE and health IT efforts • Facilitate consumer input	• Develop and lead plan for implementation of statewide solutions for interoperability. • Promote consistency and effectiveness of statewide HIE policies and practices • Support integration of HIE efforts with other health care goals, objectives, & initiatives • Facilitate alignment of statewide, interstate, & national HIE strategies, RECs, Medi-Cal, etc. • Coordinate with CalPSAB around privacy and security policies	• Issue and manage grants • Develop legal analyses • Oversee accounting and budgeting • Possibly contract for statewide shared services such as master patient index • Evaluation and assessment • (Multi-State scenario only): manage and support other State HIE programs

Exhibit A

Requirement	Current Organization	Identified Gaps	Strategy to Address Gap
Organizational			
Not-for-profit organization under California law			
Diverse board composition from multiple types of organizations from multiple regions throughout the State			
Board must include: Secretary of CHHS, the Deputy Secretary of HIT, representatives from the Senate and the Assembly and others as deemed necessary by the Secretary of CHHS as voting members of the HIE Governance Entity			
Experienced and qualified executive management team and staff, who act under the direction of the Organization's Board of Directors to address privacy and security, technical approach and health IT adoption			
Adequate workgroups and subcommittees to reasonably accomplish State HIT/HIE goals			
Demonstration that one of its principle goals is to use information technology to improve health care quality and efficiency through the authorized and secure electronic exchange and use of health information			
Commitment to protect the public's interests and ensure accountability of HIEs in the State			
Nondiscrimination and conflict of interest policies that demonstrate a commitment to open, fair and nondiscriminatory participation by stakeholders			
Does not directly operate a HIE or have any financial stake in a HIE or HIE vendor			
Articles of Incorporation and Bylaws that clearly describe who the members are, how members are selected, and the powers that members will have			
Appropriate insurance			

Requirement	Current Organization	Identified Gaps	Strategy to Address Gap
Trusted, independent voice that can reflect a diverse array of interests and perspectives on key policies and standards			
Ability to convene and facilitate multiple collaborative, workgroups in an open, public and transparent way that are represented by institutions and individuals from all regions of California(and if multi-State, other States and their constituents). Demonstrated expertise in the following workgroup functions would include but not be limited to Health Outcomes Privacy and Security Technical Approach Sustainability Health IT Adoption			
Experience with outreach and advocacy, specifically the advocacy of HIE			
Support the development and promulgation of Statewide HIE policies			
Health Outcomes			
Support federal requirements and goals described in Section 3013 of the Health Information Technology for Economic and Clinical Health Act' (HITECH)			
Ensure that California's 2010 and 2020 health outcome goals and appropriate regional health outcomes goals and priorities are supported by HIE activities			
Privacy and Security			
Coordinate with CalPSAB to define privacy and security policy and guidance			
Ability to monitor implementation of California's privacy and security policy and guidance and, work with appropriate State agencies to enforce them			
Demonstrated knowledge and experience of existing privacy and security issues			
Technical			
Ability to track, assess and align California HIE and HIT efforts with national HIE and health IT efforts and standards. Support, promulgate, and where necessary develop interoperability standards			

Requirement	Current Organization	Identified Gaps	Strategy to Address Gap
Technical expertise on staff with the ability to manage complex technology policies and practices			
Ability to define, prioritize, select, leverage and manage shared health it services across a wide range of stakeholders			
Management			
Demonstrated ability to acquire and train appropriate resources			
Experience in managing contracts for various types of services including: Technology Legal Administrative Professional			
Have a plan to coordinate and collaborate with other critical California health IT efforts, including, but not limited to: Medi-Cal Public health Regional extension centers Workforce initiatives Broadband and telehealth			
Implement a dispute resolution mechanism to adequately and appropriately reconcile divergent opinions and perspectives			
Multi-State proposals should define commitments to working with other States and describe the advantages that a multi-State approach would confer to California			
Evaluation and Assessment			
Evaluation and assessment experience in complex programmatic and fiscal environments focused on health improvement.			
Develop evaluation and accountability measures and framework for HIE implementation and health IT initiatives including: Assessment of quality improvement benefits created through HIE efforts within the State Tracking and reporting progress of HIE and relevant Health IT initiatives|Normal|ZZMPTAG| Tracking, assessing, validating and reporting stakeholder activities and progress			

Requirement	Current Organization	Identified Gaps	Strategy to Address Gap
Financial			
Experience in development and administration of grant-making processes consistent with State and Federal Guidelines, including experience managing large Federal grants			
Proven experience with raising funds from multiple sources – both public and private			
Robust administrative and financial processes, including adherence to GAAP and all State and federal laws			
A plan for supporting ongoing operations and oversight without public resources or funding			

Appendix 13: California HIE Financial Model

The Operational Plan is a living document, and will be updated on an ongoing basis. This section will be revised at a future time.

Appendix 14: Tool for Collecting Strategies for Patient Engagement

Tool for Gathering Patient Engagement Content for Operational Plan

Instructions: Please fill in the boxes with any examples or use cases that you believe we should address in the workgroup.

Not every box may need an entry.

MU Goals and Goals/Objectives	Draft: Team Lead, Team Member for Jan 4/11	Final, Team Lead for March 29	Strategy Summary	Electronic prescribing and refill requests including sharing med lists with patient	Clinical laboratory ordering and results delivery	Clinical summary exchange for care coordination and patient engagement	Recommend tools to ensure that patients have access/control of their health information	Improve health outcomes (reminders, decision support)	Inculcate patient with sense of accountability for health	Insurance eligibility checks and portability of patient information to payor	Improve medication and treatment regimen adherence	Empower individuals to take active role in their own health	Using the Teachable Moment to Engage Patients in Care
Consumer / Patient measurements of success "how do we know it worked"?													
Electronic access for patients				How does Electronic prescribing connect with the goal of electronic records being accessible to patients, and between providers									
Patient-specific educational resources													
Clinical summaries for each patient encounter													
Access for all patients to PHR populated real time with health data													

MU Goals and Goals/Objectives	Draft: Team Lead, Team Member for Jan 4/11	Final, Team Lead for March 29	Strategy Summary	Electronic prescribing and refill requests including sharing med lists with patient	Clinical laboratory ordering and results delivery	Clinical summary exchange for care coordination and patient engagement	Recommend tools to ensure that patients have access/control of their health information	Improve health outcomes (reminders, decision support)	Inculcate patient with sense of accountability for health	Insurance eligibility checks and portability of patient information to payor	Improve medication and treatment regimen adherence	Empower individuals to take active role in their own health	Using the Teachable Moment to Engage Patients in Care
Offer patient-provider secure messaging capability													
Provide access to patient-specific educational resources in primary language													
Record patient preferences including ability to opt-out													
Documentation of family medical history													
Upload data from home monitoring devices													
Mobile, entertainment, and games												UC 9-13: The potential of cell phones to supplement the delivery of health- care services will continue to grow and lead to more sophisticated and personalized applications.	
Patients have access to self-management tools													
Electronic reporting care plan, costs, and on experience of care													

MU Goals and Goals/Objectives	Draft: Team Lead, Team Member for Jan 4/11	Final, Team Lead for March 29	Strategy Summary	Electronic prescribing and refill requests including sharing med lists with patient	Clinical laboratory ordering and results delivery	Clinical summary exchange for care coordination and patient engagement	Recommend tools to ensure that patients have access/control of their health information	Improve health outcomes (reminders, decision support)	Inculcate patient with sense of accountability for health	Insurance eligibility checks and portability of patient information to payor	Improve medication and treatment regimen adherence	Empower individuals to take active role in their own health	Using the Teachable Moment to Engage Patients in Care
Performance metrics for measuring achievement of patient engagement objectives													
Recommendations for communications plan to patients and families	Robin												
Issue identification and risk mitigation strategies													
Promote family engagement													
Competitive commercial marketplace													

Appendix 15: Technical Advisory Group Business Requirements Matrix

Meaningful Use Criterion	Relevant HIE Capability	Proposed Cooperative Shared HIE Service	Relative Value	Efficiencies Achieved	Revenue Generating?	Envisioned Purchasers of the Service	Relative Effort	Anticipated Barriers	Aligned Incentives	Must Have vs Nice to Have	Sequence
<The relevant M.U. criterion>	<Description of general HIE capabilities required to achieve the M.U. criterion>	<Description of the specific Service that could be provided under the HIE Cooperative Agreement program to facilitate the relevant HIE capability>	<Value of the proposed CS-HIE Service to stakeholders, given the current market/landscape --Low, Med, High>	<Specific efficiencies that may be created by the proposed CS-HIE Service, both to specific stakeholders and to the collective health care system>	<Would stakeholders be willing to pay for the CS-HIE Service -- Yes/No? If so, in what way -- subscription fee, transaction fee, community tax, etc.?>	<Who would be willing to pay for the CS-HIE Service?>	<Effort required to develop and provide the proposed CS-HIE Service -- Low, Med, High>	<What are the barriers to the successful development, use, and sustainability of the proposed CS-HIE Service?>	<How well-aligned would the incentives of various stakeholders be to use the proposed CS-HIE Service? -- Low, Med, High>	<How critical is the proposed CS-HIE Service to enabling other elements of HIE, encouraging adoption of CS-HIE infrastructure, etc.>	<Logical sequence in which the proposed CS-HIE Service should be developed relative to other CS-HIE Services -- primary or secondary?>
EXAMPLE											
Incorporate clinical lab-test results into EHR as structured data	Infrastructure for laboratories to securely transmit structured laboratory results to the EHR or EHR module of the appropriate provider(s) in the specified standard format. The transmissions may occur directly between labs and EHRs or via a third-party.		High				Medium		High	Unknown	

Appendix 16: Scenarios Illustrating Use of HIE Architecture for Meaningful Use

This section contains examples of the way that HIE Services may be used (or not used) by various types of stakeholders to achieve meaningful use. Its purpose is to illustrate the value of the HIE Services where they are needed, the ways that HIE Services may interact with other HIE services available in California, and the options that stakeholders have with respect to using or not using the HIE services to achieve meaningful use.

Electronic transmission of structured laboratory results to EHRs

Example HIE Use Case:

CareMore Hospital has a laboratory outreach program for patients seen at the offices of local community physicians. These physicians are scattered around the community in practices of varying sizes using different EHR systems. The hospital is medium-sized and does not have the resources to implement a separate laboratory interface for each of these practices and EHR systems.

Each of the physician practices is registered in the HIE Entity Registry, and all test orders sent to the laboratory include an identifier for the entity from which the order originated. Each order also includes an identifier for the ordering provider that is unique to the entity. The CareMore hospital laboratory uses this information to correctly route electronic laboratory results to the ordering providers.

For each result that it wishes to deliver electronically, the laboratory system looks up in the HIE Entity Registry the practice from which the test was ordered. Within that registry entry is a URL for an electronic directory of providers at that entity. Larger practices may host their own provider directories. Smaller practices use the HIE Provider Directory Service for this function. The laboratory submits a query to the directory URL to retrieve specific addressing instructions where the ordering provider may receive laboratory results.

These addressing instructions include the URL to which the transmission should be directed and one or more sets of communication protocols and data standards that may be used. At least one set of these protocols/standards must conform to the designated standards of the State HIE Cooperative Agreement Program (in this case, this is the protocol and data standard that the laboratory will use). Also, the URL indicated in these addressing instructions must reference an entity registered with the Entity Registry Service (either the physician practice itself or a registered intermediary, such as an HIO). Based on this information, the laboratory system generates an appropriately formatted result message (which includes the name and other identifying information for the patient) and securely transmits this to the indicated

entity via the selected communication protocol.

Within this transmission is included the identity of the ordering provider, a digital certificate for CareMore hospital, an authentication assertion signed by CareMore hospital that verifies the laboratory system that initiated the transaction, and an authorization assertion signed by CareMore hospital that verifies the role of the laboratory system with respect to the patient, as well as the reason for the information exchange. Before transmitting these data, the laboratory system verifies that the receiving system specified in the addressing instructions has a valid active entry in the Entity Registry (by ensuring it has an active certificate) and that the actual recipient of the transmission is, in fact, the same entity (by authenticating it at the outset of the transaction).

The address to which a laboratory result is sent may be:

1. The EHR at ordering provider's practice, in which case the result is loaded into the patient's record in that EHR and the provider is notified.

2. An intermediate routing service that further directs the result to the appropriate EHR. Such a service may be provided by an HIO, by an EHR vendor, or by another entity. In all cases, the routing service that initially receives the result and forwards it to the provider must be a registered entity.

In certain communities, a subset of the physician practices may be able to receive results directly from the hospital laboratory (perhaps the larger practices), whereas other practices may require an intermediate service for routing and/or translation. In either case, the Entity Registry Service and the Provider Directory Service allow the laboratory to (1) ascertain the proper routing information by accessing a single source (i.e., the Entity Registry Service) and (2) implement a single protocol to deliver laboratory results to any community provider via the default protocol required by the State HIE Cooperative Agreement Program.

Note that, for certain ordering providers and/or physician practices, the CareMore Hospital laboratory could choose to circumvent use of the HIE Entity Registry and the other mechanisms described above to send results directly to the EHR of that laboratory (for example, a very large practice with whom the hospital already has a legacy laboratory interface). This interface could continue to operate unchanged if it serves the needs of the hospital and the practice, while the delivery of results to other practices and providers could use the resources of the State HIE Cooperative Agreement Program.

Patient access to health information

Example HIE Use Case:

Dr. Moore is a rheumatologist in a mid-size multi-specialty group, MultiSpec, that has used the "Acme" EHR system for several years. Acme provides an effective paperless record system for MultiSpec and can export data in the CCD document format, but it is an older product that does not offer a patient-portal module. The product's vendor is relatively small and does not have the capacity to develop a patient-portal module in the near future.

One of Dr. Moore's patients, Mary Byrne, has requested to review her laboratory results and medication list as they are updated in Acme. To achieve this, Dr. Moore has advised Mary to open a personal health record account with OurPHR, a commercial vendor of PHR services. To fulfill the meaningful use criterion, Dr. Moore will send the health information to Mary's OurPHR account.

MultiSpec is an entity registered in the HIE Entity Registry Service. The OurPHR PHR system is also registered there. To authorize Dr. Moore to send data to her OurPHR account, Mary accesses the HIE Entity Registry via the OurPHR application and looks up the entry for MultiSpec. This entry contains the URL for the provider registry of MultiSpec, which may reference a registry hosted by MultiSpec itself or may reference the HIE Provider Directory Service (depending on how MultiSpec has chosen to publish its provider directory). The OurPHR application submits a query to this URL to display to Mary the providers at MultiSpec, allowing her to select Dr. Moore and other members of his staff who will be authorized to update her OurPHR account. Earlier, Mary has provided her unique OurPHR account ID to Dr. Moore.

When Dr. Moore or his staff wish to send information to Mary's OurPHR account, they log into the Acme EHR and use it to look up the entry for OurPHR in the HIE Entity Registry Service (the EHR is capable of interfacing to this service and others provided under the State HIE Cooperative Agreement program). Within this registry entry is a URL that references a directory of services provided by OurPHR. The Acme EHR accesses this directory and retrieves addressing instructions for the "update PHR record" transaction. These instructions are not specific to Mary Byrne, but allow EHRs and other applications to update the PHR records of any specified account holder, provided the update is authorized.

These addressing instructions includes a URL to which such transactions should be sent, as well as one or more sets of communication protocols and data standards that may be used for the transaction. At least one set of these protocols/standards must conform to the designated standards of the Cooperative HIE

Agreement Program. The URL address of the OurPHR system must be registered in the Entity Registry Service. Using this information, the Acme EHR generates an appropriately formatted document and securely transmits it to the indicated entity (OurPHR) via the selected communication protocol.

Within this transmission is included the OurPHR account ID for Mary Byrne, a digital certificate for the MultiSpec entity, an authentication assertion signed by the MultiSpec entity that verifies the identity and authentication of the Acme user who initiated the transaction, and an authorization assertion signed by the MultiSpec entity that verifies the role of this user with respect to Mary Byrne, as well as the reason for the information exchange. Before transmitting these data, the laboratory system verifies that the receiving system specified in the addressing instructions has a valid active entry in the Entity Registry (by ensuring it has an active certificate) and that the actual recipient of the transmission is, in fact, the same entity (by authenticating it at the outset of the transaction).

Upon receipt of this transmission, OurPHR authenticates the sender as the MultiSpec Group and verifies that MultiSpec has a active entry in the Entity Registry. The entity then uses the authentication assertion, authorization assertion, and Mary Byrne's OurPHR ID to authorize the loading of the CCD document into Mary Byrne's record.

Provide summary of care records for transitions of care

Example HIE Use Case:

Sea View hospital in San Diego is discharging John Smith after an emergency appendectomy. John Smith's regular physician is Dr. Clarence Hill at the Montrose Internist Group in La Jolla. John Smith has given the staff at Sea View Dr. Hill's name and mailing address, so that Sea View can send Dr. Hill a copy of John's discharge summary. Per the meaningful use criteria, Sea View hospital would like to send the summary electronically. Sea View hospital does not know whether Montrose Internist Group is entirely independent, is part of an IPA, participates in a regional HIO, or uses other commercial services for HIE.

The hospital clerk at Sea View hospital uses the hospital's EHR (which is integrated with the Core HIE services) to look up the Montrose Internist Group by name in the HIE Entity Registry Service. There are seven Montrose Internist Groups in California, but only one in La Jolla at the address given by John Smith. The hospital clerk selects the entity corresponding to the correct Montrose Internist Group and retrieves the entity's indicated URL for a local registry of providers there. The clerk issues a query to the directory service at this URL to look up Dr. Clarence Hill and then retrieve his specific addressing

instructions for receiving a hospital discharge summary.

These addressing instructions include the URL to which the transmission should be directed on behalf of Dr. Hill and one or more sets of communication protocols and data standards that may be used. At least one set of these protocols/standards must conform to the designated standards of the Cooperative HIE Agreement Program. Also, the URL address indicated in these instructions must reference an entity registered with the Entity Registry Service (either Montrose Internist Group or another entity serving as an intermediary for Montrose). Using this information, the Sea View EHR generates an appropriately formatted discharge summary (which includes the name and other demographic information of John Smith, for purposes of identification) and securely transmits this to the indicated entity via the selected communication protocol.

The transmission includes:

- the identity of the receiving principal (Dr. Hill),
- a digital certificate for Sea View hospital,
- an authentication assertion signed by Sea View hospital that verifies the identity and authentication of the clerk who initiated the transaction, and
- an authorization assertion signed by Sea View hospital that verifies the role of the clerk with respect to John Smith, as well as the reason for the information exchange.

Before transmitting these data, the lab system verifies that the receiving system (specified in the addressing instructions) has a valid active entry in the Entity Registry (by ensuring it has an active certificate) and that the actual recipient of the transmission is, in fact, the same entity (by authenticating it at the outset of the transaction.).

Upon receipt of this transmission, the receiving entity (which may be Montrose Internist Group or an intermediary, such as an HIO) authenticates the sender as Sea View Hospital and verifies that Sea View has a active entry in the Entity Registry. The entity then delivers the discharge summary to Dr. Hill in whatever way is appropriate. If the entity is the EHR at Montrose Internist Group, it may add the discharge summary to the record of John Smith, and notify Dr. Hill of its arrival. If the entity is an intermediary, such as an HIO, it may forward the entire transmission to the information system at Montrose Internist Group for processing. The authorization decision may be made by either the intermediary system or the EHR at Montrose Internist Group, and will be based on the information within

the transmission itself about the sending entity, the sending user, the role of the user with respect to the patient, and the reason for the transaction. The relevant assertions are forwarded with the transaction to whichever entity is required to authorize the transaction.

Variation:

If Montrose Internist Group is small and does not have the means to publish its own provider directory via the required standard mechanism, it may have another entity host its provider directory, such as a local HIO or the HIE Provider Directory Service.

If Sea View Hospital and Montrose Internist Group are part of the same HIO, the services and standards defined under the State HIE Cooperative Agreement Program may not be needed at all for transmitting the discharge summary. The HIO may maintain the registries and directories of all the relevant health care entities within the HIO, manage the authentication and authorization processes, and define the communication protocols and data standards. However, when Sea View Hospital wishes to send a discharge summary to an entity outside the HIO (e.g., in another part of the State), the hospital would need a mechanism to look up that entity in the Entity Registry and perform the other steps required, as described above. In this case, either the HIO could provide a "gateway" to translate between the mechanisms used for internal HIE and the "standard" mechanisms specified under the State HIE Cooperative Agreement Program, or the individual entities in the HIO could themselves support the standard mechanisms when communicating with entities outside the HIO. The same choice would apply to entities within integrated delivery networks or other large organizations.

Exchange of key clinical information among providers and patient-authorized entities

Example HIE Use Case:

Dr. Stenson is a cardiologist at a two-physician practice outside of Sacramento. She has recently referred one of her patients, Frank Taylor, to the Health Sciences Medical Center (HSMC) in Sacramento for a mitral valve replacement, and would like to forward key information about Mr. Taylor's medical history, current medications, allergies, and recent laboratory results to the hospital. Dr. Stenson's practice uses an EHR from a major vendor, but it is different than the EHR used by HSMC. Her EHR is capable of generating a CCD summary document and interacting with the HIE Services available in California.

The exchange of the patient summary between Dr. Stenson and HSMC is very similar to that of the discharge summary between the Sea View hospital and Dr. Hill, with the exception that HSMC requires two-factor authentication for users who request information from or supply information to its clinical

information systems. Dr. Stenson's EHR supports password authentication only. Being aware of this limitation, Dr. Stenson has registered herself with the HIE Provider Identity Service, which has rigorously verified her identity and issued her an ID card for purposes of two-factor authentication.

Dr. Stenson's EHR can interface to the HIE Provider Identity Service. This enables her to authenticate via the service using her ID card and have the authentication software or hardware solution that is generated by the service returned to her EHR. Her EHR then generates an appropriately formatted clinical summary (which includes the name and other demographic information of Frank Taylor, for purposes of identification) and securely transmits this to HSMC via the supported communication protocol.

Within this transmission is included a digital certificate for Dr. Stenson's practice (i.e., the registered entity), the authentication assertion signed by the HIE Provider Identity Service, and an authorization assertion signed by Dr. Stenson's practice that verifies the role of Dr. Stenson with respect to Frank Taylor, as well as the reason for the information exchange. Because HSMC trusts the user-provisioning and two-factor authentication performed by the HIE Provider Identity Service, the medical center will authorize the transaction. Note that, with the exception of the authentication assertion, all aspects of this information exchange are comparable to that of the discharge summary exchange described above.

Variation:

Certain entities may not accept even two-factor authentication when performed by counterparties because they lack confidence in the counterparty's procedures for provisioning users and performing authentication, for example, when information is requested or provided by a small practice that is entirely unknown to the entity holding the PHI. In these cases, there may also be a need for users at such practices to authenticate via the HIE Provider Identity Service. This may particularly be the case for entities that are not a party to multi-lateral data-use agreements that otherwise establish trust among counterparties in each other's authentication mechanisms.

Submit electronic immunization data

Example HIE Use Case:

St. Jude's, a public hospital clinic, has administered three vaccines to a young child and wishes to submit a record of these vaccinations to a regional immunization registry. The transaction may be initiated by an individual user at the hospital, or it may be initiated automatically by an EHR, a billing system, or some other information system at the hospital. In either case, the vaccination information has already been

captured by the hospital's information system, and the hospital wishes to transmit these data electronically to the immunization registry, without a user needing to manually log into the registry and re-enter the data.

The immunization registry has an entry in the Entity Registry Service, which the EHR system at St. Jude's retrieves to begin the transaction. Again, a URL is provided in this registry entry, which allows the hospital to retrieve a directory of services provided by the immunization registry and addressing information for these services. The addressing information includes the appropriate URLs for the services, as well as the supported communication protocols and data standards. The directory is hosted and maintained by the immunization registry. One of the available services is "Add an unsolicited immunization record", which specifies the use of a specific SOAP protocol and the HL7 v2.5.1 message standard with the Common Vaccine Codeset (CVX). Using this information, the hospital EHR generates an appropriately formatted immunization record, which includes the name and other demographic information of the vaccinated child, and securely transmits this to the immunization registry via the indicated communication protocol.

Within this transmission is included the a digital certificate for the St. Jude's entity, an authentication assertion signed by the St. Jude's entity that verifies the identity and authentication of the EHR user who initiated the transaction (or the application that initiated it if it was automated), and an authorization assertion signed by the St. Jude's entity that verifies the role of this user or application with respect to patient, as well as the reason for the information exchange.

Upon receipt of this transmission, the immunization registry authenticates the sender as St. Jude's hospital and verifies that St. Jude's has a valid active entry in the Entity Registry Service. The registry then authorizes the addition of the immunization record based on the attributes of the sending entity, per its digital certificate, the relationship of the authenticated user or system with respect to the patient, and the Stated purpose of the transmission. The registry then matches the patient's demographic information to its own database and adds the immunization data to the appropriate patient record. If the Entity Registry Service maintains an active listing of all valid entities and their attributes and because the data transmission entailed mutual authentication of the sending and receiving entities, the immunization registry may not need to maintain its own user registry and perform its own authentication process.

Submit reportable laboratory results electronically

Example HIE Use Case:

BioLife is a small regional laboratory in Redding, CA that performs outpatient testing for physician offices in the community. BioLife recently tested a patient specimen that was positive for hepatitis A, a reportable disease in California. The Laboratory Information System at BioLife is configured to flag all positive test results for reportable conditions and send copies of these results CalREDIE, the State's reporting system.

BioLife begins this transaction by retrieving the entry for CalREDIE in the Entity Registry Service. A URL is provided in this registry entry, which allows the L.I.S. to retrieve a directory of services provided by CalREDIE and addressing information for these services. The addressing information includes the appropriate URLs for the services, as well as the supported communication protocols and data standards. The directory is hosted and maintained by CalREDIE. One of the available services is "Submit a Reportable Laboratory Result", which specifies the use of a specific SOAP protocol, the HL7 v2.5.1 message standard, and LOINC codes. Using this information, the LIS generates an appropriately formatted lab-result message and securely transmits this message to CalREDIE via the indicated communication protocol.

Within this transmission is included the digital certificate for the BioLife entity, an authentication assertion signed by the BioLife entity that verifies the identity and authentication of the L.I.S. process that generated the submission, and an authorization assertion signed by the BioLife entity that verifies the role of this application with respect to patient, as well as the reason for the information exchange.

Upon receipt of this transmission, CalREDIE authenticates the sender as BioLife and verifies that BioLife has a valid active entry in the Entity Registry Service. CalREDIE then authorizes the processing of the laboratory result based on the attributes of the sending entity (per its digital certificate), the relationship of the authenticated system with respect to the patient, and the Stated purpose of the transmission. CalREDIE then forwards the test result to the appropriate public health database for recording and analysis. Because the Entity Registry Service maintains an active listing of all valid entities and their attributes and because the data transmission entailed mutual authentication of the sending and receiving entities, CalREDIE does not need to maintain its own registry of authorized laboratories and perform its own authentication process.

Exchange of information with non-clinical entities for care coordination

Thomas Cooper is an eight year old child who has recently been placed in a new foster home that is located in a different county from his prior placement. Thomas has been previously diagnosed with asthma and is currently experiencing coughing, shortness of breath, and a tightness in his chest consistent

with an asthma attack. His foster parents schedule an appointment for him with the family physician they use for all their family's health care, Dr. Greene. In scheduling the appointment, they inform Dr. Greene's staff that Thomas is in foster care.

Dr. Greene practices at a community clinic that is registered in the HIE Entity Registry Service. California's Statewide Automated Child Welfare Information System (SACWIS) is also registered there. SACWIS provides child welfare case workers with information and tools to manage the needs of children in their caseloads, including tools to maintain the federally-mandated Health and Education Passport (HEP), a key component of the case file of a child living in foster care. The HEP is a document that is intended to store key data about a child in order to supply caseworkers, foster caretakers, and individuals involved in the health and education of the child with essential information about the health and educational status of the child. SACWIS also manages case workers' access to and provision of information via HIE, including authenticating users and managing access controls.

In preparation for Thomas's visit, Dr. Greene's staff uses the clinic's EHR to interface to the HIE Entity Registry Service and access the entry for SACWIS, which allows Dr. Greene's EHR to retrieve a directory of services provided by SACWIS, addressing information for these services, and the supported communication protocols and data standards. The clinic's EHR accesses this directory and retrieves addressing instructions for the "access HEP" transaction. These instructions are not specific to Thomas or his case worker, Dee Andrews, but allow EHRs and other applications to access HEP data for any specific child, provided the access is authorized.

Based on this information, the clinic's EHR securely transmits the "access HEP" transaction to SACWIS. The transmission includes the name and other identifying information for Thomas (for purposes of identification), the identity of the case worker (Dee Andrews), the identity of the treating physician (Dr. Greene), a digital certificate for the clinic, an authentication assertion signed by the clinic that verifies the identity and authentication of the staff member who initiated the transaction, and an authorization assertion signed by the clinic that verifies the role of the staff with respect to Thomas, as well as the reason for the information exchange. Before transmitting the HEP data to the clinic's EHR, SACWIS verifies that the clinic has a valid entry in the HIE Entity Registry (by ensuring that it has an active certificate) and that the actual recipient of the transmission is, in fact, the same entity (by authenticating it at the outset of the transaction). Once verification has occurred, SACWIS transmits the results of the "access HEP" transaction to the clinic's EHR, which delivers it to Dr. Greene.

Once Dr. Greene has completed his visit with Thomas, his staff uses the clinic's EHR to interface to the

HIE Entity Registry Service and access the entry for SACWIS, which includes a URL for an electronic directory of case workers. The EHR submits a query to the directory URL to retrieve specific addressing instructions where Dee Andrews may receive summary of care information. The addressing instructions include the URL to which the transmission should be directed and one or more sets of communication protocols and data standards that may be used. Based on this information, Dr. Greene's EHR generates an appropriately formatted summary of care record and securely transmits it to SACWIS via the selected communication protocol. SACWIS then manages the delivery of the information to Dee Andrews and updates the HEP.

Variation:

If the clinic's EHR does not support the "access HEP" transaction, it may utilize the services of an intermediary, such as an HIO, to perform the required steps to request and receive the results of the transaction on behalf of Dr. Greene and translate them into a standard that is supported by the clinic's EHR.

Run clinical analytics to identify gaps in care with real time delivery of alert messages using advanced clinical decision technology to support care coordination

Francesca Norman is an advanced Type 2 diabetic who has recently seen an endocrinologist, Dr. Evans, at the Multi-Spec Group for hirsutism (abnormal growth of hair). Dr. Evans wants to prescribe a potassium sparing diuretic, spironolactone, to treat the patient. After registering the patient in the group's Acme EMR, the EMR calls out to the HIE to reconcile the new record with any prior medication history. When no contraindication is returned, Dr. Evans proceeds to electronically prescribe the diuretic.

Two weeks later Mrs. Norman is with her primary care physician, Dr. Jones, to go over recent kidney tests results that he ordered last month. The results are delivered via the HIE where they are also run through HIEs clinical decision support engine to analyze the laboratory values against all accessible data that the exchange can access for Mrs. Norman. The kidney results show elevated levels of proteinuria and microalbumin. The decision support engine also finds the recent diagnosis of the patient's hirsutism and a filled prescription for the potassium-sparing diuretic. Because the diuretic elevates the patient's potassium, she is contraindicated for the use of ACE inhibitor which is often prescribed, because of its renal protective indications, for Type 2 patients showing early stage symptoms of Chronic Kidney Disease. When the HIE delivers the kidney laboratory values to Dr. Jones Ubersripts EMR, an alert accompanies the results advising Dr. Jones of the patient's use of the diuretic and an advisory message includes a reminder on the contraindication of ACE inhibitors in patients with elevated potassium because

this can further increase potassium levels which would increase the risk of cardiac-mortality. The CDS alert includes an advisory message that suggests testing the patient's potassium levels and discontinuing the use of the diuretic for two weeks before starting the ACE inhibitor. Dr. Jones clicks on the feedback icon on the alert and types in a note that he has ordered tests to check the patient's potassium levels. He then posts a reminder note that is routed through the HIE to the patients PHR reminding her to stop taking her diuretic until further notice. When the potassium test order for Mrs. Norman is sent to the laboratory via the HIE, the order is also routed to the decision support engine which updates its record that the test has been ordered.

Two weeks later, Mrs. Norman returns to Dr. Jones office. The HIE has routed the potassium test results to Dr. Jones' Uberscripts EMR. Prior to their delivery, the potassium laboratory values have again been run through HIE's decision support engine. As the values are within a normal range for the patient, the decision support engine sends an alert to accompany the laboratory results advising the physician that the use of ACE inhibitor is no longer contraindicated.

Secure Messaging Use Case

Secure messaging will be an additional service provided through the HIE, not a core service. However, to illustrate some of the thinking behind the principles, strategies, and tactics of patient engagement, a subcommittee of the Patient Engagement workgroup examined the issues related to patient/provider communications that involve secure messaging, exploring how secure messaging would impact the operational nature of patient engagement.

Types of Secure Messaging:

- Between consumer / provider whether initiated by either.
- Between consumer and personal health record.
- Between consumer and administrative elements of health care. This would capture elements like scheduling appointments, requesting referrals, possibly claims tracking. Some may consider this part of the EHR interface. It can include message based prompts and reminders, initiated by clinicians and their staff to remind patients and their advocates, of recommended events and activities that are important to maintaining and improving health.
- Between consumer and education/outreach activities and materials.

Methods of access will dictate the availability and engagement of the consumer in using this service. Examples of such access methods, with specific user types, follows.

Access Method	Consumer/Patient	Provider
Mobile		
▪ Cell Phone	X	X
▪ Smartphone	X	X
▪ Netbook	X	X
▪ Laptop	X	X
Fixed		
▪ Desktop (private)	X	X
▪ Desktop (public, e.g., library)	X	--
▪ Kiosk	X	--
Application		
▪ Secure Applications	X	X
▪ Email		
▪ Social media (e.g., Facebook, Twitter)		

Secure messaging using the access methods listed above may take place through the following channels, provided that each channel can be secured to comply with CalPSAB requirements for protecting the privacy of the users.

- Email (SMTP, POP, IMAP)
- SMS – Neither Secure nor Auditable [Greg Seiler 2/2/2010]
- MMS (multimedia, possibly other formats that are not 'real-time')
- Web Services (https and SSL)
- VPN
- Fax
- Voice over IP (VoIP)

In order to create controls and protocols around the use of secure messaging to exchange information via the HIE, the following considerations were developed:

- Administrative Policies
    - Establish policy to obtain opt-in notification and acknowledgement by consumer as to risks.

- Establish policy as how to provide initial identification of consumer. For example, some organizations may require in person registration for the use of secure messaging.
- Need for policy on content and embedded materials to detail allowable information to be contained in message. The Patient Engagement workgroup and Cal eConnect will have to consider whether the information should be structured or whether to allow free text. Similarly, a policy around whether attachments are allowable and whether content or size is restricted will be needed.
- Need for policies to assign accountability, expectations for compliance, and redress of violations of policy.
- Need for policy on archiving secure messages and allowing access to those archives.

- Access Policies
  - Need for protected access for kiosks and other points of public access.
  - Monitoring of data leakage prevention, protection.
  - Encryption (communications channel, endpoints)
  - Need for Breach Notification Policies
  - Notification that information was available for review by the consumer could be done with an "out-of-bounds" notification process such as text message to cell phone.
  - Need for consensus agreements by EHR vendors and other service providers participating in HIE services to assure availability of secure messaging.

The workgroup considered the risks and issues surrounding use of secure messaging as a HIE service. Primarily, it seems likely that all messages will extend beyond the HIE, and may cross over to an external network run by the ISP, the VOIP provider, or other telecommunications provider. Many communications protocols of convenience are not suitable for the transmission of PHI under HIPAA without a patient waiving their rights to privacy under HIPAA. In response, the workgroup developed the principle that messages containing PHI should not be delivered to consumers over non-private, non-secure, non-auditable networks and protocols except where the patient knowingly and intentionally authorizes the sender of PHI to expose their PHI publicly.

Other risks include the possibility of a consumer intentionally divulging his or her access credentials identity to third-party who then abuses the knowledge by providing false information to the provider. In another possible scenario, a connected device registered to a patient is used by an unintended user. For example, a Network Connected Weight Scale registered to a post-MI CHF patient is used by visiting family member who is not the patient, transmitting false information. Finally, the perception of these risks may deter users from using the secure messaging service if it were offered. The Patient Engagement workgroup is tasked with developing mitigation strategies and policies to address these risks as part of a proposal to Cal eConnect.

Summary

As the meaningful use criteria, the needs of the California health care system, the technical specifications of the NHIN, and the availability and capabilities of the State HIE evolve, the TAC and TWG will modify the set of core and non-core services. As a primary example, as CalPSAB completes the review of privacy and security regulations and provides guidance to Cal eConnect, the TAC and TWG are responsible for harmonizing the HIE technical infrastructure to comply with that guidance.

Appendix 17: Financial Models Considered by the Finance Workgroup

Centralized Model

In this approach, the vast majority of the ONC grant funds are used by the State for HIE. The State would identify the services which would best promote HIE in California. It would rank those services and fund as many as the budget would permit. Much of the funding goes to the creation of central HIE infrastructure that is connected to the NHIN. It is expected under this approach that much of the State's HIE traffic is carried by this network through direct connection of participating enterprises and organizations. Local/regional HIOs can continue to operate, and interconnect with the State HIE if they choose (no HIO is obligated to connect). A minimal amount of funding is provided to local/regional HIOs, perhaps only to support connectivity to the State infrastructure. Standards are very important in this strategy as they are required to ensure that information flows as easily as possible.

There are several distinct advantages to this strategy, including:

- Facilitates standardized programs.
- Leverages limited funds well by making shared investments at the center that will benefit all who participate.
- May best support use of technical interoperability standards by making connection to the central infrastructure paramount and uniform.
- May provide the best coordination with large, statewide providers and insurers who can provide access to larger quantities of relevant patient information (e.g., Kaiser, VA, DoD, Medi-Cal).

Coordination with RECs may be more efficient (CalREC will service most of the State).

There are some distinct limitations as well, including:

- Concentration of power related to HIE is at the center and less in local communities or regions.
- A more uniform HIE deployment at the center may stifle innovation through forced standardization, but could also ensure efficiencies of scale not attainable through local innovation.

- Existing and emerging local/regional HIE projects may feel left out or even threatened by these activities as they are competing for both funds and the attention of stakeholders in their communities. While there is nothing wrong with competing, it should be noted that some local HIOs will compete well while others will not survive.

- Stakeholders may lack the confidence in the State's ability to deploy the HIE effectively.

- Greater proportion of funding may be needed for Cal eConnect overhead and administration than other options limiting the impact of the funding.

- State procurement is a lengthy process which will likely delay implementation, possibly for years. Cal eConnect, however, will eliminate the need to utilize the State's procurement process.

- The absence of an aggressive requirement for HIE in the CMS measures for 2011 and 2013 is the best argument against a State Heavy approach, because heavy investment may squander scarce resources prior to the establishment of definitive standards.

Mixed Model

In this approach, much of the ONC grant funds will be used by the State for HIE coordination and shared services, but some of the funds would be granted to regional HIOs with novel approaches to explore, potentially with the assistance of HIE start-up companies covering the direct costs. Grants would be awarded to viable HIOs to expand both their scope (the services that they provide) and their scale (the number of providers and hospitals served) to ensure as many eligible hospitals and providers have access to the HIE services needed to attain MU. Funds distributed to regional HIOs are offered through an open, competitive process. State-distributed funds to local/regional HIOs may be tied to connectivity to Cal eConnect and federal (NHIN) infrastructure and will require use of statewide and federal interoperability and privacy standards. Grants to HIOs would be made based primarily on the applicability of the approach across the State and on the novelty and potential for leveraging existing resources or reducing costs.

Under this approach, the State creates central HIE infrastructure of its own that will allow for both direct connection by providers and interconnection of regional/local HIOs. The State will leverage existing State and local public and private networks (such as the SAWS network) and review existing public and private HIEs, HIOs and other networks available to support the State and NHIN, including existing Claims Processing companies and Medical Associations that either have or are establishing HIEs. The

State will then identify (geographic) gaps in coverage and prioritize based upon items such as population counts, areas known to be of high need, for future coverage. State infrastructure is not merely using the NHIN backbone alone, but is connected to it. Local/Regional HIOs are not obligated to connect to statewide infrastructure.

There are several distinct advantages to this strategy, including:

- May be the best of both worlds: balancing between central statewide services to which any enterprise (large or small) can connect and local/regional initiatives instantiated by HIOs.
- Allows for a critical examination of when it makes sense to provide central services and when to allow local HIOs to be more independent.
- Provides good leverage of limited funds through careful coordination and investment in local/regional activities where it makes sense, and central services where it is most beneficial or necessary due to gaps in HIO coverage.
- Good likelihood of maintaining/enforcing interoperability technical standards.

There are some distinct limitations as well, including:

- May be the worst of both worlds: there may be inadequate funding for either statewide services or local HIOs because of competition between the two approaches for limited dollars.
- State procurement is a lengthy process which will delay implementation, possibly for years.
- Previous State procurement of large scale health data technology has seen spectacular failures (e.g., WebCMR).
- Local HIOs may feel unable to move forward at their own pace as they wait for statewide direction and decisions.
- The State may be left behind as local HIOs, not waiting for the State, start their own process of innovation and cooperation.
- The State may adopt unique standards that are incompatible with federal data standards

- Relies on an unproven assumption that health data networking requires substantial State intervention
- It is unlikely that State coordination will escape political pressure.

Decentralized Model

In this approach, much of the ONC grant funds would be granted to regional HIOs under clear guidelines to solve HIE problems whose solutions could reduce costs, resources or time constraints and only the minimum necessary funds will be used by the State for HIE coordination and limited shared services. Grants will be awarded to HIOs to further (or initiate) their deployments. Funds distributed to regional HIOs are offered through an open, competitive process. There is little central State HIE infrastructure in this scenario, providers connect to local/regional HIOs who themselves connect directly to the NHIN as needed. The State would develop the minimum necessary level of shared services, and would coordinate governance of local/regional HIOs to ensure adherence to statewide policy and standards. Grants to HIOs would be made based primarily on the applicability of the approach across the State and on the novelty and potential for leveraging existing resources or reducing costs.

There are several distinct advantages to this strategy, including:

- Leverage of existing local/regional HIEs to their fullest, allowing current forward momentum to proceed unimpeded and even more encouraged.
- Recognition and reliance on the power of the local nature of health care in the State.
- Maximizes the proportion of funds used directly for HIE deployment by distributing more than is held centrally.
- Successful implementation with the lightest possible State participation is more resilient when the State has budget difficulties
- Incentivizes creative solutions
- Places more control and accountability close to the provider through reliance on regional/local HIOs in communities.
- Prevents heavy-handed interference by the State in private sector innovation

- Should support closer coordination between HIE and REC activities directly with providers.
- Implementation may be quicker as local HIOs can make purchase decisions more quickly than a statewide organization.
- Allows for faster adoption of emerging standards
- Avoids the disincentive of legacy reluctance to adopt new standards, which is inherent in greater State involvement

There are some distinct limitations as well, including:

- May be more difficult to leverage relationships with large, statewide providers and insurers who can provide access to larger quantities of relevant patient information and often want to do so through centralized facilities and interfaces (e.g., Kaiser, VA, DoD, Medi-Cal).
- Economies of scale harder to leverage as more of the funding is supporting local, potentially duplicative activities.
- Limited expertise harder to leverage as many activities are distributed around the State.
- Some smaller providers, or providers in an area not serviced by a regional/local HIO, may not have an effective way to participate in HIE activities.
- If not managed carefully, interoperability technical standards may be harder to enforce.

Appendix 18: Evaluation Framework for Patient Engagement

The Metrics and Measurements Subcommittee of the Patient Engagement Workgroup developed the following metrics worksheet to measure the achievement of a functional, effective HIE:

Effective Year: 2011
Requirement/Objective: Engage patients and families in their health care.
Target (Definition): Provide patients with an electronic copy of their health information (including diagnostic test results, problem list, medication lists, allergies, discharge summary and procedures), upon request.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide patient with any requested materials such as laboratory test results, blood work results, etc.	1) # patients aware of availability of information 2) % of providers with capability	1) % of patients and/or their representative electronically requesting information or requesting electronic information. 2) % distribution to patients	1) % Patient's subsequent re-use of the capability. 2) # / % patients responding to information pushed to them.	1) Small patient population with personal internet access. 2) Issues with multiple users, elderly patients. Consider patient and/or their representative (proxy)	This should be part of training and education of patients It should be identified as operational and material savings for covered entities
Data Source:	1) Self-reporting by physician office	Physician records / EHR / PHR	E-mail, web page		
Form of Metric (data structure):	1) # patients aware of availability / total # of patients. 2) # providers with capability/total providers	1) # patients requesting info / total # of patients. 2) # patients receiving information / # patients with requests	Returned (bad) e-mails / # notified		
Frequency of Reporting	Quarterly or Annually	Frequency of report reporting	Ad hoc		

Effective Year: 2011
Requirement / Objective: Engage patients and families in their health care.
Target (Definition): Provide patients with timely electronic copy of their discharge instructions and procedures at time of discharge (does not include inter-facility transfers.)

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide patient with discharge instructions indicating that laboratory and other results will be available within 96 hours.	% of hospitals or EPs who have the capability	% of discharge orders delivered electronically	Quality, self-management, readmits. (TBD). Verified receipt and understanding of materials	Small patient population with personal internet access.	This should be part of training and education of patients It should be identified as operational and material savings for covered entities
Data Source:	Self-reporting by hospital or physician office	EHR	E-mail, web page		
Form of Metric (data structure):	# patients aware of availability / total # of patients.	# of results delivered electronically / total # of results (per patient)	Returned (bad) e-mails / # notified		
Frequency of Reporting	Quarterly or Annually	As requested	Ad hoc		

Effective Year: 2011
Requirement / Objective: Engage patients and families in their Health care
Target (Definition): Provide patients with timely electronic access to their health information (including laboratory results, problem list, medication lists, allergies) within 96 hours of the information being available to the EP.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide patient with instructions indicating that laboratory and other results will be available within 96 hours.	% of hospitals or EPs who have the capability	% of discharge orders delivered electronically.	% of patients who follow up with next steps and recommended treatment	Small patient population with personal internet access.	This should be part of training and education of patients It should be identified as operational and material savings for covered entities
Data Source:	Hospital self reporting	EHR database records	EHR/PHR		
Form of Metric (data structure):	# hospitals with capability / total # of	# pieces of information available online / volume of	# patients acting on recommendation / # of patients requiring follow up		

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
	hospitals or EPs counted	information (# of pieces of information)			
Frequency of Reporting	Quarterly or Annually	Ongoing.	Ad hoc		

Effective Year: 2011
Requirement / Objective: Engage patients and families in their health care.
Target (Definition): Provide clinical summaries for patients for each encounter.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide patient with a clinical summary at conclusion of each encounter. Clinical summary to include findings, recommendations and next steps.	% of hospitals or EPs who have the capability.	Written summary at conclusion of visit with detailed summary available via electronic query	% of patients who follow up with next steps and recommended treatment	Duplicative to provide patient with written summary to "take" with them	
Data Source:	Hospital self reporting	EHR database records	EHR/PHR		
Form of Metric (data structure):	# hospitals with capability / total # of hospitals or EPs counted	# clinical summaries available electronically / # clinical encounters for any given patient	Experience Stated as unsatisfactory by patient		
Frequency of Reporting	Quarterly or Annually.	Frequency of report reporting	Ad hoc		

Effective Year: 2011
Requirement / Objective: Ensure adequate privacy and security protections for personal health information.
Target (Definition): Protect electronic health information created or maintained by the certified EHR technology through the implementation of appropriate technical capabilities.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide consumers,	All (100%) consumers, patients and	Provide consumers, families and	Consumers, Families and patients report	1) Weak passwords on part of consumer,	

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
families and patients with security message outlining the security capabilities associated with system.	families receive appropriate security information upon contact or log in.	patients with security message outlining the security capabilities associated with system	high confidence level with security of information.	family or patient. 2) Failure of consumer, family or patient to disengage from system, thereby leaving connection open	
Data Source:	EHR	Patient login screen	Security Surveys		
Form of Metric (data structure):	Yes/No Metric - reported by EHR vendor	Yes/No Metric - reported by EHR vendor	TBD		
Frequency of Reporting	Annually	Annually	Annually		

Effective Year: 2011
Requirement / Objective: Improving quality, safety, efficiency, and reducing health disparities.
Target (Definition): Send reminders to patients per patient preference for preventive/follow up care.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide consumers, families and patients with timely and secure messages detailing preventative and follow up care requirements.	All (100%) of consumers, patients and families receive preventative/follow up care message reminders	Consumers, patients and families receive member-appropriate preventative/follow up care message reminders	Members achieve a high compliance (90) level in meeting member appropriate preventative/follow up care		
Data Source:	EHR / E-mail	EHR / E-mail	EHR		
Form of Metric (data structure):	# patients receiving follow-up care messages / total # patients	# patients or designees receiving member-appropriate follow-up care messages / total # patients	# patients acting on follow up message / # follow up messages		
Frequency of Reporting	Annually	Annually	Annually		

Effective Year: 2012
Requirement / Objective: Patient Specific Educational Resources.
Target (Definition): Provide consumers and patients with access to language appropriate resources and materials.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide materials in patient's primary language at an appropriate reading level.	Materials available for top 50% of members of physician panel (or service area)		1) ___% of patients surveyed are aware of availability of materials. 2) Of patients who have read materials, ___% find them understandable	(1) Technical complications on presentation of non Latin-based alphabets (Cyrillic, Chinese, Vietnamese, etc.) (2) Translation capability of hospital or physician office	Recommend adoption of system similar to DMHC threshold language requirements for HP
	Hospital or EP Educational Materials or EHR		1) # patients aware of availability / # patients 2) # patients who find material understandable / # patients who have received and read materials		
	# materials available / # patients in Panel or service area		Numerator and Denominator / Compilation		
	As requested		As requested		

Effective Year: 2012
Requirement / Objective: Patient / Provider Secure Messaging
Target (Definition): Secure messaging capabilities between patients and providers

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide consumers, families and patients with secure messaging capabilities with providers and Hospitals	All (100%) patient and provider inter-communications are security encrypted and transmitted	Provide consumers, families and patients with secure messaging capabilities that are not financially burdensome to consumer, families and patient	Consumers, Families and patients report high confidence level with data	1) Weak passwords on part of consumer, family or patient. 2) Failure of consumer, family or patient to disengage from system, thereby leaving connection open	
Data Source:	TBD	Provider or physician records	Patient / Family survey		
Form of Metric (data structure):	TBD	Yes/No Metric - reported by provider (capability exists and cost is not	# patients confident in data / # survey respondents		

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
		burdensome)			
Frequency of Reporting	As requested	Frequency of report reporting	Frequency of report reporting		

Effective Year: 2012
Requirement / Objective: Patients Have Access to Self Management Tools.
Target (Definition): Provide patients with capability to take active role in their care and management.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide members with access to medical information that is simple and easy to understand. Multiple delivery options such as interactive media available	Members, patients provided with information notifying them of availability of Medical information for patient or family "at risk" conditions, chronic conditions made available to patient. Medical information on , medical procedures, recommended best practices available	80 % of patients (with computer access) consult self management tools			
Data Source:	EHR / E-mail	PHR			
Form of Metric (data structure):	# patients who receive notification that electronic info is available / total # of patients	# patients who log in to PHR / total # patients			
Frequency of Reporting	As requested	As requested			

Effective Year: 2013
Requirement / Objective: Mobile Access to Electronic Health Information and Processes.
Target (Definition): Availability of electronic health information via mobile devices.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Members/patients/ families awareness of electronic health information availability via common mobile devices	Patient aware of capability.	Delivery of electronic health information made available to members via mobile device			
Data Source:	Provider notes / communication materials	# patients desiring delivery of information via mobile device/# patients	List data source, validity		

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Form of Metric (data structure):	Yes/No Metric - reported by provider	Yes/No Metric - reported by provider.	Yes/No Metric - reported by provider		
Frequency of Reporting	As requested	As requested	As requested		

Effective Year: 2013
Requirement / Objective: Upload Data from Remote Monitoring Devices.
Target (Definition): Provide patients with ability to upload data from approved remote monitoring devices to upstream system.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Upload data from approved remote monitoring devices continuously without intervention from patient	% of remote monitoring devices with capability	% of patients where data is uploaded continuously to upstream system	Quality of upstream data. % of accurate device response to remotely captured events		
Data Source:	# remote monitoring devices that are uploadable / total # of monitoring devices	# patients uploading data from monitoring devices / # patients using monitoring devices	Independent quality assurance.		
Form of Metric (data structure):	Numerator and Denominator / Compilation	Numerator and Denominator / Compilation	Accurate device response / total # device responses		
Frequency of Reporting	As requested	As requested	As requested		

Effective Year: 2014
Requirement / Objective: Patient Initiated Medication Refill Requests.
Target (Definition): Provide patients with electronic access capabilities to initiate refill requests.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide patient with ability to initiate medical refill requests	% of hospitals or EPs who have the capability	% of refill requests delivered electronically	Patient receives prescription.	Small patient population with personal internet access.	This should be part of training and education of patients It should be identified as operational and material savings for covered entities
Data Source:	Providers notes / EHR	EHR	List data source, validity		

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Form of Metric (data structure):	# hospitals with capability / total # of hospitals in population being measured.	# refill requests done electronically / total # refill requests.	TBD		
Frequency of Reporting	Frequency of report reporting	Frequency of report reporting	Frequency of report reporting		

Effective Year: 2014
Requirement / Objective: Medication Lists and Information.
Target (Definition): Provide patients with timely electronic access to their medication lists and information on medications.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide patient with ability to view medication lists within 48 hrs of prescription	% of hospitals or EPs who have the capability	% of medical lists and medication information delivered electronically	Verified receipt and understanding of materials.	Small patient population with personal internet access.	This should be part of training and education of patients It should be identified as operational and material savings for covered entities
Data Source:	List data source, validity	List data source, validity	List data source, validity		
Form of Metric (data structure):	Numerator and Denominator / Compilation	Numerator and Denominator / Compilation	Numerator and Denominator / Compilation		
Frequency of Reporting	Frequency of report reporting	Frequency of report reporting.	Frequency of report reporting		

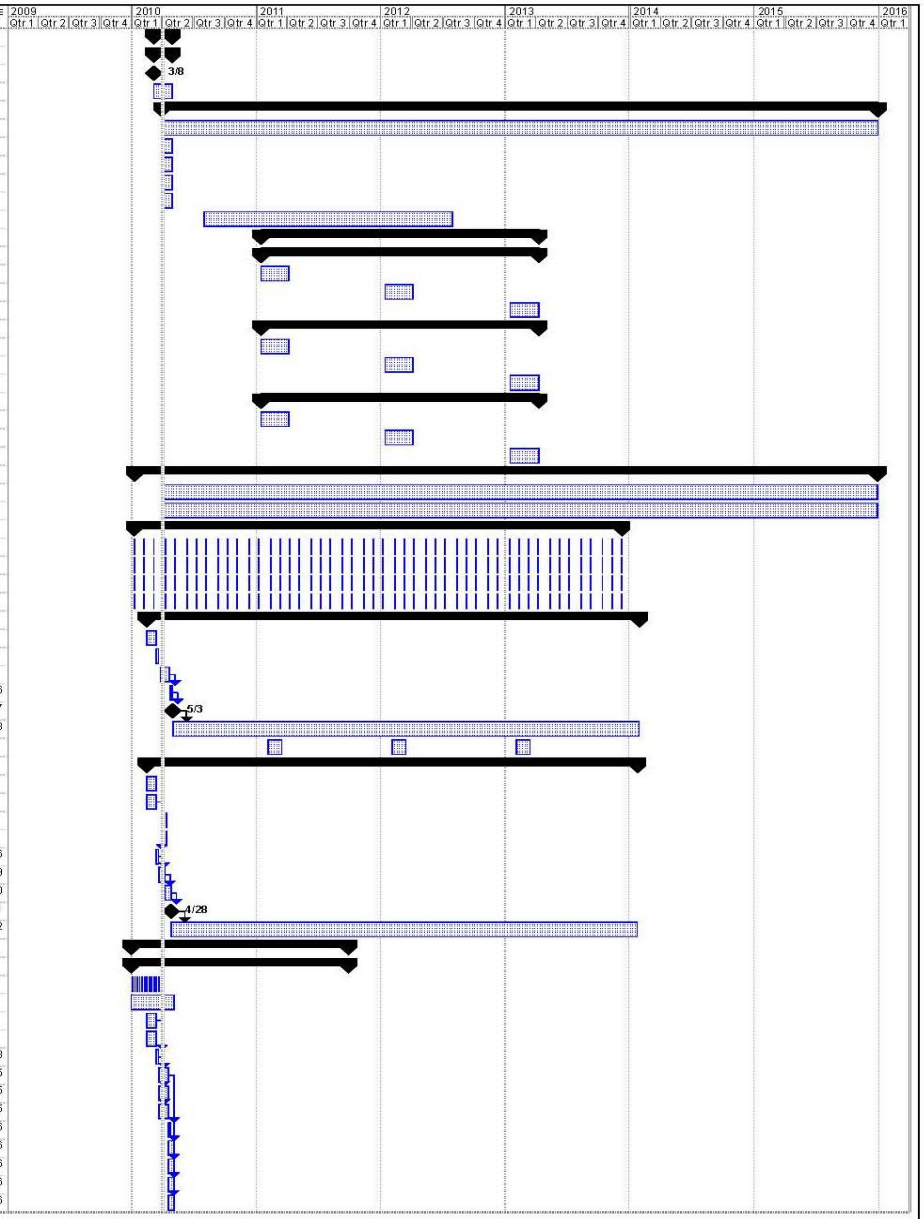
Effective Year: 2014
Requirement / Objective: Access for All Patients to PHR with Real Time with Health Data.
Target (Definition): Provide consumers, patients and families who have participated in PHR with real time access to data.

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
Capability: Provide consumers with real time access to PHR data that includes relevant preventative information. Provide patients with real time access to PHR with relevant preventative and follow up data that	1) % of Consumers who participate in PHR 2) % of patients who participate in PHR that integrates with EP	% of EP's providing integrated PHR to patients and members	1) % of patients accessing PHR		

Metrics					
Capability	Adoption	Utilization	Effectiveness	Barriers	Recommendations
coordinates with EHR					
Data Source:	# patients participating in PHR that integrates with EP / Total # patients	# EP's providing PHR to patients / total # EPs	List data source, validity		
Form of Metric (data structure):	Numerator and Denominator / Compilation	Numerator and Denominator / Compilation	Numerator and Denominator / Compilation		
Frequency of Reporting	As requested	As requested	As requested		

Appendix 19: Project Plan

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Governance**	**40 days**	**Mon 3/8/10**	**Fri 4/30/10**	
2	**Transition to Governancce Entity**	**40 days**	**Mon 3/8/10**	**Fri 4/30/10**	
3	Select Governance Entity	1 day	Mon 3/8/10	Mon 3/8/10	
4	Transition existing work efforts and knowledge to the Governnance Entity	40 days	Mon 3/8/10	Fri 4/30/10	
5	**Requirements for State HIE Grant Program, Submission to ONC**	**1503 days?**	**Thu 4/1/10**	**Thu 12/31/15**	
6	Report on milestones on quarterly basis	1502 days?	Fri 4/2/10	Thu 12/31/15	
7	Submit as update to Strategic and Operational Plans: an analysis of how the State may use state pur	22 days?	Thu 4/1/10	Fri 4/30/10	
8	Revise Operational Plan to show how architecture considers web-enabled state level directories that	22 days?	Thu 4/1/10	Fri 4/30/10	
9	Revise Operational Plan to show the state has considered provider and patient authentication servic	22 days?	Thu 4/1/10	Fri 4/30/10	
10	Revise Operational Plan to include analysis of the barriers, resources and opportunities for overcomi	22 days?	Thu 4/1/10	Fri 4/30/10	
11	Begin executing plan to remove regulatory and policy barriers identified in the analysis and use regul	523 days?	Mon 8/2/10	Tue 7/31/12	
12	**Required Annual Updates to Strategic and Operational Plans (from one year of award)**	**583 days**	**Mon 1/17/11**	**Wed 4/10/13**	
13	**Update to include revised business plan for public/private financing**	**583 days**	**Mon 1/17/11**	**Wed 4/10/13**	
14	2011 Update	60 days	Mon 1/17/11	Fri 4/8/11	
15	2012 Update	60 days	Mon 1/16/12	Fri 4/6/12	
16	2013 Update	60 days	Thu 1/17/13	Wed 4/10/13	
17	**Update to address the implementation and evaluation of policies and legal agreements re**	**583 days**	**Mon 1/17/11**	**Wed 4/10/13**	
18	2011 Update	60 days	Mon 1/17/11	Fri 4/8/11	
19	2012 Update	60 days	Mon 1/16/12	Fri 4/6/12	
20	2013 Update	60 days	Thu 1/17/13	Wed 4/10/13	
21	**Update to address statewide HIE alignment with other federal programs.**	**583 days**	**Mon 1/17/11**	**Wed 4/10/13**	
22	2011 Update	60 days	Mon 1/17/11	Fri 4/8/11	
23	2012 Update	60 days	Mon 1/16/12	Fri 4/6/12	
24	2013 Update	60 days	Thu 1/17/13	Wed 4/10/13	
25	**Coordination with NHIN**	**1560 days?**	**Mon 1/11/10**	**Wed 12/30/15**	
26	Participate in NHIN Governance Training (as guidance is provided by ONC)	1502 days?	Thu 4/1/10	Wed 12/30/15	
27	Review Updates to statewide HIE toolkit modules (as guidance is provided by ONC)	1502 days?	Thu 4/1/10	Wed 12/30/15	
28	**Convene Health Care Stakeholders**	**1023 days**	**Mon 1/11/10**	**Mon 12/9/13**	
29	**Governance Entity Board Meeting**	**1023 days**	**Mon 1/11/10**	**Mon 12/9/13**	
126	**eHealth Advisory Board**	**1023 days**	**Mon 1/11/10**	**Mon 12/9/13**	
175	**Techincial Workgroup**	**1023 days**	**Mon 1/11/10**	**Mon 12/9/13**	
224	**CalPSAB Privacy and Security**	**1023 days**	**Mon 1/11/10**	**Mon 12/9/13**	
273	**Performance Metrics**	**1035 days?**	**Mon 2/15/10**	**Wed 1/29/14**	
274	Draft performance metrics	21 days	Mon 2/15/10	Mon 3/15/10	
275	Present options for review and comment	6 days	Mon 3/15/10	Mon 3/22/10	
276	Finalize performance metrics	20 days	Mon 3/29/10	Fri 4/23/10	
277	Present finalized performance metrics	5 days	Mon 4/26/10	Fri 4/30/10	276
278	Release for development and implementation	1 day?	Mon 5/3/10	Mon 5/3/10	277
279	Peformance metric collection and monitoring	979 days	Tue 5/4/10	Wed 1/29/14	278
280	**Review, Refine and Update Performance Metrics**	**550 days**	**Mon 2/7/11**	**Fri 3/15/13**	
284	**Communications and Outreach to Patients and Underserved and Vulnerable Populations**	**1032 days?**	**Mon 2/15/10**	**Fri 1/24/14**	
285	Define Patient Outreach Requirements	21 days	Mon 2/15/10	Mon 3/15/10	
286	Define provider outreach requirements	21 days	Mon 2/15/10	Mon 3/15/10	
287	Select and procure consumer relations firm to design communications strategy and materials	1 day?	Thu 4/15/10	Thu 4/15/10	
288	Review and approve communications plan and materials	1 day?	Thu 4/15/10	Thu 4/15/10	
289	Present communications plan for review and comment	5 days	Tue 3/16/10	Mon 3/22/10	286
290	Finalize outreach and communications plan	13 days	Tue 3/23/10	Thu 4/8/10	289
291	Present finalized communications and outreach plan	13 days	Fri 4/9/10	Tue 4/27/10	290
292	Release for development and implementation	1 day?	Wed 4/28/10	Wed 4/28/10	291
293	Communication and outreach activities	979 days	Thu 4/29/10	Fri 1/24/14	292
294	**Finance**	**458 days?**	**Fri 1/1/10**	**Fri 9/30/11**	
295	**Financial Planning**	**458 days?**	**Fri 1/1/10**	**Fri 9/30/11**	
296	**Weekly Financial Planning Workgroup**	**61 days**	**Tue 1/5/10**	**Tue 3/30/10**	
322	Define Incentives for trading partners for HIE	90 days	Fri 1/1/10	Thu 5/6/10	
323	Draft business model options	21 days	Mon 2/15/10	Mon 3/15/10	
324	Define required policy recommendations to support business model options	21 days	Mon 2/15/10	Mon 3/15/10	
325	Present business model options for review and comment	5 days	Tue 3/16/10	Mon 3/22/10	323
326	Update and refine Incentives for trading partners for HIE	20 days	Tue 3/23/10	Mon 4/19/10	325
327	Update and refine business model options	20 days	Tue 3/23/10	Mon 4/19/10	325
328	Update and refine required policy recommendations to support business model options	20 days	Tue 3/23/10	Mon 4/19/10	325
329	Present updated options and select business model for implementation	5 days	Tue 4/20/10	Mon 4/26/10	326
330	Finalize Incentives for trading partners for HIE	13 days	Tue 4/20/10	Thu 5/6/10	326
331	Finalize business model options	13 days	Tue 4/20/10	Thu 5/6/10	326
332	Finalize required policy recommendations to support business model options	13 days	Tue 4/20/10	Thu 5/6/10	326
333	Incorporate sustainability plan into Operational Plan	13 days	Tue 4/20/10	Thu 5/6/10	326



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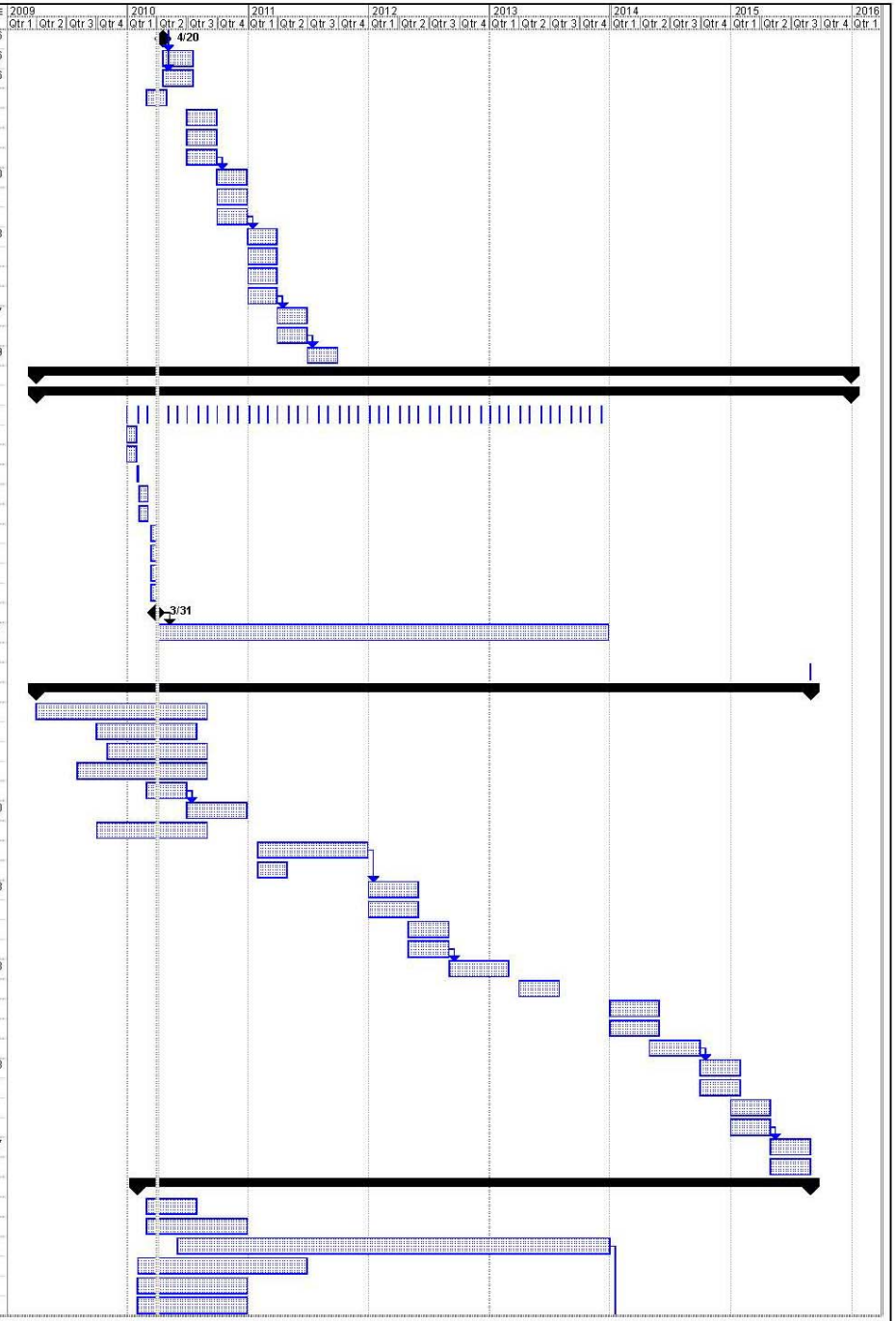
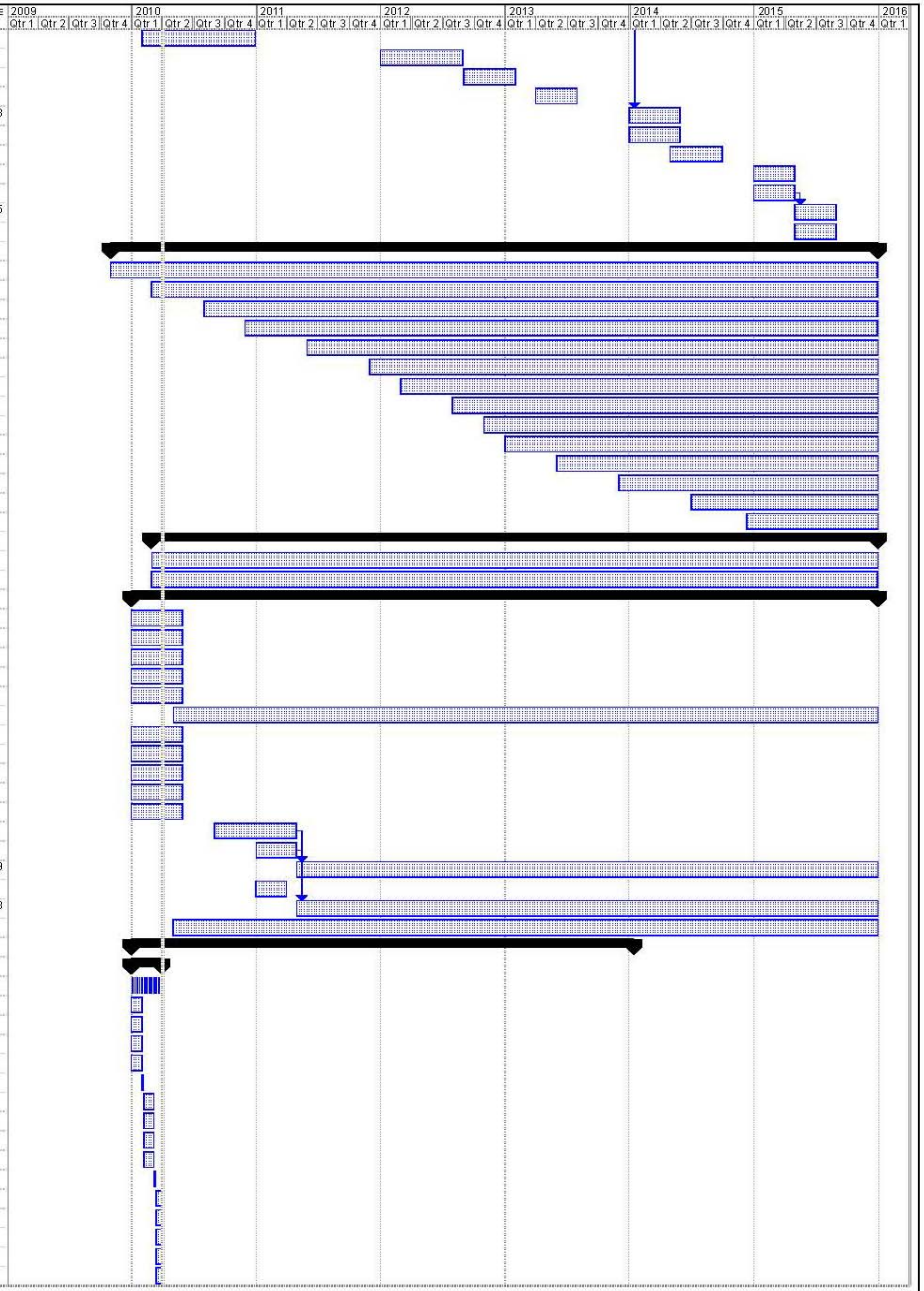
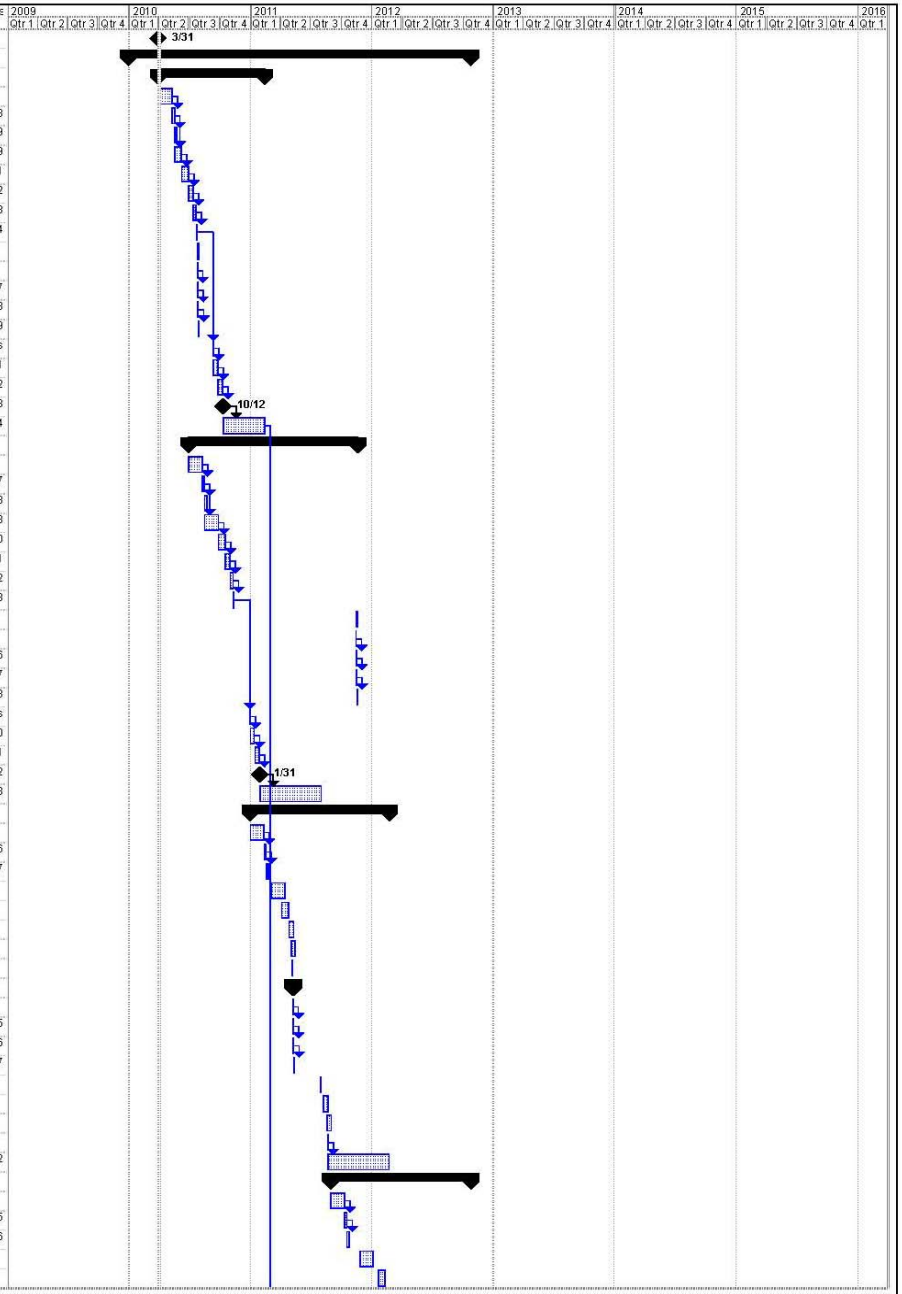
ID	Task Name	Duration	Start	Finish	Predecessors
334	Release business model for development and implementation	1 day	Tue 4/20/10	Tue 4/20/10	326
335	Hire one FTE to develop and extend budget models for full life cycle costing and manage daily s	65 days	Tue 4/20/10	Mon 7/19/10	326
336	Hire one FTE to draft Statements of work, procurement and contracting materials, and to hire ar	65 days	Tue 4/20/10	Mon 7/19/10	326
337	Submit updated staffing plan to ONC (corresponding to new budget appropriations)	45 days?	Mon 3/1/10	Fri 4/30/10	
338	Develop and deploy a short survey that would list methods of payment or contribution by HIOs r	66 days	Thu 7/1/10	Wed 9/29/10	
339	Build on the CA Landscape inventory, to update and extend the survey work referenced in the T	66 days	Thu 7/1/10	Wed 9/29/10	
340	Develop a Request For Information (RFI) for HIE Core Services options	66 days	Thu 7/1/10	Wed 9/29/10	
341	Compile results of HIO service and payment preference survey, present results to state and Cal	66 days	Thu 9/30/10	Thu 12/30/10	340
342	Update CA HIE Landscape survey to determine ongoing gaps; options developed and results sh	66 days	Fri 10/1/10	Fri 12/31/10	
343	Consolidate results of the HIE RFI for Core Services and share results with HIOs	66 days	Fri 10/1/10	Fri 12/31/10	
344	Process results of HIO preference survey and decide on course of action	64 days	Sat 1/1/11	Wed 3/30/11	343
345	Outreach to identified healthcare organizations in regions lacking HIOs and HIE	64 days	Mon 1/3/11	Thu 3/31/11	
346	Identify the solutions and pricing that passed viability tests	64 days	Mon 1/3/11	Thu 3/31/11	
347	Share recommendations with working groups and HIOs to ensure broad input	64 days	Mon 1/3/11	Thu 3/31/11	
348	Analyze payment structures, develop budget models, and restimate HIE and governance costs	65 days	Fri 4/1/11	Thu 6/30/11	347
349	Staff will present options and cost models to Cal eConnect, the working groups, and HIOs for re	65 days	Fri 4/1/11	Thu 6/30/11	
350	Finalize sustainability model, continuing to expand HIE services until gaps are filled	66 days	Fri 7/1/11	Fri 9/30/11	349
351	**Legal / Policy**	**1763 days?**	**Thu 4/2/09**	**Thu 12/31/15**	
352	**CalPSAB**	**1763 days?**	**Thu 4/2/09**	**Thu 12/31/15**	
353	**CalPSAB Convenings**	**1028 days**	**Fri 1/1/10**	**Fri 12/6/13**	
402	Draft Privacy and Security laws	21 days	Fri 1/1/10	Fri 1/29/10	
403	Coordinate across regions of CA and neighboring states	21 days	Fri 1/1/10	Fri 1/29/10	
404	Present options for review and comment	5 days	Mon 2/1/10	Fri 2/5/10	
405	Refine Privacy and Security laws	20 days	Mon 2/8/10	Fri 3/5/10	
406	Coordinate across regions of CA and neighboring states	20 days	Mon 2/8/10	Fri 3/5/10	
407	Finalize Privacy and Security laws	13 days	Mon 3/15/10	Wed 3/31/10	
408	Coordinate across regions of CA and neighboring states	13 days	Mon 3/15/10	Wed 3/31/10	
409	Present updated options	13 days	Mon 3/15/10	Wed 3/31/10	
410	Incorporate Legal into Operational Plan	13 days	Mon 3/15/10	Wed 3/31/10	
411	Release for development and implementation	1 day?	Wed 3/31/10	Wed 3/31/10	
412	Oversight and Monitoring	979 days	Thu 4/1/10	Fri 12/27/13	411
413	**Review, Refine and Update Privacy and Security**	**1763 days?**	**Thu 4/2/09**	**Thu 12/31/15**	
414	Review, Refine and Update Privacy and Security	1 day?	Mon 8/31/15	Mon 8/31/15	
415	**Privacy Committee Activities**	**1675 days?**	**Thu 4/2/09**	**Mon 8/31/15**	
416	Emergency Department Secondary Use	370 days?	Thu 4/2/09	Tue 8/31/10	
417	Sensitive Health Information – Define, Use / Purpose Limitation	217 days?	Thu 10/1/09	Fri 7/30/10	
418	Care Management Secondary Use	217 days?	Tue 11/3/09	Tue 8/31/10	
419	Emergency Department Use / Purpose Limitation	282 days?	Tue 8/4/09	Tue 8/31/10	
420	Health Care Operations Use / Purpose Limitation	88 days?	Mon 3/1/10	Wed 6/30/10	
421	Public Health Use / Purpose Limitation	132 days?	Thu 7/1/10	Thu 12/30/10	420
422	Quality Reporting Secondary Use	239 days?	Fri 10/2/09	Tue 8/31/10	
423	Personal Health Records / Patient Access	239 days?	Tue 2/1/11	Fri 12/30/11	
424	Clinical Summary Use / Purpose Limitation	64 days?	Tue 2/1/11	Fri 4/29/11	
425	Research Use / Purpose Limitation	109 days?	Mon 1/2/12	Thu 5/31/12	423
426	De-Identification of Health Information	109 days?	Mon 1/2/12	Thu 5/31/12	
427	Payment Use / Purpose Limitation	89 days?	Tue 5/1/12	Fri 8/31/12	
428	Appropriate Use Limitation	89 days?	Tue 5/1/12	Fri 8/31/12	
429	Health Care Oversight Use / Purpose Limitation	129 days?	Mon 9/3/12	Thu 2/28/13	428
430	Required by Law Use / Purpose Limitation	88 days?	Mon 4/1/13	Wed 7/31/13	
431	Law Enforcement Use / Purpose Limitation	108 days?	Wed 1/1/14	Fri 5/30/14	
432	Decedents/ Coroners Use / Purpose Limitation	108 days?	Wed 1/1/14	Fri 5/30/14	
433	Government Functions Use / Purpose Limitation	109 days?	Thu 5/1/14	Tue 9/30/14	
434	Employer Use / Purpose Limitation	88 days?	Wed 10/1/14	Fri 1/30/15	433
435	Marketing Use / Purpose Limitation	88 days?	Wed 10/1/14	Fri 1/30/15	
436	Judicial Administrative Use / Purpose Limitation	86 days?	Thu 1/1/15	Thu 4/30/15	
437	Health and Safety Use / Purpose Limitation	86 days?	Thu 1/1/15	Thu 4/30/15	
438	Worker's Compensation Use / Purpose Limitation	87 days?	Fri 5/1/15	Mon 8/31/15	437
439	DIB / SSI Eligibility Use / Purpose Limitation	87 days?	Fri 5/1/15	Mon 8/31/15	
440	**Legal Committee Activities**	**1457 days?**	**Tue 2/2/10**	**Mon 8/31/15**	
441	Assess DURSA for applicability in California based upon legal risks and needs	110 days?	Mon 3/1/10	Fri 7/30/10	
442	Identify HIPAA provisions that are not clearly expressed in California law	220 days?	Tue 3/2/10	Fri 12/31/10	
443	Identify "Research" provisions in California and Federal law and harmonize; Define "Cl	936 days?	Thu 6/3/10	Tue 12/31/13	
444	Identify "Public Health" provisions in California and Federal law and harmonize	369 days?	Wed 2/3/10	Thu 6/30/11	
445	Identify "Patient Access" provisions in California and Federal law and harmonize	240 days?	Tue 2/2/10	Fri 12/31/10	
446	Identify "Marketing" provisions in California and Federal law and harmonize	240 days?	Tue 2/2/10	Fri 12/31/10	



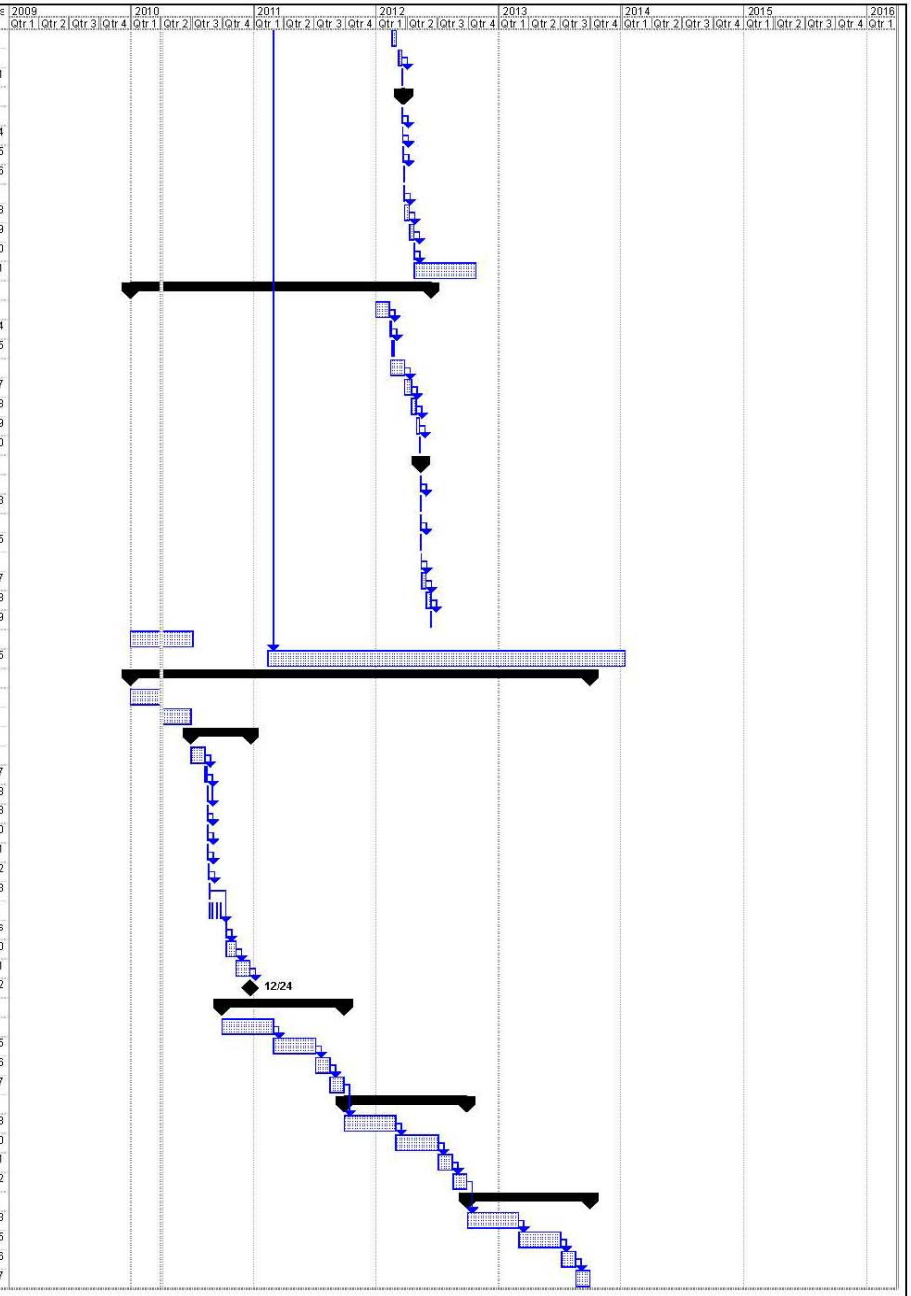
ID	Task Name	Duration	Start	Finish	Predecessors
447	Identify "Employer" provisions in California and Federal law and harmonize	240 days?	Tue 2/2/10	Fri 12/31/10	
448	Identify "Payment" provisions in California and Federal law and harmonize	174 days?	Mon 1/2/12	Thu 8/30/12	
449	Identify "Health Care Oversight" provisions in California and Federal law and harmoniz	110 days?	Mon 9/3/12	Fri 2/1/13	
450	Identify "Required by Law" provisions in California and Federal law and harmonize	88 days?	Mon 4/1/13	Wed 7/31/13	
451	Identify "Law enforcement" provisions in California and Federal law and harmonize	108 days?	Wed 1/1/14	Fri 5/30/14	443
452	Identify "Decedents/ Coroners" provisions in California and Federal law and harmonize	108 days?	Wed 1/1/14	Fri 5/30/14	
453	Identify "Government Functions" provisions in California and Federal law and harmoni	109 days?	Thu 5/1/14	Tue 9/30/14	
454	Identify "Judicial Administrative" provisions in California and Federal law and harmoniz	86 days?	Thu 1/1/15	Thu 4/30/15	
455	Health and Safety Use / Purpose Limitation	86 days?	Thu 1/1/15	Thu 4/30/15	
456	Identify "Worker's Compensation" provisions in California and Federal law and harmor	87 days?	Fri 5/1/15	Mon 8/31/15	455
457	Identify "DIB/SSI Eligibility" provisions in California and Federal law and harmonize.	87 days?	Fri 5/1/15	Mon 8/31/15	
458	**Security Committee Activities**	**1611 days?**	**Mon 11/2/09**	**Thu 12/31/15**	
459	Develop Access Control Implementation Policy	1609 days?	Mon 11/2/09	Tue 12/29/15	
460	Develop Risk Management Implementation Policy	1524 days?	Mon 3/1/10	Tue 12/29/15	
461	Develop Consent Management Implementation Policy	1414 days?	Mon 8/2/10	Wed 12/30/15	
462	Develop Data Assurance Implementation Policy	1327 days?	Wed 12/1/10	Wed 12/30/15	
463	Develop Technical Controls Implementation Policy	1197 days?	Wed 6/1/11	Thu 12/31/15	
464	Develop Device and Media Implementation Policy	1066 days?	Thu 12/1/11	Thu 12/31/15	
465	Develop Security Incident Management Implementation Policy	1001 days?	Thu 3/1/12	Thu 12/31/15	
466	Develop Information Security Implementation Policy	892 days?	Wed 8/1/12	Thu 12/31/15	
467	Develop Compliance Auditing Implementation Policy	826 days?	Thu 11/1/12	Thu 12/31/15	
468	Develop Workforce Security Management Implementation Policy	783 days?	Tue 1/1/13	Thu 12/31/15	
469	Develop Frequency of Actions Implementation Strategy Policy	674 days?	Mon 6/3/13	Thu 12/31/15	
470	Develop Contingency Planning Implementation Policy	544 days?	Mon 12/2/13	Thu 12/31/15	
471	Develop Facility Access Controls Implementation Policy	393 days?	Tue 7/1/14	Thu 12/31/15	
472	Develop Network Security Management Implementation Policy	276 days?	Thu 12/11/14	Thu 12/31/15	
473	**HIE Committee Activities**	**1526 days?**	**Mon 3/1/10**	**Thu 12/31/15**	
474	Develop Implementation Strategy Tools	1524 days?	Wed 3/3/10	Thu 12/31/15	
475	Support Demonstration Projects	1524 days?	Mon 3/1/10	Tue 12/29/15	
476	**Education Committee Activity**	**1567 days?**	**Fri 1/1/10**	**Thu 12/31/15**	
477	Standardize Opt-in Consent Form(s)	107 days?	Fri 1/1/10	Mon 5/31/10	
478	Consumer Communications Toolkit	107 days?	Fri 1/1/10	Mon 5/31/10	
479	Consumer Educational Fact Sheet	107 days?	Fri 1/1/10	Mon 5/31/10	
480	Consumer FAQ's	107 days?	Fri 1/1/10	Mon 5/31/10	
481	Consumer Brochures/Materials	107 days?	Fri 1/1/10	Mon 5/31/10	
482	Consumer Interactive Website of Resources and Tools	1479 days?	Wed 5/5/10	Thu 12/31/15	
483	Provider Communications Toolkit	107 days?	Fri 1/1/10	Mon 5/31/10	
484	Provider Educational Fact Sheet	107 days?	Fri 1/1/10	Mon 5/31/10	
485	Provider FAQ's	107 days?	Fri 1/1/10	Mon 5/31/10	
486	Provider Brochures/Materials	107 days?	Fri 1/1/10	Mon 5/31/10	
487	Test Consumer Communications Toolkit	107 days?	Fri 1/1/10	Mon 5/31/10	
488	Test Provider Communications Toolkit	173 days?	Thu 9/2/10	Fri 4/29/11	
489	Update Consumer Communications Toolkit	85 days?	Mon 1/3/11	Fri 4/29/11	
490	Consumer Marketing/Outreach	1219 days?	Mon 5/2/11	Thu 12/31/15	489
491	Update Provider Communications Toolkit	66 days?	Sat 1/1/11	Fri 4/1/11	
492	Provider Marketing/Outreach	1219 days?	Mon 5/2/11	Thu 12/31/15	488
493	Provider Interactive Website of Resources and Tools	1480 days?	Tue 5/4/10	Thu 12/31/15	
494	**Business and Technical Operations**	**1054 days**	**Fri 1/1/10**	**Mon 1/13/14**	
495	**Operational Planning**	**64 days**	**Fri 1/1/10**	**Wed 3/31/10**	
496	**Weekly Operational Planning Workgroup**	**61 days**	**Tue 1/5/10**	**Tue 3/30/10**	
510	Draft Standards and Certification Requirements	22 days	Fri 1/1/10	Mon 2/1/10	
511	Draft Technical Plan Based on Existing Assets	22 days	Fri 1/1/10	Mon 2/1/10	
512	Draft Policy Guidance for Privacy and Security	22 days	Fri 1/1/10	Mon 2/1/10	
513	Draft controls anre reporting requirements	22 days	Fri 1/1/10	Mon 2/1/10	
514	First Draft review	5 days	Mon 2/1/10	Fri 2/5/10	
515	Update Standards and Certification Requirements	21 days	Mon 2/8/10	Mon 3/8/10	
516	Update Technical Plan Based on Existing Assets	21 days	Mon 2/8/10	Mon 3/8/10	
517	Update Policy Guidance for Privacy and Secuirty	21 days	Mon 2/8/10	Mon 3/8/10	
518	Draft Cost estimates, staffing plan and Schedule	21 days	Mon 2/8/10	Mon 3/8/10	
519	Second Draft Review	5 days	Mon 3/8/10	Fri 3/12/10	
520	Finalize Standards and Certification Requirements	13 days	Mon 3/15/10	Wed 3/31/10	
521	Finalize Technical Plan Based on Existing Assets	13 days	Mon 3/15/10	Wed 3/31/10	
522	Finalize Policy Guidance for Privacy and Secuirty	13 days	Mon 3/15/10	Wed 3/31/10	
523	Finalize Cost estimates, staffing plan and Schedule	13 days	Mon 3/15/10	Wed 3/31/10	
524	Incorporate Finance and Legal/Policy into Operational Plan	13 days	Mon 3/15/10	Wed 3/31/10	



ID	Task Name	Duration	Start	Finish	Predecessors
525	Submit Operational Plan to ONC	1 day	Wed 3/31/10	Wed 3/31/10	
526	**Technical Procurement**	**738 days**	**Fri 1/1/10**	**Fri 10/26/12**	
527	**Procurement 1: Equipment**	**230 days**	**Thu 4/1/10**	**Mon 2/14/11**	
528	Draft Procurement Requirements	30 days	Thu 4/1/10	Wed 5/12/10	
529	Review procurement requirements with appropriate boards / committees	5 days	Thu 5/13/10	Wed 5/19/10	528
530	Update procurement requirements	5 days	Thu 5/20/10	Wed 5/26/10	529
531	Draft RFP	15 days	Thu 5/20/10	Wed 6/9/10	529
532	Legal Review	15 days	Thu 6/10/10	Wed 6/30/10	531
533	Board Review	10 days	Thu 7/1/10	Wed 7/14/10	532
534	Finalize RFP	7 days	Thu 7/15/10	Fri 7/23/10	533
535	Release RFP	1 day	Mon 7/26/10	Mon 7/26/10	534
536	**RFP Q&A Sessions**	**4 days**	**Tue 7/27/10**	**Fri 7/30/10**	
537	RFP Q&A Sessions 1	1 day	Tue 7/27/10	Tue 7/27/10	
538	RFP Q&A Sessions 2	1 day	Wed 7/28/10	Wed 7/28/10	537
539	RFP Q&A Sessions 3	1 day	Thu 7/29/10	Thu 7/29/10	538
540	RFP Q&A Sessions 4	1 day	Fri 7/30/10	Fri 7/30/10	539
541	Responses due	1 day	Mon 9/13/10	Mon 9/13/10	5FS+35 days
542	Review Responses	10 days	Tue 9/14/10	Mon 9/27/10	541
543	Negotiate with top responders	10 days	Tue 9/28/10	Mon 10/11/10	542
544	Award Procurement 1 contracts	1 day	Tue 10/12/10	Tue 10/12/10	543
545	**Procurement 1 Implemenation Oversight**	90 days	Wed 10/13/10	Mon 2/14/11	544
546	**Procurement 2: Contracts for State Level Core Services**	**365 days**	**Thu 7/1/10**	**Mon 11/21/11**	
547	Draft Procurement Requirements	30 days	Thu 7/1/10	Tue 8/10/10	
548	Review procurement requirements with appropriate boards / committees	5 days	Wed 8/11/10	Tue 8/17/10	547
549	Update procurement requirements	5 days	Wed 8/18/10	Tue 8/24/10	548
550	Draft RFP	30 days	Wed 8/18/10	Tue 9/28/10	548
551	Legal Review	15 days	Wed 9/29/10	Tue 10/19/10	550
552	Board Review	10 days	Wed 10/20/10	Tue 11/2/10	551
553	Finalize RFP	7 days	Wed 11/3/10	Thu 11/11/10	552
554	Release RFP	1 day	Fri 11/12/10	Fri 11/12/10	553
555	**RFP Q&A Sessions**	**4 days**	**Wed 11/16/11**	**Mon 11/21/11**	
556	RFP Q&A Sessions 1	1 day	Wed 11/16/11	Wed 11/16/11	
557	RFP Q&A Sessions 2	1 day	Thu 11/17/11	Thu 11/17/11	556
558	RFP Q&A Sessions 3	1 day	Fri 11/18/11	Fri 11/18/11	557
559	RFP Q&A Sessions 4	1 day	Mon 11/21/11	Mon 11/21/11	558
560	Responses due	1 day	Sat 1/1/11	Sat 1/1/11	4FS+35 days
561	Review Responses	10 days	Mon 1/3/11	Fri 1/14/11	560
562	Negotiate with top responders	10 days	Mon 1/17/11	Fri 1/28/11	561
563	Award Procurement 2 contracts	1 day	Mon 1/31/11	Mon 1/31/11	562
564	**Procurement 2 Implementation Oversight**	132 days	Tue 2/1/11	Wed 8/3/11	563
565	**Procurement 3: Contracts to Connect Immunization Registries**	**299 days**	**Mon 1/3/11**	**Thu 2/23/12**	
566	Draft Procurement Requirements	30 days	Mon 1/3/11	Fri 2/11/11	
567	Review procurement requirements with appropriate boards / committees	5 days	Mon 2/14/11	Fri 2/18/11	566
568	Update procurement requirements	5 days	Mon 2/21/11	Fri 2/25/11	567
569	Draft RFP	30 days	Mon 3/7/11	Fri 4/15/11	
570	Legal Review	15 days	Thu 4/7/11	Wed 4/27/11	
571	Board Review	10 days	Fri 4/29/11	Thu 5/12/11	
572	Finalize RFP	7 days	Fri 5/6/11	Mon 5/16/11	
573	Release RFP	1 day	Mon 5/9/11	Mon 5/9/11	
574	**RFP Q&A Sessions**	**4 days**	**Tue 5/10/11**	**Fri 5/13/11**	
575	RFP Q&A Sessions 1	1 day	Tue 5/10/11	Tue 5/10/11	
576	RFP Q&A Sessions 2	1 day	Wed 5/11/11	Wed 5/11/11	575
577	RFP Q&A Sessions 3	1 day	Thu 5/12/11	Thu 5/12/11	576
578	RFP Q&A Sessions 4	1 day	Fri 5/13/11	Fri 5/13/11	577
579	Responses due	1 day	Mon 8/1/11	Mon 8/1/11	
580	Review Responses	10 days	Thu 8/11/11	Wed 8/24/11	
581	Negotiate with top responders	10 days	Mon 8/22/11	Fri 9/2/11	
582	Award Procurement 3 contracts	1 day	Tue 8/23/11	Tue 8/23/11	
583	**Procurement 3 Implementation Oversight**	132 days	Wed 8/24/11	Thu 2/23/12	582
584	**Procurement 4: Contracts to Expand HIE Footprint**	**302 days**	**Thu 9/1/11**	**Fri 10/26/12**	
585	Draft Procurement Requirements	30 days	Thu 9/1/11	Wed 10/12/11	
586	Review procurement requirements with appropriate boards / committees	5 days	Thu 10/13/11	Wed 10/19/11	585
587	Update procurement requirements	5 days	Thu 10/20/11	Wed 10/26/11	586
588	Draft RFP	30 days	Mon 11/28/11	Fri 1/6/12	
589	Legal Review	15 days	Mon 1/23/12	Fri 2/10/12	



ID	Task Name	Duration	Start	Finish	Predecessors
590	Board Review	10 days	Mon 2/20/12	Fri 3/2/12	
591	Finalize RFP	7 days	Fri 3/9/12	Mon 3/19/12	
592	Release RFP	1 day	Tue 3/20/12	Tue 3/20/12	591
593	**RFP Q&A Sessions**	**4 days**	**Wed 3/21/12**	**Mon 3/26/12**	
594	RFP Q&A Sessions 1	1 day	Wed 3/21/12	Wed 3/21/12	
595	RFP Q&A Sessions 2	1 day	Thu 3/22/12	Thu 3/22/12	594
596	RFP Q&A Sessions 3	1 day	Fri 3/23/12	Fri 3/23/12	595
597	RFP Q&A Sessions 4	1 day	Mon 3/26/12	Mon 3/26/12	596
598	Responses due	1 day	Tue 3/27/12	Tue 3/27/12	
599	Review Responses	10 days	Wed 3/28/12	Tue 4/10/12	598
600	Negotiate with top responders	10 days	Wed 4/11/12	Tue 4/24/12	599
601	Award Procurement 3 contracts	1 day	Wed 4/25/12	Wed 4/25/12	600
602	**Procurement 4 Implementation Oversight**	132 days	Thu 4/26/12	Fri 10/26/12	601
603	**Procurement 5: Contract to Connect Existing HIOs**	**642 days**	**Fri 1/1/10**	**Thu 6/14/12**	
604	Draft Procurement Requirements	30 days	Mon 1/2/12	Fri 2/10/12	
605	Review procurement requirements with appropriate boards / committees	5 days	Mon 2/13/12	Fri 2/17/12	604
606	Update procurement requirements	5 days	Mon 2/20/12	Fri 2/24/12	605
607	Draft RFP	30 days	Wed 2/15/12	Tue 3/27/12	
608	Legal Review	15 days	Wed 3/28/12	Tue 4/17/12	607
609	Board Review	10 days	Wed 4/18/12	Tue 5/1/12	608
610	Finalize RFP	7 days	Wed 5/2/12	Thu 5/10/12	609
611	Release RFP	1 day	Fri 5/11/12	Fri 5/11/12	610
612	**RFP Q&A Sessions**	**2 days**	**Mon 5/14/12**	**Tue 5/15/12**	
613	RFP Q&A Sessions 1	1 day	Mon 5/14/12	Mon 5/14/12	
614	RFP Q&A Sessions 2	1 day	Tue 5/15/12	Tue 5/15/12	613
615	RFP Q&A Sessions 3	1 day	Mon 5/14/12	Mon 5/14/12	
616	RFP Q&A Sessions 4	1 day	Tue 5/15/12	Tue 5/15/12	615
617	Responses due	1 day	Wed 5/16/12	Wed 5/16/12	
618	Review Responses	10 days	Thu 5/17/12	Wed 5/30/12	617
619	Negotiate with top responders	10 days	Thu 5/31/12	Wed 6/13/12	618
620	Award Procurement 3 contracts	1 day	Thu 6/14/12	Thu 6/14/12	619
621	**Procurement 5 Implementation Oversight**	132 days	Fri 1/1/10	Mon 7/5/10	
622	**Business and Technical Operations**	760 days	Tue 2/15/11	Mon 1/13/14	545
623	**Evaluation**	**979 days?**	**Fri 1/1/10**	**Mon 9/30/13**	
624	Evaluation Planning	64 days	Fri 1/1/10	Wed 3/31/10	
625	Evaluation Design	65 days	Thu 4/1/10	Wed 6/30/10	
626	**Evaluation Organization Procurement**	**128 days?**	**Thu 7/1/10**	**Fri 12/24/10**	
627	Draft Procurement Requirements	30 days	Thu 7/1/10	Tue 8/10/10	
628	Review procurement requirements with appropriate boards / committees	5 days	Wed 8/11/10	Tue 8/17/10	627
629	Uupdate procurement requirements	1 day?	Wed 8/18/10	Wed 8/18/10	628
630	Draft RFP	1 day?	Wed 8/18/10	Wed 8/18/10	628
631	Legal Review	1 day?	Thu 8/19/10	Thu 8/19/10	630
632	Board Review	1 day?	Fri 8/20/10	Fri 8/20/10	631
633	Finalize RFP	1 day?	Mon 8/23/10	Mon 8/23/10	632
634	Release RFP	1 day?	Tue 8/24/10	Tue 8/24/10	633
635	**RFP Q&A Sessions**	**25 days**	**Tue 8/24/10**	**Mon 9/27/10**	
640	Responses due	1 day?	Wed 10/13/10	Wed 10/13/10	4FS+35 days
641	Review Responses	21 days	Thu 10/14/10	Thu 11/11/10	640
642	Negotiate with top responders	30 days	Fri 11/12/10	Thu 12/23/10	641
643	Select evaluation organization and award contract	1 day?	Fri 12/24/10	Fri 12/24/10	642
644	**Evaluation Period 1**	**261 days**	**Fri 10/1/10**	**Thu 9/29/11**	
645	Refine evaluation criteria	110 days	Fri 10/1/10	Wed 3/2/11	
646	Data Collection	90 days	Thu 3/3/11	Wed 7/6/11	645
647	Data Analysis	31 days	Thu 7/7/11	Thu 8/18/11	646
648	Evalutation Reporting	30 days	Fri 8/19/11	Thu 9/29/11	647
649	**Evaluation Period 2**	**261 days**	**Fri 9/30/11**	**Fri 9/28/12**	
650	Refine evaluation criteria	110 days	Fri 9/30/11	Thu 3/1/12	648
651	Data Collection	90 days	Fri 3/2/12	Thu 7/5/12	650
652	Data Analysis	31 days	Fri 7/6/12	Fri 8/17/12	651
653	Evalutation Reporting	30 days	Mon 8/20/12	Fri 9/28/12	652
654	**Evaluation Period 3**	**261 days**	**Mon 10/1/12**	**Mon 9/30/13**	
655	Refine evaluation criteria	110 days	Mon 10/1/12	Fri 3/1/13	653
656	Data Collection	90 days	Mon 3/4/13	Fri 7/5/13	655
657	Data Analysis	31 days	Mon 7/8/13	Mon 8/19/13	656
658	Evalutation Reporting	30 days	Tue 8/20/13	Mon 9/30/13	657



Appendix 20: Budget Narrative

Budget Narrative/Justification —Entire Project

California's budget covers the four calendar years of the Cooperative Agreement Program's proposed project period, from January 1, 2010 through December 31, 2013. This time period represents portions of five fiscal years:

- FY2010 – 9 months from January 1, 2010 through September 30, 2010.
- FY2011 – 12 months from October 1, 2010 through September 30, 2011.
- FY2012 – 12 months from October 1, 2011 through September 30, 2012.
- FY2013 – 12 months from October 1, 2012 through September 30, 2013.
- FY2014 – 3 months from October 1, 2013 through December 31, 2013.

However, following ONC guidance, the budget has been prepared by calendar year. As required by the FOA, included below are budget justification/narratives for the combined multi-year project period as well as each of the four calendar years comprising the project period.

California has completed its state-level HIE Strategic Plan. It has been submitted as part of this application. Efforts to develop our Operational Plan are currently underway and are expected to be completed by April 1, 2010. Because the details of California's Operational Plan are still being developed, this budget includes more detail for the first three months of the project term, during which time we will be developing the Operational Plan. The remainder of the budget is estimated based on the following:

- **Existing state employees currently involved in our statewide HIE development efforts:** Those employees that will continue working throughout the four years of the project are estimated by year at their current and projected salary level along with a 30% rate for fringe benefits. Personnel include: Deputy Secretary of Health IT, Deputy Secretary of Health System and Life Sciences from the Business, Transportation and Housing Agency (25%), additional resource from BTHA (50%), and staff and counsel from the Office of Health Information Integrity (OHII), which houses CalPSAB, the State's privacy and security advisory board. These staff represent a significant portion of the non-federal in-kind contribution.
- **Additional staff and counsel that will be hired by OHII to support the project:** Staffing is identified by position and includes associated salary costs, specific fringe benefit rates and extra costs for equipment, travel, supplies and facilities.
- **Governance entity estimates**: Estimates of the costs associated with California's proposed governance entity are based on responses from potential entities submitted in response to a Request for Information released by the State.
- **Existing Contracts**: Portions of existing contracts, such as the State's contract with a consulting firm to assist in the development of our Operational Plan, are based on amounts expected to be spent after January 1, 2010 to complete that plan.
- **Procurements to expand on California's existing health information exchange footprint**: The budget breaks out separate estimates for equipment and services for two large procurements, one in FY 2010 and one in FY 2011. However, based on the contents of our final Operational Plan and the technical architecture deployed, the amounts and classifications of these items may change.

These estimates are justified in detail in the justification column of the tables below, per the instructions set out in Appendices J and K of the FOA.

Combined Multi-Year Budget Narrative/Justification

Object Class Category	Federal Funds	Non-Federal Cash	Non-Federal In-Kind	TOTAL	Justification
Personnel	$11,262,824	$0	$2,627,872	$13,890,696	See annual detail below
Fringe Benefits	$3,572,712	$0	$788,360	$4,361,072	See annual detail below
Travel	$793,000	$0	$50,000	$843,000	See annual detail below
Equipment	$300,000	$0	$0	$300,000	See annual detail below
Supplies	$478,050	$0	$0	$478,050	See annual detail below
Contractual	$21,209,000	$0	$2,652,955	$23,861,955	See annual detail below
Other	$1,130,273	$0	$176,432	$1,306,705	See annual detail below
Indirect Charges	$0	$0	$0	$0	N/A
TOTAL	**$38,745,859**	**$0**	**$6,295,619**	**$45,041,478**	

Budget Narrative/Justification —2010

A. 2010 Personnel:

Employees of the applying agency and the governance entity to be selected.

TABLE 2010 A: FEDERAL REQUEST

GOVERNANCE ENTITY PERSONNEL					
Position/ Names TBD	**Time**	**Annual**	**Monthly**	**Rate**	**Total**
CEO	100	2080	173	$132.21	$275,000
CTO	100	2080	173	$120.19	$250,000
CFO	100	2080	173	$120.19	$250,000
Senior Accountant	100	2080	173	$72.12	$150,000
Chief Medical Officer (CMO)	100	2080	173	$120.19	$250,000
Collaboration Manager	100	2080	173	$110.58	$230,000
Evaluator Oversight	100	2080	173	$67.31	$140,000
Technical Director	100	2080	173	$91.35	$190,000
P&S Director	100	2080	173	$84.13	$175,000
Project Manager	100	2080	173	$84.13	$175,000
Applications Analyst	100	2080	173	$60.10	$125,000
Applications Analyst	100	2080	173	$60.10	$125,000
Analyst	100	2080	173	$60.10	$125,000
Analyst	100	2080	173	$60.10	$125,000
Principal Investigator	100	2080	173	$72.12	$150,000
Administrative Assistants	100	2080	173	$33.65	$70,000
Administrative Assistants	100	2080	173	$33.65	$70,000
				GOVERNANCE ENTITY TOTAL:	**$2,875,000**
STATE PERSONNEL					
Position/Names	**Time**	**Annual**	**Monthly**	**Rate**	**Total**
SSM II - Security Currently VACANT	95	1985	165	$37.17	$73,776
SSM II - HIE Currently VACANT	95	1985	165	$37.17	$73,776
SSMI - Eva Coblentz	95	1985	165	$33.86	$67,200
AGPA - Currently VACANT	95	1985	165	$29.33	$58,212
AGPA - Currently VACANT	95	1985	165	$29.33	$58,212
Staff Counsel - Currently VACANT	100	2413	201	$42.13	$101,640
Staff Counsel - Currently VACANT	100	2413	201	$42.13	$101,640
				STATE TOTAL:	**$534,456**
				TOTAL FEDERAL REQUEST:	**$3,409,456**

The governance entity staff are responsible for the daily operations of the governance entity. The HIE Governance Entity will 1) have a diverse board that accommodates broad stakeholder representation and State leadership, 2) engender trust and collaboration between and among all stakeholders, 3) convene stakeholders to generate statewide policy guidance but not operate HIE systems except as requested by and driven from the stakeholders, and 4) employ robust administrative and financial processes to support sustainability, transparency and accountability.

- CEO: Will have overall responsibility for the governance entity.
- CTO: The CTO is responsible for leading the selection of standards and infrastructure used in CA. They facilitate and coordinate the monthly technology workgroup meetings, bring technical architecture expertise to the monthly privacy and security meetings with CalPSAB, and represent CA's technical approach in meetings with Border States as well as other awardees at the two annual meetings. They will also develop and manage the 3 procurements in FY 1 and FY 2 for share services, expansion of existing regional information exchange efforts and the connection of existing HIO's.
- CFO: This will be a responsible for finance, accounting, contracting, human resources and office management. They are also specifically responsible for internal audit, compliance with applicable laws and regulations and for developing necessary policies and procedures or for assuring that these are developed and maintained current.
- Senior Accountant: The Accounting Clerk will assist the CFO with accounting and financial functions. We believe that the combination of a CFO and an Accounting Clerk are adequate for a program of this size.
- Chief Medical Officer (CMO): The CMO will be a licensed physician with experience in the adoption and use of clinical information systems (CIS). They will be the governance entity's physician advocate and represent physician workflow issues and use cases in the technology workgroup as well as the privacy and security meetings.
- Collaboration Manager: Will be responsible for the marketing, outreach and coordination efforts of the governance entity. They will be focused on driving participation and collaboration from various stakeholders including providers, state agencies, public health, privacy and security efforts, and Border States.
- Evaluator Oversight: Will be responsible for setting the initial evaluation metrics, defining data collection approaches and overseeing the data collection and analysis of the metrics. They will procure, manage and work directly with an evaluation firm commissioned by California Health & Human Services Agency as required under the FOA in these efforts.
- Technical Director: Will work directly with and for the CTO. Specific emphasis on the first two years will be on setting up the technical workgroups and developing, managing and evaluating the procurements and manage contracts with vendors to ensure compliance with contract terms and conditions.
- P&S Director: Will be the governance entities direct liaison with CalPSAB and the state of CA's privacy and security efforts. They are responsible for running the privacy and security workgroup and collaboratively drafting the privacy and security requirements, implementation approaches, architecture and statewide policy guidance.
- Project Manager: The PM will work directly with the CEO, CTO, CMO, Collaboration Manager, Evaluator Oversight Manager, Technical Director and the P&S Director to maintaining detailed project plans, action item lists, issue logs for all project components.
- Applications Analyst (2) and Analyst(2): Will assist the Technical Director and one will Assist the P&S director in their work efforts. The applications analyst position requires specific knowledge of

applications: used in clinical setting, support HIE, and supporting privacy and security. The Analyst positions require knowledge of various provider settings and workflows and/or privacy and security. The analysts will provide technical assistance and work directly with regional extension center programs and other initiatives to assist provider adoption and meaningful use of electronic health records across California

- Principal Investigator: Reports directly to the CEO. They are the primary individual in charge of the cooperative agreement and are responsible for all actions required to manage and complete the aspects of the cooperative agreement. They will also support the Evaluation Oversight manager.
- Administrative Assistants (2): Handles the administrative activities, scheduling and travel arrangements for the governance entity staff.

State Personnel:

- SSM II - Security Currently VACANT: Facilitate Security Committee of CalPSAB and manages committee efforts, security standards and strategies.
- SSM II - HIE Currently VACANT: Facilitate HIE Committee of CalPSAB and manages committee efforts, task groups, and implementation & pilot strategies.
- SSMI - Eva Coblentz Facilitates Education Committee and task groups, develops education materials & maintains website.
- AGPA - Currently VACANT: Support to CalOHII, CalPSAB and HIE efforts
- AGPA - Currently VACANT: Support to CalOHII, CalPSAB and HIE efforts
- Staff Counsel - Currently VACANT: Support Legal Committee of CalPSAB, research current state and federal law, identify misalignment, strategize fixes to state law.
- Staff Counsel - Currently VACANT: Support Legal Committee of CalPSAB, research current state and federal law, identify misalignment, strategize fixes to state law.
  Note: STAFF COUNSEL POSITIONS CONTAIN OVERHEAD FOR LAW STUDENT

TABLE 2010 B: NON-FEDERAL MATCH – State Resources

Individual's Name/Title	Time	Annual	Monthly	Rate	Total
Jonah Frohlich, Deputy Secretary, HIT	100	2080	173	$69.23	$144,120
BTH	40	832	69	$71.95	$59,880
CEA I - Bobbie Holm	90	1647	137	$56.01	$92,246
CEA II - Alex Kam	90	1676	140	$58.35	$97,779
Program Mgr – K. D.Greenbaum	90	1800	150	$46.18	$83,120
SSM II - Azadeh Mohandessi-Fares	25	532	44	$37.17	$19,793
Staff Counsel - Suzanne Giorgi	90	1800	150	$61.97	$111,550
DPM III Christine Schmoeckel	50	900	75	$53.87	$48,480
			TOTAL PERSONNEL IN KIND		**$656,968**

The role of the state resources covered under the non-federal match are:

- Jonah Frohlich, Deputy Secretary, HIT
- BTH – California Business, Transportation and Housing Agency : Facilitates State contracting.
- CEA I - Bobbie Holm: Facilitates the CalPSAB structure, the Advisory Board, oversight of all PSAB committees, coordination with federal efforts.
- CEA II - Alex Kam: Acting Director of CalOHII, coordinates CalOHII and CA HIE Advisory Board efforts, strategies and budget oversight.

- Program Mgr – K. D.Greenbaum: Facilitates the Privacy and HIE Committees and task groups, committee interaction and support the CalPSAB efforts.
- SSM II - Azadeh Mohandessi-Fares: Will take over facilitation of the Privacy Committee and task groups, HIE legislation and specializes in pilots.
- Staff Counsel - Suzanne Giorgi: Facilitates the Legal Committee of CalPSAB, task groups, research, legislation, enforcement of privacy and security.
- DPM III Christine Schmoeckel: Support facilitation of the CA HIE Advisory Board effort with an IT focus.

B. 2010 Fringe Benefits:

Employees of the applying agency and the governance entity to be selected.

Fringe benefits for Governance Entity employees covered under federal match are calculated using a flat 30%. With a governance entity salaries equaling $3,000,000 at 30% equals $900,000.

Fringe benefits for state employees covered under federal match are defined in the following table:

TABLE 2010 C: FEDERAL REQUEST – State Resources

Component	Amount
Health Insurance	$ 40,259
Industrial Disability Leave	$ 880
OASDI	$ 29,008
Other	$ 30,457
Retirement	$ 74,844
Unemployment Insurance	$ 187
Workers Compensation	$ 5,043
Total:	**$ 180,678**

Fringe benefits for state employees covered under non-federal match are calculated using a flat rate of 30%. With salaries of $656,968 at 30% equals $197,090.

C: 2010 Travel:

TABLE 2010 D: FEDERAL REQUEST

Trip	Staff	Days	Item	Rate	Cost
GOVERNANCE ENTITY TRAVEL					
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	6 GE staff (CEO, CMO, CTO, P&S, PM & Collab)	2	Airfare	$300	$7,200
			Hotel	$200	$9,600
			Car	$100	$4,800
			Per Diem	$40	$1,920
				Total:	**$23,520**

Technology Advisory Group Meetings (6) monthly meetings (travel every other month) to refine and further develop technology standards and architecture.	6 GE staff (CTO, Tech Dir, P&S Dir, PM, App. Analysts(2))	2	Airfare	$300	$10,800
			Hotel	$200	$14,400
			Car	$100	$7,200
			Per Diem	$40	$2,880
				Total:	**$35,280**
Privacy and Security Meetings (6) monthly meetings (travel every other month) to refine and further develop privacy and standards and architecture.	5 GE staff (CEO, CTO, P&S, CMO, Analyst)	2	Airfare	$300	$9,000
			Hotel	$200	$12,000
			Car	$100	$6,000
			Per Diem	$40	$2,400
				Total:	**$29,400**
State coordination meetings: 2 trips to each boarder state (OR, NV, AZ) to work on coordinating efforts.	6 GE staff (CEO, CMO, CTO, P&S, PM & Collab)	3	Airfare	$640	$23,035
			Hotel	$225	$24,300
			Car	$100	$10,800
			Per Diem	$40	$4,320
				Total:	**$62,455**
Public Conferences related to HIE and HIT: Attendance at 2 conferences for up to 5 people to stay abreast of trends in HIE and HIT. Conferences may include: HIMSS, WOHIT, Mayo, etc.	5 GE staff (CEO, CMO, CTO, P&S, & Collab)	4	Airfare	$680	$6,795
			Hotel	$255	$10,200
			Car	$100	$4,000
			Per Diem	$40	$1,600
			Conference Fees	$250	$10,000
				Total:	**$32,595**
State HIE Leadership Training and State HIE Forum supported by ONC	4 GE Staff (CEO, CMO, CTO, & P&S)	2	Airfare	$887	$7,096
			Hotel	$255	$4,080
			Car	$100	$1,600
			Per Diem	$40	$640
				Total:	**$13,416**

			TOTAL GOVERNANCE ENTITY TRAVEL:		$196,666
STATE EMPLOYEE TRAVEL					
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	2 Staff from CalOHII	2	Airfare	$280	$2,240
			Hotel	$150	$2,400
			Car	$100	$1,600
			Per Diem	$35	$560
				Total:	**$6,800**
Privacy and Security Meetings (6) monthly meetings (travel every other month) to refine and further develop privacy and standards and architecture.	2 Staff from CalOHII	2	Airfare	$280	$3,360
			Hotel	$150	$3,600
			Car	$100	$2,400
			Per Diem	$35	$840
				Total:	**$10,200**
State HIE Leadership Training and State HIE Forum supported by ONC	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$887	$1,774
			Hotel	$255	$1,020
			Car	$100	$400
			Per Diem	$35	$140
				Total:	**$3,334**
				TOTAL STATE EMPLOYEE TRAVEL:	**$20,334**
				TOTAL FEDERAL REQUEST FOR TRAVEL:	**$217,000**

TABLE 2010 E: NON-FEDERAL MATCH – State Resources

Trip	Staff	Days	Item	Rate	Cost
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$275	$1,100
			Hotel	$150	$1,200
			Car	$100	$800
			Per Diem	$40	$320
				Total:	**$3,420**
State coordination meetings: 2 trips to each boarder state (OR, NV, AZ) to work on coordinating efforts.	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$887	$5,322
			Hotel	$255	$3,060
			Car	$100	$1,200

			Per Diem	$40	$480
				Total:	**$10,062**
Milage to travel to multiple meetings throughout state that do not require airfare or overnight stay	1 Staff from CHHS - Deputy Secretary HIT. If more staff are in attendance, they will car pool in a single vehicle.	18	Meetings in SF (84 miles each way	$0.40	$1,211
		12	Meetings in Northern Sierra or Near Central Valley Region (32 miles each way	$0.40	$307
				Total:	**$1,518**
				TOTAL GOVERNANCE ENTITY TRAVEL:	**$15,000**

Detailed descriptions for each of the travel related items describing the trip purpose, attendees and costs can be found in the tables above.

D: 2010 Equipment:

TABLE 2010 F: FEDERAL REQUEST – Equipment

Items	Cost
Equipment budget for technology equipment required to support shared services in CA.	$200,000
TOTAL:	**$200,000**

There is an anticipated, yet undefined, need for equipment necessary to support state-level shared services, such as servers and network technology. Procurement of state-level shared services will be handled as a competitive bid for a service contract and are detailed in that section below. However, we are holding a budget of up to $200,000 to cover any necessary hardware purchases required to support those services. Details on exact state-level services and potential equipment purchases are still being worked out. Further details on exact regions and equipment purchases will come from the operational plan (April), technology infrastructure (April) and responses to procurement request (Aug/Sept).

There is no equipment expected as non-federal match.

E: 2010 Supplies:

TABLE 2010 G: FEDERAL REQUEST

GOVERNANCE ENTITY SUPPLIES				
Area	**Item**	**Amount**	**Rate**	**Cost**
Office Supplies	General Office Supplies per month	12	$1,000	$12,000
	Postage per month	12	$1,000	$12,000
	Copies (5,000 per month)	60000	$0.10	$6,000
			Total:	**$30,000**
New Technology	Laptops for each staff person hired	17	$2,500	$42,500

Equipment	Advanced software (MS Access, MS Project, Visio, PGP Encryption)	17	$2,000	$34,000
	Printers	5	$2,500	$12,500
	Projectors	2	$2,500	$5,000
	Wireless Router	2	$1,000	$2,000
	Docking Stations	17	$1,500	$25,500
	Photocopier	2	$5,000	$10,000
			Total:	**$131,500**
Furniture	Desks	17	$1,000	$17,000
	Chairs	17	$500	$8,500
	Credenza	17	$500	$8,500
	Conference Tables	3	$2,000	$6,000
	Chairs	20	$500	$10,000
			Total:	**$50,000**
			TOTAL GOVERNANCE ENTITY SUPPLIES:	**$211,500**
STATE RESOURCE SUPPLIES				
Furniture	Desks	11	$11,000	$11,000
	Chairs	11	$500	$5,500
	Credenza	11	$500	$5,500
	Conference Tables	1	$2,000	$2,000
	Chairs	11	$500	$5,500
			Total:	**$29,500**
Office Equipment/ Communications	General Office Supplies	1	$1,000	$1,000
	Postage	1	$1,000	$1,000
	Copies (2,500 per month)	30,000	$0.10	$3,000
	Minor Equipment	10	$200	$2,000
	Equipment Service Policies (estimate)	5	$1,000	$5,000
	Communications equipment for traveling state employees (e.g., blackberry, aircard)	8	$2,500	$20,000
	Professional Dues, subscriptions	10	$300	$3,000
			Total:	**$35,000**
			TOTAL STATE RESOURCES SUPPLIES:	**$64,500**
			TOTAL FEDERAL REQUEST:	**$276,000**

Supplies and equipment under $5,000 per item used by governance entity staff necessary to perform their work. Supplies and equipment are necessary to run routine office operations. We assume general office supplies including stationary, pens, printer cartridges, envelopes, and other supplies will be required. We assume Postage and courier costs are needed for correspondence to constituents (hospitals, practices, clinics and other stakeholders) as frequent communication both electronic and paper are expected. New laptop computers, printers and copiers will be needed for the staff recruited to run the governance entity and to ensure the office has basic administrative capabilities. Two copiers (one color, one black and white) are needed for reproduction and publication materials. Productivity software (Microsoft Office) is necessary for daily business to be conducted. We assume two projectors will be needed to ensure that one is available on site for conference room presentation and one available for presentation delivered off-site. Office furniture (desks, chairs and other furniture) will be needed for the workspace. We assume communications equipment including blackberries and aircards will be needed to support communication and allow for productivity for the anticipated frequent travel. Professional dues (including for example HIMSS memberships) are also anticipated. We assume a maintenance and service contract will be required for servicing telecommunication equipment, office equipment, hardware and other office infrastructure; we have provided a best guess estimate for that expected cost.

There is no budgeted non-federal match for supplies.

F: 2010 Contract:

TABLE 2010 H: FEDERAL REQUEST – Contracts

Name	Contract Description	Annual Rate	Hours	Cost
Manatt	Remaining 3 months contract with Manatt to facilitate development of the operational plan with eHealth workgroups. Includes staffing workgroups for Finance, Patient Engagement, and Vulnerable and Underserved Populations. Leveraged Contract – Tides Center.	Contract includes 5 Resources at a blended rate of $349/hr. Includes all expenses and overhead.	550	$192,000
TBD	University of California intern positions to support eHealth workgroups. Manage website, listserves, online workspaces, note-taking, and edit reports.	4 Resources at $25/hour.	8320	$208,000
TBD	Outside legal counsel to perform federal tracking of ONC and CMS, review and provide advise on contracts and policy. Competitive Bid.	Up to $300,000 for provision of legal counsel for less than 50% effort. (Blended rate of approximately $300/hour)	1,000	$300,000
Manatt	Consultant to manage transition of existing infrastructure and workgroups to the governance entity once determined. Consultant will work for a period of 3 months to assist with the transition and train governance entity staff. Leveraged Contract – Tides Center.	4 Resources for part time effort: Blended rate of $349/hr. Includes all expenses and overhead.	430	$150,000
Sujansky and Associates	Technical consultant to run technical advisory committee, participate in operational planning and technical architecture design. Leveraged Contract – Tides Center.	2 Resources for less than 50% effort: Blended rate of $150/hr. Includes all expenses and overhead.	1,000	$150,000
TBD	Recruiting of staff for governance entity positions. Contingent recruiting averages between 20% and 40% of salary. Recruiting will be done for 4 "C" level and 2 director level positions estimated at the low end of the range (20%).	Salary of 6 positions: $1,515,000.	20%	$303,000
TBD	Contract to outsource the public relations, communications, outreach and education components developed. First 3 months will include participation in the development of the communications plan while the remaining 9 months will be for plan execution. Competitive bid.	Competitive bid up to $200,000 to design and execute complete communications plan along with performing public relations duties.	N/A	$200,000
TBD	State grant management contract to	Competitive bid up to	N/A	$360,000

	develop, evaluate and support the demonstration and pilot work for privacy and security projects including, consent management, enhanced security standards, and best practices for management processes. Competitive bid.	$360,000 for 2 resources to complete privacy and security pilot deliverables		
TBD	Outsource contract to plan, facilitate and host the Annual forum. Competitive bid.	Competitive bid up to $50,000 to execute Annual Forum. Inclusive of site, equipment rental, refreshments, and facilitator time.	N/A	$50,000
TBD	Project manager reporting to Deputy Secretary of HIT responsible for coordinating all of the various workgroups, governance entity activities, and stakeholder activities. Keeps detailed minutes and issue logs, facilitates the resolution of issues across organizations. Competitive bid.	Competitive bid up to $300,000 for 1 project management resource for greater than 50% effort (approximately $150/hr)	2,000	$300,000
TBD	Financial planning consultant to develop the state-wide cost of HIE, strategies for both initial financing and ongoing revenue generations, input into sustainability models. Non-Competitive bid.	Competitive bid up to $200,000 for financial planning resource less than 50% effort (approximately $200/hr)	1,000	$200,000
TBD	Evaluation contract. Responsible for the facilitating the initial evaluation design with the governance entity, stakeholders and workgroups, data collection, and evaluation report to state, governance entity and ONC/CMS as required. Competitive Bid.	Competitive bid up to $350,000 to design evaluation, collect data and complete evaluation report for year 1.	N/A	$350,000
TBD	GE annual audit activities	○ $75K per year based on estimate received by one of the NY RHIOs	N/A	$75,000
TBD	Estimated contractual awards to provide the following state level shared services. Registry, Identify Management, and Directory Services. Awards are planned to be an up-to amount for each service handled by competitive bid. Types of shared services and budget amounts may be modified based on the completion of the operational plan scheduled for March.	○ Registry: $2M ○ Identity Mgmt: $1.5M ○ Directory Svcs: $1.5M	N/A	$5,000,000
TBD	Estimated contractual awards to advanced and expand existing HIE efforts across the state. Competitive Bid.	o Region 1: $1,000,000 o Region 2: $650,000 o Region 3: $1,000,000 o Region 4: $725,000	N/A	$3,375,000
TBD	Estimated contractual awards for connecting existing HIOs to state	o Region 1: $250,000 o Region 2: $250,000	N/A	$1,000,000

	services. Competitive Bid.	o Region 3: $250,000 o Region 4: $250,000		
TOTAL FEDERAL CONTRACTING REQUEST:				**$12,213,000**

TABLE 2010 I: NON-FEDERAL MATCH – State Contracts

CONTRACTUAL CONSULTING	Hours Annual	Hours Monthly	Hourly Rate	Annual Total
eHealth Support Services *Leveraged Procurement (CMAS)*	2222	185	$105	$233,334
MetaVista - Security Standards *Leveraged Procurement (CMAS)*	1095	91	$107	$117,137
UC-IA Salaries *Direct Interagency Agreement between two state agencies*	640	53	$51	$32,424
UC-IA Expenses and Indirect Costs	Expenses: $13,000 Indirect Costs: $4575			$17,575
New Project Management *Leveraged Procurement (CMAS)*	1682	140	$105	$176,635
Web Development *Leveraged Procurement (CMAS)*	856	71	$90	$77,040
TOTAL NON-FEDERAL MATCH CONTRACTS:				**$654,145**

The role of the state contracts covered under the federal request are:

- eHealth Support Services: Conducts research on Privacy and Security topics, facilitates task groups, supports CalPSAB efforts and CalOHII policy.
- MetaVista - Security Standards: Facilitates Security Committee of CalPSAB and joint task groups, drafts security standards and strategies.
- UC-IA : Annual cost the state has to maintain the California Health Information Legal Index database (CHILI). The agreement is for services from UC Hastings college of Law to research all federal and state health privacy and security laws.
- New Project Management: Responsible for coordinating workgroups, governance entity activities, and stakeholder activities focused on privacy and security of information exchange.
- Web Development: Existing state expenditures made in support of HIE web services. This includes web management and development cost already occurred or is being used to manage the state websites for HIE.

G: 2010 Other:

TABLE 2010 J: FEDERAL REQUEST – Other

Item	Rates:	Total Cost
Meeting facilitation expenses incurred by governance entity – 18 meetings per year. Estimated based on a hybrid of multiple applicant responses to RFI to become the states governance entity for HIE.	Site and Equipment Rental: $1,000 Refreshments: $600 Signage/Materials: $350 Name Badges/Notepads: $50 Total: $2,000 per meeting	$36,000
Survey and Virtual Meeting Equipment	"GotoMeeting": $1,000 SurveyMonkey: $200 Shared Wiki Tool: $800	$2,000

Governance Entity insurance	D&O insurance: $4,000 Liability insurance: $26,677	$30,677
Materials development and reproduction	Banners: $1,000 Graphics design: $5,000 4,000 Color Copies: $4,000 100,000 B&W Copies: $10,000	$20,000
Governance entity rent and utilities for 17 FTEs	Lease est. 200 sq.ft. per person at rate of $33/sq. ft.: $112,200 Utilities/Maintenance/Janitorial: at $5,000 per month: $60,000	$172,200
Training for governance entity staff	Meeting Site and Equipment: $1,000 Speakers Honoraria: $1,000 Refreshments: $600 Materials: $400	$3,000
State facility rent and utilities for 10.75 FTEs	Lease est. 200 sq.ft. per employee.: $53,750 Utilities/Maintenance/Janitorial at $1,667 per month: $19,545	$ 73,295
	Total Federal Request - Other:	**$337,172**

The items included in the other category support the needs of the governance entity and its employees engaged in the HIE efforts in addition to state resources involved in HIE efforts that are not covered under non-federal match. We assume the governance entity hosts 30 meeting annually:

- 1 Annual Form;
- 4 Quarterly meetings;
- 12 Technology Advisory Group meetings;
- 12 Privacy and Security Meetings; and
- 2 State coordination meetings held in CA (other meetings will be hosted by neighboring states and are covered under travel).

Facilitation for the Annual Forum is outsourced and the costs are detailed under the Contract section. Half of the Technology Advisory Group meetings and half of the Privacy and Security meetings will be conducted via remote teleconference. We assume the remaining 18 meetings will have hosting fees identified in this section. This section also includes our assumptions for governance entity insurance, both D&O and Liability. We also assume that the governance entity will be leasing office space in the San Francisco Bay area as the center for their activities. Additional state staffing will need office space for their operations. We assume that this office space will be located in Sacramento to be in close proximity to CHHS offices. Rates for both San Francisco office space is based on analysis by Grubb and Ellis. This section also includes ongoing training activities to keep governance entity staff current and train them on the use of specific software, equipment, tolls and methodologies that will be employed by the governance entity in providing services related to HIE. The state has used many tools associated with collaborating with stakeholders across the state in the development of its strategic plan. These tools include Survey Monkey to survey stakeholders, GoTo meeting to run webinars and Wiki tools for the collaborative creation of documents. These tools continue to be employed in the development of this budget and the operational plan. We assume that the governance entity and state will continue to use these tools throughout the duration of this project. We assume their will be need to develop professional material development and reproduction that is outside of the capacity of the state or the governance entity. These will include brochures, signage and large reproduction runs.

TABLE 2010 K: NON-FEDERAL MATCH – Other

Item	Cost
General expense budget = $110k/17 staff $6471 per person per year x 5.75 PYs: $37,208	$37,208
Communication expense of $100 per month per person for 5.75 FTE over 12 months	$6,900
Total Non-Federal Match - Other:	**$44,108**

General expense covers items such as supplies, photocopy, administrative support, technical support and , janitorial services associated with the 8 state resources that dedicate all or part of their time (5.75FTE) to this project. It is calculated by taking the current budget for the department of $110,000 per year for the existing 17 FTE of staff and dividing it by the 5.75FTE associated with this project. There is an additional charge for communication of $100 per month per FTE.

The items included in the other category support the needs of the state resources involved in HIE efforts that are budgeted to be covered by the state in support of this effort.

Object Class Category	Federal Funds	Non-Federal Cash	Non-Federal In-Kind	TOTAL
Personnel	$3,409,456		$656,968	$4,066,424
Fringe Benefits	$1,080,678		$197,090	$1,277,768
Travel	$217,000		$15,000	$232,000
Equipment	$200,000			$200,000
Supplies	$276,000			$276,000
Contractual	$12,213,000		$654,145	$12,867,145
Other	$337,172		$44,108	$381,280
Indirect Charges				$0
TOTAL	$17,733,306	$0	$1,567,311	$19,300,617

Budget Narrative/Justification —2011

A. 2011 Personnel:

Employees of the applying agency and the governance entity to be selected.

TABLE 2011A: FEDERAL REQUEST – Governance Entity

GOVERNANCE ENTITY PERSONNEL					
Position/ Names TBD	**Time**	**Annual**	**Monthly**	**Rate**	**Total**
CEO	100	2080	173	$132.21	$275,000
CTO	100	2080	173	$120.19	$250,000
CFO	100	2080	173	$120.19	$250,000
Senior Accountant	100	2080	173	$72.12	$150,000
Chief Medical Officer (CMO)	100	2080	173	$120.19	$250,000
Collaboration Manager	100	2080	173	$110.58	$230,000
Evaluator Oversight	100	2080	173	$67.31	$140,000
Technical Director	100	2080	173	$91.35	$190,000
P&S Director	100	2080	173	$84.13	$175,000
Project Manager	100	2080	173	$84.13	$175,000
Applications Analyst	100	2080	173	$60.10	$125,000
Applications Analyst	100	2080	173	$60.10	$125,000
Analyst	100	2080	173	$60.10	$125,000
Analyst	100	2080	173	$60.10	$125,000
Principal Investigator	100	2080	173	$72.12	$150,000
Administrative Assistants	100	2080	173	$33.65	$70,000
Administrative Assistants	100	2080	173	$33.65	$70,000
				GOVERNANCE ENTITY TOTAL:	**$2,875,000**
STATE PERSONNEL					
Position/Names	**Time**	**Annual**	**Monthly**	**Rate**	**Total**
SSM II - Security Currently VACANT	95	1985	165	$37.17	$73,776
SSM II - HIE Currently VACANT	95	1985	165	$37.17	$73,776
SSMI - Eva Coblentz	95	1985	165	$33.86	$67,200
AGPA - Currently VACANT	95	1985	165	$29.33	$58,212
AGPA - Currently VACANT	95	1985	165	$29.33	$58,212
Staff Counsel - Currently VACANT	100	2413	201	$42.13	$101,640
Staff Counsel - Currently VACANT	100	2413	201	$42.13	$101,640
				STATE TOTAL:	**$534,456**
				TOTAL FEDERAL REQUEST:	**$3,409,456**

The governance entity staff are responsible for the daily operations of the governance entity. The HIE Governance Entity will 1) have a diverse board that accommodates broad stakeholder representation and State leadership, 2) engender trust and collaboration between and among all stakeholders, 3) convene stakeholders to generate statewide policy guidance but not operate HIE systems except as requested by and driven from the stakeholders, and 4) employ robust administrative and financial processes to support sustainability, transparency and accountability.

- CEO: Will have overall responsibility for the governance entity.
- CTO: The CTO is responsible for leading the selection of standards and infrastructure used in CA. They facilitate and coordinate the monthly technology workgroup meetings, bring technical architecture expertise to the monthly privacy and security meetings with CalPSAB, and represent CA's technical approach in meetings with Border States as well as other awardees at the two annual meetings. They will also develop and manage the 3 procurements in FY 1 and FY 2 for share services, expansion of existing regional information exchange efforts and the connection of existing HIO's.
- CFO: This will be a responsible for finance, accounting, contracting, human resources and office management. They are also specifically responsible for internal audit, compliance with applicable laws and regulations and for developing necessary policies and procedures or for assuring that these are developed and maintained current.
- Senior Accountant: The Accounting Clerk will assist the CFO with accounting and financial functions. We believe that the combination of a CFO and an Accounting Clerk are adequate for a program of this size.
- Chief Medical Officer (CMO): The CMO will be a licensed physician with experience in the adoption and use of clinical information systems (CIS). They will be the governance entity's physician advocate and represent physician workflow issues and use cases in the technology workgroup as well as the privacy and security meetings.
- Collaboration Manager: Will be responsible for the marketing, outreach and coordination efforts of the governance entity. They will be focused on driving participation and collaboration from various stakeholders including providers, state agencies, public health, privacy and security efforts, and Border States.
- Evaluator Oversight: Will be responsible for setting the initial evaluation metrics, defining data collection approaches and overseeing the data collection and analysis of the metrics. They will procure, manage and work directly with an evaluation firm commissioned by California Health & Human Services Agency as required under the FOA in these efforts.
- Technical Director: Will work directly with and for the CTO. Specific emphasis on the first two years will be on setting up the technical workgroups and developing, managing and evaluating the procurements and manage contracts with vendors to ensure compliance with contract terms and conditions.
- P&S Director: Will be the governance entities direct liaison with CalPSAB and the state of CA's privacy and security efforts. They are responsible for running the privacy and security workgroup and collaboratively drafting the privacy and security requirements, implementation approaches, architecture and statewide policy guidance.
- Project Manager: The PM will work directly with the CEO, CTO, CMO, Collaboration Manager, Evaluator Oversight Manager, Technical Director and the P&S Director to maintaining detailed project plans, action item lists, issue logs for all project components.
- Applications Analyst (2) and Analyst(2): Will assist the Technical Director and one will Assist the P&S director in their work efforts. The applications analyst position requires specific knowledge of applications: used in clinical setting, support HIE, and supporting privacy and security. The Analyst positions require knowledge of various provider settings and workflows and/or privacy and security. The analysts will provide technical assistance and work directly with regional extension center

programs and other initiatives to assist provider adoption and meaningful use of electronic health records across California

- Principal Investigator: Reports directly to the CEO. They are the primary individual in charge of the cooperative agreement and are responsible for all actions required to manage and complete the aspects of the cooperative agreement. They will also support the Evaluation Oversight manager.
- Administrative Assistants (2): Handles the administrative activities, scheduling and travel arrangements for the governance entity staff.

State Personnel:

- SSM II - Security Currently VACANT: Facilitate Security Committee of CalPSAB and manages committee efforts, security standards and strategies.
- SSM II - HIE Currently VACANT: Facilitate HIE Committee of CalPSAB and manages committee efforts, task groups, and implementation & pilot strategies.
- SSMI - Eva Coblentz Facilitates Education Committee and task groups, develops education materials & maintains website.
- AGPA - Currently VACANT: Support to CalOHII, CalPSAB and HIE efforts
- AGPA - Currently VACANT: Support to CalOHII, CalPSAB and HIE efforts
- Staff Counsel - Currently VACANT: Support Legal Committee of CalPSAB, research current state and federal law, identify misalignment, strategize fixes to state law.
- Staff Counsel - Currently VACANT: Support Legal Committee of CalPSAB, research current state and federal law, identify misalignment, strategize fixes to state law.
  Note: STAFF COUNSEL POSITIONS CONTAIN OVERHEAD FOR LAW STUDENT

TABLE 2011 B: NON-FEDERAL MATCH – State Resources

Individual's Name/Title	Time	Annual	Monthly	Rate	Total
Jonah Frohlich, Deputy Secretary, HIT	100	2080	173	$69.23	$144,120
BTH	40	832	69	$71.95	$59,880
CEA I - Bobbie Holm	90	1647	137	$56.01	$92,246
CEA II - Alex Kam	90	1676	140	$58.35	$97,779
Program Mgr – K. D.Greenbaum	90	1800	150	$46.18	$83,120
SSM II - Azadeh Mohandessi-Fares	25	532	44	$37.17	$19,793
Staff Counsel - Suzanne Giorgi	90+	1800	150	$61.97	$111,550
DPM III Christine Schmoeckel	50	900	75	$53.87	$48,480
			TOTAL PERSONNEL IN KIND		**$656,968**

The role of the state resources covered under the non-federal match are:

- Jonah Frohlich, Deputy Secretary, HIT
- BTH – California Business, Transportation and Housing Agency : Facilitates State contracting.
- CEA I - Bobbie Holm: Facilitates the CalPSAB structure, the Advisory Board, oversight of all PSAB committees, coordination with federal efforts.
- CEA II - Alex Kam: Acting Director of CalOHII, coordinates CalOHII and CA HIE Advisory Board efforts, strategies and budget oversight.
- Program Mgr – K. D.Greenbaum: Facilitates the Privacy and HIE Committees and task groups, committee interaction and support the CalPSAB efforts.
- SSM II - Azadeh Mohandessi-Fares: Will take over facilitation of the Privacy Committee and task groups, HIE legislation and specializes in pilots.

- Staff Counsel - Suzanne Giorgi: Facilitates the Legal Committee of CalPSAB, task groups, research, legislation, enforcement of privacy and security.
- DPM III Christine Schmoeckel: Support facilitation of the CA HIE Advisory Board effort with an IT focus.

B. 2011 Fringe Benefits:

Employees of the applying agency and the governance entity to be selected.

Fringe benefits for Governance Entity employees covered under federal match are calculated using a flat 30%. With a governance entity salaries equaling $3,000,000 at 30% equals $900,000.

Fringe benefits for state employees covered under federal match are defined in the following table:

TABLE 2011 C: FEDERAL REQUEST – State Resources

Component	Amount
Health Insurance	$40,259
Industrial Disability Leave	$880
OASDI	$29,008
Other	$30,457
Retirement	$74,844
Unemployment Insurance	$187
Workers Compensation	$5,043
Total:	**$180,678**

Fringe benefits for state employees covered under non-federal match are calculated using a flat rate of 30%. With salaries of $656,968 at 30% equals $197,090.

C: 2011 Travel:

TABLE 2011 D: FEDERAL REQUEST

Trip	Staff	Days	Item	Rate	Cost
GOVERNANCE ENTITY TRAVEL					
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	6 GE staff (CEO, CMO, CTO, P&S, PM & Collab)	2	Airfare	$300	$7,200
			Hotel	$200	$9,600
			Car	$100	$4,800
			Per Diem	$40	$1,920
				Total:	**$23,520**
Technology Advisory Group Meetings (6) monthly meetings (travel every other month) to refine and further develop	6 GE staff (CTO, Tech Dir, P&S Dir, PM, App. Analysts(2))	2	Airfare	$300	$10,800
			Hotel	$200	$14,400

technology standards and architecture.			Car	$100	$7,200
			Per Diem	$40	$2,880
				Total:	**$35,280**
Privacy and Security Meetings (6) monthly meetings (travel every other month) to refine and further develop privacy and standards and architecture.	5 GE staff (CEO, CTO, P&S, CMO, Analyst)	2	Airfare	$300	$9,000
			Hotel	$200	$12,000
			Car	$100	$6,000
			Per Diem	$40	$2,400
				Total:	**$29,400**
State coordination meetings: 2 trips to each boarder state (OR, NV, AZ) to work on coordinating efforts.	6 GE staff (CEO, CMO, CTO, P&S, PM & Collab)	3	Airfare	$640	$23,035
			Hotel	$225	$24,300
			Car	$100	$10,800
			Per Diem	$40	$4,320
				Total:	**$62,455**
Public Conferences related to HIE and HIT: Attendance at 2 conferences for up to 5 people to stay abreast of trends in HIE and HIT. Conferences may include: HIMSS, WOHIT, Mayo, etc.	5 GE staff (CEO, CMO, CTO, P&S, & Collab)	4	Airfare	$680	$6,795
			Hotel	$255	$10,200
			Car	$100	$4,000
			Per Diem	$40	$1,600
			Conference Fees	$250	$10,000
				Total:	**$32,595**
State HIE Leadership Training and State HIE Forum supported by ONC	4 GE Staff (CEO, CMO, CTO, & P&S)	2	Airfare	$887	$7,096
			Hotel	$255	$4,080
			Car	$100	$1,600
			Per Diem	$40	$640
				Total:	**$13,416**
				TOTAL GOVERNANCE ENTITY TRAVEL:	**$196,666**
STATE EMPLOYEE TRAVEL					

Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	2 Staff from CalOHII	2	Airfare	$280	$2,240
			Hotel	$150	$2,400
			Car	$100	$1,600
			Per Diem	$35	$560
				Total:	**$6,800**
Privacy and Security Meetings (6) monthly meetings (travel every other month) to refine and further develop privacy and standards and architecture.	2 Staff from CalOHII	2	Airfare	$280	$3,360
			Hotel	$150	$3,600
			Car	$100	$2,400
			Per Diem	$35	$840
				Total:	**$10,200**
State HIE Leadership Training and State HIE Forum supported by ONC	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$887	$1,774
			Hotel	$255	$1,020
			Car	$100	$400
			Per Diem	$35	$140
				Total:	**$3,334**
				TOTAL STATE EMPLOYEE TRAVEL:	**$20,334**
				TOTAL FEDERAL REQUEST FOR TRAVEL:	**$217,000**

TABLE 2011 E: NON-FEDERAL MATCH – State Resources

Trip	Staff	Days	Item	Rate	Cost
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$275	$1,100
			Hotel	$150	$1,200
			Car	$100	$800
			Per Diem	$40	$320
				Total:	**$3,420**
State coordination meetings: 2 trips to each boarder state (OR, NV, AZ) to work on coordinating efforts.	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$887	$5,322
			Hotel	$255	$3,060
			Car	$100	$1,200
			Per Diem	$40	$480

				Total:	**$10,062**
Mileage to travel to multiple meetings throughout state that do not require airfare or overnight stay	1 Staff from CHHS - Deputy Secretary HIT. If more staff are in attendence, they will car pool in a single vehicle.	18	Meetings in SF (84 miles each way	$0.40	$1,211
		12	Meetings in Northern Sierra or Near Central Valley Region (32 miles each way	$0.40	$307
				Total:	**$1,518**
				TOTAL GOVERNANCE ENTITY TRAVEL:	**$15,000**

D: 2011 Equipment:

TABLE 2011 F: FEDERAL REQUEST – Equipment

Items	Cost
Equipment budget for technology equipment required to support shared services in CA.	$100,000
TOTAL:	**$100,000**

There is an anticipated, yet undefined, need for equipment necessary to support state-level shared services, such as servers and network technology. Procurement of state-level shared services will be handled as a competitive bid for a service contract and are detailed in that section below. However, we are holding a budget of up to $100,000 to cover any necessary hardware purchases required to support those services. Details on exact state-level services and potential equipment purchases are still being worked out. Further details on exact regions and equipment purchases will come from the operational plan (April), technology infrastructure (April) and responses to procurement request (Aug/Sept).

There is no equipment expected as non-federal match.

E: 2011 Supplies:

TABLE 2011 G: FEDERAL REQUEST

GOVERNANCE ENTITY SUPPLIES				
Area	**Item**	**Amount**	**Rate**	**Cost**
Office Supplies	General Office Supplies per month	12	$1,000	$12,000
	Postage per month	12	$1,500	$18,000
	Copies (10,000 per month)	120000	$0	$12,000
			Total:	**$42,000**
Technology replacement or upgrades	Budget 1 replacement laptop to replace lost or stolen	1	$2,500	$2,500
			Total:	**$2,500**
			TOTAL GOVERNANCE ENTITY SUPPLIES:	**$44,500**
STATE RESOURCE SUPPLIES				

Furniture	Desks	1	$1,000	$1,000
	Desk and Conference Table Chairs	4	$500	$2,000
			Total:	**$3,000**
Office Equipment/ Communications	General Office Supplies	1	$1,000	$1,000
	Postage	1	$1,000	$1,000
	Copies (2,500 per month)	30,000	$0.10	$3,000
	Minor Equipment	10	$200	$2,000
	Equipment Service Policies (estimate)	5	$1,000	$5,000
	Budget 1 replacement Communications equipment for traveling state employees (e.g., blackberry, aircard)	1	$2,500	$2,500
	Professional Dues, subscriptions	10	$300	$3,000
			Total:	**$17,500**
			TOTAL STATE RESOURCES SUPPLIES:	**$20,050**
			TOTAL FEDERAL REQUEST:	**$64,550**

Supplies and equipment under $5,000 per item used by governance entity staff necessary to perform their work. Supplies and equipment are necessary to operate and run the governance entity. General office supplies including stationary, printer cartridges, envelopes, and other supplies are required. Postage and courier costs are needed for correspondence to constituents (hospitals, practices, clinics and other stakeholders) as frequent communication both electronic and paper are expected. One replacement laptop computer and one communication equipment (blackberry) are anticipated to account for lost, stolen or damaged computers. Professional dues (including for example HIMSS memberships) are anticipated.

There are no budgeted non-federal match for supplies.

F: 2011 Contract:

TABLE 2011 H: FEDERAL REQUEST – Contracts

Name	Contract Description	Annual Rate	Hours	Cost
TBD	Outside legal counsel to perform federal tracking of ONC and CMS, review and provide advice on contracts and policy. Competitive bid.	Competitive bid up to $150,000 to provide legal counsel, part time. (Blended rate of approximately $300/ hour)	500	$150,000
TBD	University of California intern positions to support eHealth workgroups. Manage website, listserves, online workspaces, notetaking, and edit reports.	4 Resources at $25/hour.	8320	$208,000
TBD	Technical consultant to run technical advisory committee, participate in operational planning and technical architecture design. Competitive bid.	Competitive bid up to $100,000 for technical consultant to complete technical architecture design for Year 2.	N/A	$100,000
TBD	Contract to outsource the communications, outreach and education components developed. First 3 months will include participation in the	Competitive bid up to $200,000 to devise and execute communications plan.	N/A	$200,000

	development of the communications plan while the remaining 9 months will be for plan execution			
TBD	State grant management contract to develop, evaluate and support the demonstration and pilot work for privacy and security projects including, consent management, enhanced security standards, and best practices for management processes. Competitive bid.	Competitive bid up to $360,000 for 2 resources to complete privacy and security pilot deliverables	N/A	$360,000
TBD	Outsource contract to plan, facilitate and host the Annual forum	Competitive bid up to $50,000 to execute Annual Forum. Inclusive of site, equipment rental, refreshments, and facilitator time.	N/A	$50,000
TBD	Project manager reporting to Deputy Secretary of HIT responsible for coordinating all of the various workgroups, governance entity activities, and stakeholder activities. Keeps detailed minutes and issue logs, facilitates the resolution of issues across	Competitive bid up to $216,000 for 1 project management resource, more than 50% effort. (approximately $150/hr)	1,440	$216,000
TBD	Financial planning consultant to develop the state-wide cost of HIE, strategies for both initial financing and ongoing revenue generations, input into sustainability models	Competitive bid up to $200,000 for financial planning resource, less than 50% effort (approximately $200/hr)	1,000	$200,000
TBD	Evaluation contract. Responsible for the facilitating the initial evaluation design with the governance entity, stakeholders and workgroups, data collection, and evaluation report to state, governance entity and ONC/CMS as required.	Competitive bid up to $175,000 to review previous report, design evaluation plan, collect data and complete Year 2 Evaluation Report.	N/A	$175,000
TBD	GE annual audit activities	○ $75K per year based on estimate received by one of the NY RHIOs	N/A	$75,000
TBD	Estimated contractual awards to provide the following state level shared services. Registry, Identify Management, and Directory Services. Awards are planned to be an up-to amount for each service handled by competitive bid. Types of shared services and budget amounts may be modified	○ Registry: $1.5M ○ Identity Mgmt: $1M ○ Directory Svcs: $1M	N/A	$3,500,000

	based on the completion of the operational plan scheduled for March.			
TBD	Estimated contractual awards to advanced and expand existing HIE efforts across the state.	o Region 1: $250,000 o Region 2: $250,000 o Region 3: $250,000 o Region 4: $250,000		$1,000,000
			TOTAL FEDERAL CONTRACTING REQUEST:	**$6,234,000**

TABLE 2011 I: NON-FEDERAL MATCH – State Contracts

CONTRACTUAL CONSULTING	Hours Annual	Hours Monthly	Hourly Rate	Annual Total
eHealth Support Services *Leveraged Procurement (CMAS)*	2222	185	$105	$233,334
MetaVista - Security Standards *Leveraged Procurement (CMAS)*	1194	100	$107	$127,786
UC-IA Salaries *Direct Interagency Agreement between two state agencies*	640	53	$51	$32,424
UC-IA Expenses and Indirect Costs	Expenses: $13,000 Indirect Costs: $4575			$17,575
New Project Management *Leveraged Procurement (CMAS)*	1682	140	$105	$176,635
Web Development *Leveraged Procurement (CMAS)*	856	71	$90	$77,040
			TOTAL NON-FEDERAL MATCH CONTRACTS:	**$664,794**

The role of the state contracts covered under the federal request are:

- eHealth Support Services: Conducts research on Privacy and Security topics, facilitates task groups, supports CalPSAB efforts and CalOHII policy.
- MetaVista - Security Standards: Facilitates Security Committee of CalPSAB and joint task groups, drafts security standards and strategies.
- UC-IA: Annual cost the state has to maintain the California Health Information Legal Index database (CHILI). The agreement is for services from UC Hastings college of Law to research all federal and state health privacy and security laws.
- Project Management: Responsible for coordinating workgroups, governance entity activities, and stakeholder activities focused on privacy and security of information exchange
- Web Development: Existing state expenditures made in support of HIE web services. This includes web management and development cost already occurred or is being used to manage the state websites for HIE.

G: 2011 Other:

TABLE 2011 J: FEDERAL REQUEST – Other

Item	Rates	Cost
Meeting facilitation expenses incurred by governance entity – 18 meetings per year. Estimated based on a hybrid of multiple applicant responses to RFI to become the states	Site and Equipment Rental: $1,000 Refreshments: $600 Signage/Materials: $350 Name Badges/Notepads: $50	$36,000

governance entity for HIE	Total: $2,000 per meeting	
Survey and Virtual Meeting Equipment	"GotoMeeting": $1,000 SurveyMonkey: $200 Shared Wiki Tool: $800	$2,000
Governance Entity insurance	D&O insurance: $4,000 Liability insurance: $20,000	$24,000
Materials development and reproduction	Graphics design: $5,000 2,000 Color Copies: $2,000 80,000 B&W Copies: $8,000	$15,000
Governance entity rent and utilities for 17 FTEs	Lease est. 200 sq.ft. per person at rate of $33/sq. ft.: $112,200 Utilities/Maintenance/Janitorial: at $5,000 per month: $60,000	$172,200
Training for governance entity staff	Meeting Site and Equipment: $1,000 Speakers Honoraria: $1,000 Refreshments: $600 Materials: $400	$3,000
State facility rent and utilities for 10.75 FTEs	Lease est. 200 sq.ft. per employee.: $53,750 Utilities/Maintenance/Janitorial at $1,667 per month: $19,545	$73,295
Total Federal Request - Other:		**$325,495**

The items included in the other category support the needs of the governance entity and its employees engaged in the HIE efforts in addition to state resources involved in HIE efforts that are not covered under non-federal match. We assume the governance entity hosts 30 meeting annually:

- 1 Annual Form;
- 4 Quarterly meetings;
- 12 Technology Advisory Group meetings;
- 12 Privacy and Security Meetings; and
- 2 State coordination meetings held in CA (other meetings will be hosted by neighboring states and are covered under travel).

Facilitation for the Annual Forum is outsourced and the costs are detailed under the Contract section. Half of the Technology Advisory Group meetings and half of the Privacy and Security meetings will be conducted via remote teleconference. We assume the remaining 18 meetings will have hosting fees identified in this section. This section also includes our assumptions for governance entity insurance, both D&O and Liability. We also assume that the governance entity will be leasing office space in the San Francisco Bay area as the center for their activities. Additional state staffing will need office space for their operations. We assume that this office space will be located in Sacramento to be in close proximity to CHHS offices. Rates for both San Francisco office space is based on analysis by Grubb and Ellis. This section also includes ongoing training activities to keep governance entity staff current and train them on the use of specific software, equipment, tolls and methodologies that will be employed by the governance entity in providing services related to HIE. The state has used many tools associated with collaborating with stakeholders across the state in the development of its strategic plan. These tools include Survey Monkey to survey stakeholders, GoTo meeting to run webinars and Wiki tools for the collaborative creation of documents. These tools continue to be employed in the development of this budget and the operational plan. We assume that the governance entity and state will continue to use these tools throughout the duration of this project. We assume their will be need to develop professional material development and reproduction that is outside of the capacity of the state or the governance entity. These will include brochures, signage and large reproduction runs.

TABLE 2011 K: NON-FEDERAL MATCH – Other

Item	Cost
General expense budget = $110k/17 staff $6471 per person per year x 5.75 PYs: $37,208	$37,208
Communication expense of $100 per month per person for 5.75 FTE over 12 months	$6,900
Total Non-Federal Match - Other:	**$44,108**

The items included in the other category support the needs of the state resources involved in HIE efforts that are budgeted to be covered by the state in support of this effort. General expense covers items such as supplies, photocopy, administrative support, technical support and , janitorial services associated with the 8 state resources that dedicate all or part of their time (5.75FTE) to this project. It is calculated by taking the current budget for the department of $110,000 per year for the existing 17 FTE of staff and dividing it by the 5.75FTE associated with this project. There is an additional charge for communication of $100 per month per FTE.

Object Class Category	Federal Funds	Non-Federal Cash	Non-Federal In-Kind	TOTAL
Personnel	$3,409,456		$656,968	$4,066,424
Fringe Benefits	$1,080,678		$197,090	$1,277,768
Travel	$217,000		$15,000	$232,000
Equipment	$100,000			$100,000
Supplies	$64,550			$64,550
Contractual	$6,234,000		$664,794	$6,898,794
Other	$325,495		$44,108	$369,603
Indirect Charges				$0
TOTAL	$11,431,179	$0	$1,577,960	$13,009,139

Budget Narrative/Justification —2012

A. 2012 Personnel:

Employees of the applying agency and the governance entity to be selected.

TABLE 2012 A: FEDERAL REQUEST – Governance Entity

GOVERNANCE ENTITY PERSONNEL					
Position/ Names TBD	**Time**	**Annual**	**Monthly**	**Rate**	**Total**
CEO	50%	1040	87	$132.21	$137,500
CTO	50%	1040	87	$120.19	$125,000
CFO	50%	1040	87	$120.19	$125,000
Senior Accountant	50%	1040	87	$72.12	$75,000
Chief Medical Officer (CMO)	50%	1040	87	$120.19	$125,000
Collaboration Manager	100%	2080	173	$110.58	$230,000
Evaluator Oversight	100%	2080	173	$67.31	$140,000
Technical Director	100%	2080	173	$91.35	$190,000
P&S Director	100%	2080	173	$84.13	$175,000
Project Manager	100%	2080	173	$84.13	$175,000
Applications Analyst	100%	2080	173	$60.10	$125,000
Applications Analyst	0%	0	0	$60.10	$0
Analyst	100%	2080	173	$60.10	$125,000
Analyst	0%	0	0	$60.10	$0
Principal Investigator	92%	1913.6	159	$72.12	$137,500
Administrative Assistants	75%	1560	130	$33.65	$52,500
Administrative Assistants	0%	0	0	$33.65	$0
				GOVERNANCE ENTITY TOTAL:	**$1,937,500**
STATE PERSONNEL					
Position/Names	**Time**	**Annual**	**Monthly**	**Rate**	**Total**
SSM II - Security Currently VACANT	95+	1985	165	$37.17	$73,776
SSM II - HIE Currently VACANT	95+	1985	165	$37.17	$73,776
SSMI - Eva Coblentz	95+	1985	165	$33.86	$67,200
AGPA - Currently VACANT	95+	1985	165	$29.33	$58,212
AGPA - Currently VACANT	95+	1985	165	$29.33	$58,212
Staff Counsel - Currently VACANT	100	2413	201	$42.13	$101,640
Staff Counsel - Currently VACANT	100	2413	201	$42.13	$101,640
				STATE TOTAL:	**$534,456**
				TOTAL FEDERAL REQUEST:	**$2,471,956**

The governance entity staff are responsible for the daily operations of the governance entity. The HIE Governance Entity will 1) have a diverse board that accommodates broad stakeholder representation and

State leadership, 2) engender trust and collaboration between and among all stakeholders, 3) convene stakeholders to generate statewide policy guidance but not operate HIE systems except as requested by and driven from the stakeholders, and 4) employ robust administrative and financial processes to support sustainability, transparency and accountability.

- CEO: Will have overall responsibility for the governance entity.
- CTO: The CTO is responsible for leading the selection of standards and infrastructure used in CA. They facilitate and coordinate the monthly technology workgroup meetings, bring technical architecture expertise to the monthly privacy and security meetings with CalPSAB, and represent CA's technical approach in meetings with Border States as well as other awardees at the two annual meetings. They will also develop and manage the 3 procurements in FY 1 and FY 2 for share services, expansion of existing regional information exchange efforts and the connection of existing HIO's.
- CFO: This will be a responsible for finance, accounting, contracting, human resources and office management. They are also specifically responsible for internal audit, compliance with applicable laws and regulations and for developing necessary policies and procedures or for assuring that these are developed and maintained current.
- Senior Accountant: The Accounting Clerk will assist the CFO with accounting and financial functions. We believe that the combination of a CFO and an Accounting Clerk are adequate for a program of this size.
- Chief Medical Officer (CMO): The CMO will be a licensed physician with experience in the adoption and use of clinical information systems (CIS). They will be the governance entity's physician advocate and represent physician workflow issues and use cases in the technology workgroup as well as the privacy and security meetings.
- Collaboration Manager: Will be responsible for the marketing, outreach and coordination efforts of the governance entity. They will be focused on driving participation and collaboration from various stakeholders including providers, state agencies, public health, privacy and security efforts, and Border States.
- Evaluator Oversight: Will be responsible for setting the initial evaluation metrics, defining data collection approaches and overseeing the data collection and analysis of the metrics. They will procure, manage and work directly with an evaluation firm commissioned by California Health & Human Services Agency as required under the FOA in these efforts.
- Technical Director: Will work directly with and for the CTO. Specific emphasis on the first two years will be on setting up the technical workgroups and developing, managing and evaluating the procurements and manage contracts with vendors to ensure compliance with contract terms and conditions.
- P&S Director: Will be the governance entities direct liaison with CalPSAB and the state of CA's privacy and security efforts. They are responsible for running the privacy and security workgroup and collaboratively drafting the privacy and security requirements, implementation approaches, architecture and statewide policy guidance.
- Project Manager: The PM will work directly with the CEO, CTO, CMO, Collaboration Manager, Evaluator Oversight Manager, Technical Director and the P&S Director to maintaining detailed project plans, action item lists, issue logs for all project components.
- Applications Analyst (1) and Analyst (1): Will assist the Technical Director and the P&S director in their work efforts. The applications analyst position requires specific knowledge of applications: used in clinical setting, support HIE, and supporting privacy and security. The Analyst position require knowledge of various provider settings and workflows and/or privacy and security. The analysts will provide technical assistance and work directly with regional extension center programs and other initiatives to assist provider adoption and meaningful use of electronic health records across California

- Principal Investigator: Reports directly to the CEO. They are the primary individual in charge of the cooperative agreement and are responsible for all actions required to manage and complete the aspects of the cooperative agreement. They will also support the Evaluation Oversight manager.
- Administrative Assistants (1): Handles the administrative activities, scheduling and travel arrangements for the governance entity staff.

State Personnel:

- SSM II - Security Currently VACANT: Facilitate Security Committee of CalPSAB and manages committee efforts, security standards and strategies.
- SSM II - HIE Currently VACANT: Facilitate HIE Committee of CalPSAB and manages committee efforts, task groups, and implementation & pilot strategies.
- SSMI - Eva Coblentz Facilitates Education Committee and task groups, develops education materials & maintains website.
- AGPA - Currently VACANT: Support to CalOHII, CalPSAB and HIE efforts
- AGPA - Currently VACANT: Support to CalOHII, CalPSAB and HIE efforts
- Staff Counsel - Currently VACANT: Support Legal Committee of CalPSAB, research current state and federal law, identify misalignment, strategize fixes to state law.
- Staff Counsel - Currently VACANT: Support Legal Committee of CalPSAB, research current state and federal law, identify misalignment, strategize fixes to state law.
  Note: STAFF COUNSEL POSITIONS CONTAIN OVERHEAD FOR LAW STUDENT

TABLE 2012 B: NON-FEDERAL MATCH – State Resources

Individual's Name/Title	Time	Annual	Monthly	Rate	Total
Jonah Frohlich, Deputy Secretary, HIT	100	2080	173	$69.23	$144,120
BTH	40	832	69	$71.95	$59,880
CEA I - Bobbie Holm	90	1647	137	$56.01	$92,246
CEA II - Alex Kam	90	1676	140	$58.35	$97,779
Program Mgr – K. D.Greenbaum	90	1800	150	$46.18	$83,120
SSM II - Azadeh Mohandessi-Fares	25	532	44	$37.17	$19,793
Staff Counsel - Suzanne Giorgi	90	1800	150	$61.97	$111,550
DPM III Christine Schmoeckel	50	900	75	$53.87	$48,480
				TOTAL PERSONNEL IN KIND	**$656,968**

The role of the state resources covered under the non-federal match are:

- Jonah Frohlich, Deputy Secretary, HIT
- BTH – California Business, Transportation and Housing Agency : Facilitates State contracting.
- CEA I - Bobbie Holm: Facilitates the CalPSAB structure, the Advisory Board, oversight of all PSAB committees, coordination with federal efforts.
- CEA II - Alex Kam: Acting Director of CalOHII, coordinates CalOHII and CA HIE Advisory Board efforts, strategies and budget oversight.
- Program Mgr – K. D.Greenbaum: Facilitates the Privacy and HIE Committees and task groups, committee interaction and support the CalPSAB efforts.
- SSM II - Azadeh Mohandessi-Fares: Will take over facilitation of the Privacy Committee and task groups, HIE legislation and specializes in pilots.
- Staff Counsel - Suzanne Giorgi: Facilitates the Legal Committee of CalPSAB, task groups, research, legislation, enforcement of privacy and security.

- DPM III Christine Schmoeckel: Support facilitation of the CA HIE Advisory Board effort with an IT focus.

B. 2012 Fringe Benefits:

Employees of the applying agency and the governance entity to be selected.

Fringe benefits for Governance Entity employees covered under federal match are calculated using a flat 30%. With a governance entity salaries equaling $2,000,000 at 30% equals $600,000.

Fringe benefits for state employees covered under federal match are defined in the following table:

TABLE 2012 C: FEDERAL REQUEST – State Resources

Component	Amount
Health Insurance	$40,259
Industrial Disability Leave	$880
OASDI	$29,008
Other	$30,457
Retirement	$74,844
Unemployment Insurance	$187
Workers Compensation	$5,043
Total:	**$180,678**

Fringe benefits for state employees covered under non-federal match are calculated using a flat rate of 30%. With salaries of $656,968 at 30% equals $197,090.

C: 2012 Travel:

TABLE 2012 D: FEDERAL REQUEST

Trip	Staff	Days	Item	Rate	Cost
GOVERNANCE ENTITY TRAVEL					
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	6 GE staff (CEO, CMO, CTO, P&S, PM & Collab)	2	Airfare	$300	$7,200
			Hotel	$200	$9,600
			Car	$100	$4,800
			Per Diem	$40	$1,920
				Total:	**$23,520**
Technology Advisory Group Meetings (6) monthly meetings (travel every other month) to refine and further develop technology standards and architecture.	6 GE staff (CTO, Tech Dir, P&S Dir, PM, App. Analysts(2))	2	Airfare	$300	$10,800
			Hotel	$200	$14,400
			Car	$100	$7,200

			Per Diem	$40	$2,880
				Total:	**$35,280**
Privacy and Security Meetings (6) monthly meetings (travel every other month) to refine and further develop privacy and standards and architecture.	5 GE staff (CEO, CTO, P&S, CMO, Analyst)	2	Airfare	$300	$9,000
			Hotel	$200	$12,000
			Car	$100	$6,000
			Per Diem	$40	$2,400
				Total:	**$29,400**
State coordination meetings: 2 trips to each boarder state (OR, NV, AZ) to work on coordinating efforts.	6 GE staff (CEO, CMO, CTO, P&S, PM & Collab)	3	Airfare	$640	$23,035
			Hotel	$225	$24,300
			Car	$100	$10,800
			Per Diem	$40	$4,320
				Total:	**$62,455**
Public Conferences related to HIE and HIT: Attendance at 2 conferences for up to 5 people to stay abreast of trends in HIE and HIT. Conferences may include: HIMSS, WOHIT, Mayo, etc.	5 GE staff (CEO, CMO, CTO, P&S, & Collab)	4	Airfare	$680	$6,795
			Hotel	$255	$10,200
			Car	$100	$4,000
			Per Diem	$40	$1,600
			Conference Fees	$250	$10,000
				Total:	**$32,595**
State HIE Leadership Training and State HIE Forum supported by ONC	4 GE Staff (CEO, CMO, CTO, & P&S)	2	Airfare	$887	$7,096
			Hotel	$255	$4,080
			Car	$100	$1,600
			Per Diem	$40	$640
				Total:	**$13,416**
				TOTAL GOVERNANCE ENTITY TRAVEL:	**$196,666**
STATE EMPLOYEE TRAVEL					
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder	2 Staff from CalOHII	2	Airfare	$280	$2,240
			Hotel	$150	$2,400

groups around the state (LA, SF, Central Valley, Rural North)			Car	$100	$1,600
			Per Diem	$35	$560
				Total:	**$6,800**
Privacy and Security Meetings (6) monthly meetings (travel every other month) to refine and further develop privacy and standards and architecture.	2 Staff from CalOHII	2	Airfare	$280	$3,360
			Hotel	$150	$3,600
			Car	$100	$2,400
			Per Diem	$35	$840
				Total:	**$10,200**
State HIE Leadership Training and State HIE Forum supported by ONC	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$887	$1,774
			Hotel	$255	$1,020
			Car	$100	$400
			Per Diem	$35	$140
				Total:	**$3,334**
				TOTAL STATE EMPLOYEE TRAVEL:	**$20,334**
				TOTAL FEDERAL REQUEST FOR TRAVEL:	**$217,000**

TABLE 2012 E: NON-FEDERAL MATCH – State Resources

Trip	Staff	Days	Item	Rate	Cost
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$275	$1,100
			Hotel	$150	$1,200
			Car	$100	$800
			Per Diem	$40	$320
				Total:	**$3,420**
State coordination meetings: 1 trips to each boarder state (OR, NV, AZ) to work on coordinating efforts.	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$887	$2,661
			Hotel	$255	$1,530
			Car	$100	$600
			Per Diem	$40	$240
				Total:	**$5,031**

Milage to travel to multiple meetings throughout state that do not require airfare or overnight stay	1 Staff from CHHS - Deputy Secretary HIT. If more staff are in attendence, they will car pool in a single vehicle.	18	Meetings in SF (84 miles each way	$0.40	$1,211
		12	Meetings in Northern Sierra or Near Central Valley Region (35 miles each way	$0.40	$338
				Total:	**$1,549**
				TOTAL GOVERNANCE ENTITY TRAVEL:	**$10,000**

D: 2012 Equipment:

No equipment procurement for state-level services is anticipated for 2012. Details on exact equipment purchases are still being worked out. Further details on exact regions and equipment purchases will come from the operational plan (April), technology infrastructure (April) and responses to procurement request (Aug/Sept).

E: 2012 Supplies:

TABLE 2012 F: FEDERAL REQUEST

GOVERNANCE ENTITY SUPPLIES				
Area	**Item**	**Amount**	**Rate**	**Cost**
Office Supplies	General Office Supplies per month	12	$1,000	$12,000
	Postage per month	12	$1,500	$18,000
	Copies (10,000 per month)	120000	$0	$12,000
			Total:	**$42,000**
Technology replacement or upgrades	Budget 1 replacement laptop to replace lost or stolen	1	$2,500	$2,500
	Software updates / upgrades every other year	17	$500	$8,500
	Budget 1 replacement printer to replace damaged	1	$2,500	$2,500
			Total:	**$13,500**
			TOTAL GOVERNANCE ENTITY SUPPLIES:	**$55,500**
STATE RESOURCE SUPPLIES				
Office Equipment/ Communications	General Office Supplies	1	$1,000	$1,000
	Postage	1	$1,000	$1,000
	Copies (2,500 per month)	30,000	$0.10	$3,000
	Minor Equipment	10	$200	$2,000
	Equipment Service Policies (estimate)	5	$1,000	$5,000
	Budget 1 replacement Communications equipment for traveling state employees (e.g., blackberry, aircard)	1	$2,500	$2,500
	Professional Dues, subscriptions	10	$300	$3,000
			Total:	**$17,500**
			TOTAL STATE RESOURCES SUPPLIES:	**$17,500**

TOTAL FEDERAL REQUEST:	**$73,000**

Supplies and equipment under $5,000 per item used by governance entity staff necessary to perform their work. Supplies and equipment are necessary to operate and run the governance entity. General office supplies including stationary, printer cartridges, envelopes, and other supplies are required. Postage and courier costs are needed for correspondence to constituents (hospitals, practices, clinics and other stakeholders) as frequent communication both electronic and paper are expected. One replacement laptop computer, one printer and one communication equipment (blackberry) are anticipated to account for lost, stolen or damaged computers and hardware. Professional dues (including for example HIMSS memberships) is anticipated.

There are no budgeted non-federal match for supplies.

F: 2012 Contract:

TABLE 2012 G: FEDERAL REQUEST – Contracts

Name	Contract Description	Annual Rate	Hours	Cost
TBD	Outside legal counsel to perform federal tracking of ONC and CMS, review and provide advise on contracts and policy	Competitive bid up to $150,000 to provide legal counsel, part time. (Blended rate of approximately $300/ hour)	333	$100,000
TBD	University of California intern positions to support eHealth workgroups. Manage website, listserves, online workspaces, note taking, and edit reports.	4 Resources at $25/hour.	8320	$208,000
TBD	Contract to outsource the communications, outreach and education components developed. First 3 months will include participation in the development of the communications plan while the remaining 9 months will be for plan execution	Competitive bid up to $200,000 to devise and execute Year 2 Communications Plan and perform outreach.	N/A	$200,000
TBD	State grant management contract to develop, evaluate and support the demonstration and pilot work for privacy and security projects including, consent management, enhanced security standards, and best practices for management processes. Competitive bid.	Competitive bid up to $360,000 for 2 resources to complete privacy and security pilot deliverables.	N/A	$360,000
TBD	Outsource contract to plan, facilitate and host the Annual forum	Competitive bid up to $50,000 to execute Annual Forum. Inclusive of site, equipment rental, refreshments, and facilitator time.	N/A	$50,000

TBD	Project manager reporting to Deputy Secretary of HIT responsible for coordinating all of the various workgroups, governance entity activities, and stakeholder activities. Keeps detailed minutes and issue logs, facilitates the resolution of issues across	Competitive bid up to $200,000 for 1 project management resource, over %50 effort (approximately $150/hr)	1,333	$200,000
TBD	Financial planning consultant to develop the state-wide cost of HIE, strategies for both initial financing and ongoing revenue generations, input into sustainability models	Competitive bid up to $200,000 for financial planning resource, part time effort (approximately $200/hr)	375	$75,000
TBD	GE annual audit activities	o $75K per year based on estimate received by one of the NY RHIOs	N/A	$75,000
TBD	Evaluation contract. Responsible for the facilitating the initial evaluation design with the governance entity, stakeholders and workgroups, data collection, and evaluation report to state, governance entity and ONC/CMS as required.	Competitive bid up to $175,000 to review previous reports, revise evaluation plan and submit Year 3 Evaluation Report.	N/A	$125,000
			TOTAL FEDERAL CONTRACTING REQUEST:	**$1,393,000**

TABLE 2012 H: NON-FEDERAL MATCH – State Contracts

CONTRACTUAL CONSULTING	Hours Annual	Hours Monthly	Hourly Rate	Annual Total
eHealth Support Services *Leveraged Procurement (CMAS)*	2222	185	$105	$233,334
MetaVista - Security Standards *Leveraged Procurement (CMAS)*	1215	101	$107	$130,000
UC-IA Salaries *Direct Interagency Agreement between two state agencies*	640	53	$51	$32,424
UC-IA Expenses and Indirect Costs	Expenses: $13,000 Indirect Costs: $4575			$17,575
New Project Management *Leveraged Procurement (CMAS)*	1682	140	$105	$176,635
Web Development *Leveraged Procurement (CMAS)*	856	71	$90	$77,040
			TOTAL NON-FEDERAL MATCH CONTRACTS:	**$667,008**

The role of the state contracts covered under the federal request are:

- eHealth Support Services: Conducts research on Privacy and Security topics, facilitates task groups, supports CalPSAB efforts and CalOHII policy.
- MetaVista - Security Standards: Facilitates Security Committee of CalPSAB and joint task groups, drafts security standards and strategies.
- UC-IA : Annual cost the state has to maintain the California Health Information Legal Index database (CHILI). The agreement is for services from UC Hastings college of Law to research all federal and state health privacy and security laws.

- Project Management: Responsible for coordinating workgroups, governance entity activities, and stakeholder activities focused on privacy and security of information exchange
- Web Development: Existing state expenditures made in support of HIE web services. This includes web management and development cost already occurred or is being used to manage the state websites for HIE.

G: 2012 Other:

TABLE 2012 I: FEDERAL REQUEST – Other

Item	Rates	Cost
Meeting facilitation expenses incurred by governance entity. 18 Meetings. Estimated based on a hybrid of multiple applicant responses to RFI to become the states governance entity for HIE	Site and Equipment Rental: $1,000 Refreshments: $600 Signage: $350 Name Badges: $50 Total: $2,000 per meeting	$36,000
Survey and Virtual Meeting Equipment	"GotoMeeting": $1,000 SurveyMonkey: $200 Shared Wiki Tool: $800	$2,000
Governance Entity insurance (estimated decrease based on fewer FTEs in 2012)	D&O insurance: $3,000 Liability insurance: $15,000	$18,000
Materials development and reproduction	Graphics Design: $3,000 1,000 Color Copies: $1,000 60,000 B&W Copies: $6,000	$10,000
Governance entity rent and utilities (reduced in proportion to number of FTEs)	Lease est. 200 sq.ft. per person at rate of $33/sq. ft.: $73,700 Utilities/Maintenance/Janitorial: $39,412	$113,112
Training for governance entity staff	Meeting Site and Equipment: $1,000 Speakers Honoraria: $1,000 Refreshments: $600 Materials: $400	$3,000
State facility rent and utilities for 10.75 FTEs	Lease est. 200 sq.ft. per employee.: $53,750 Utilities/Maintenance/Janitorial at $1,667 per month: $19,545	$ 73,295
Total Federal Request - Other:		**$255,407**

The items included in the other category support the needs of the governance entity and its employees engaged in the HIE efforts in addition to state resources involved in HIE efforts that are not covered under non-federal match. We assume the governance entity hosts 30 meeting annually:

- 1 Annual Form;
- 4 Quarterly meetings;
- 12 Technology Advisory Group meetings;
- 12 Privacy and Security Meetings; and
- 2 State coordination meetings held in CA (other meetings will be hosted by neighboring states and are covered under travel).

Facilitation for the Annual Forum is outsourced and the costs are detailed under the Contract section. Half of the Technology Advisory Group meetings and half of the Privacy and Security meetings will be conducted via remote teleconference. We assume the remaining 18 meetings will have hosting fees identified in this section. This section also includes our assumptions for governance entity insurance, both D&O and Liability. We also assume that the governance entity will be leasing office space in the San Francisco Bay area as the

center for their activities. Additional state staffing will need office space for their operations. We assume that this office space will be located in Sacramento to be in close proximity to CHHS offices. Rates for both San Francisco office space is based on analysis by Grubb and Ellis. This section also includes ongoing training activities to keep governance entity staff current and train them on the use of specific software, equipment, tolls and methodologies that will be employed by the governance entity in providing services related to HIE. The state has used many tools associated with collaborating with stakeholders across the state in the development of its strategic plan. These tools include Survey Monkey to survey stakeholders, GoTo meeting to run webinars and Wiki tools for the collaborative creation of documents. These tools continue to be employed in the development of this budget and the operational plan. We assume that the governance entity and state will continue to use these tools throughout the duration of this project. We assume their will be need to develop professional material development and reproduction that is outside of the capacity of the state or the governance entity. These will include brochures, signage and large reproduction runs.

TABLE 2012 J: NON-FEDERAL MATCH – Other

Item	Cost
General expense budget = $110k/17 staff $6471 per person per year x 5.75 PYs: $37,208	$37,208
Communication expense of $100 per month per person for 5.75 FTE over 12 months	$6,900
Total Non-Federal Match - Other:	**$44,108**

The items included in the other category support the needs of the state resources involved in HIE efforts that are budgeted to be covered by the state in support of this effort. General expense covers items such as supplies, photocopy, administrative support, technical support and , janitorial services associated with the 8 state resources that dedicate all or part of their time (5.75FTE) to this project. It is calculated by taking the current budget for the department of $110,000 per year for the existing 17 FTE of staff and dividing it by the 5.75FTE associated with this project. There is an additional charge for communication of $100 per month per FTE.

Object Class Category	Federal Funds	Non-Federal Cash	Non-Federal In-Kind	Total
Personnel	$2,471,956		$656,968	$3,128,924
Fringe Benefits	$780,678		$197,090	$977,768
Travel	$217,000		$10,000	$227,000
Equipment				$0
Supplies	$73,000			$73,000
Contractual	$1,393,000		$667,008	$2,060,008
Other	$255,407		$44,108	$299,515
Indirect Charges				$0
TOTAL	$5,191,041	$0	$1,575,174	$6,766,215

Budget Narrative/Justification —2013

A. 2013 Personnel:

Employees of the applying agency and the governance entity to be selected.

TABLE 2013 A: FEDERAL REQUEST – Governance Entity

GOVERNANCE ENTITY PERSONNEL					
Position/ Names TBD	**Time**	**Annual**	**Monthly**	**Rate**	**Total**
CEO	50%	1040	87	$132.21	$137,500
CTO	50%	1040	87	$120.19	$125,000
CFO	50%	1040	87	$120.19	$125,000
Senior Accountant	75%	1560	130	$72.12	$112,500
Chief Medical Officer (CMO)	25%	520	43	$120.19	$62,500
Collaboration Manager	50%	1040	87	$110.58	$115,000
Evaluator Oversight	50%	1040	87	$67.31	$70,000
Technical Director	50%	1040	87	$91.35	$95,000
P&S Director	75%	1560	130	$84.13	$131,250
Project Manager	75%	1560	130	$84.13	$131,250
Applications Analyst	70%	1456	121	$60.10	$87,500
Applications Analyst	0%	0	0	$60.10	$0
Analyst	70%	1456	121	$60.10	$87,500
Analyst	0%	0	0	$60.10	$0
Principal Investigator	70%	1456	121	$72.12	$105,000
Administrative Assistants	75%	1560	130	$33.65	$52,500
Administrative Assistants	0%	0	0	$33.65	$0
				GOVERNANCE ENTITY TOTAL:	**$1,437,500**
STATE PERSONNEL					
Position/Names	**Time**	**Annual**	**Monthly**	**Rate**	**Total**
SSM II - Security Currently VACANT	95	1985	165	$37.17	$73,776
SSM II - HIE Currently VACANT	95	1985	165	$37.17	$73,776
SSMI - Eva Coblentz	95	1985	165	$33.86	$67,200
AGPA - Currently VACANT	95	1985	165	$29.33	$58,212
AGPA - Currently VACANT	95	1985	165	$29.33	$58,212
Staff Counsel - Currently VACANT	100	2413	201	$42.13	$101,640
Staff Counsel - Currently VACANT	100	2413	201	$42.13	$101,640
				STATE TOTAL:	**$534,456**
				TOTAL FEDERAL REQUEST:	**$1,971,956**

The governance entity staff are responsible for the daily operations of the governance entity. The HIE Governance Entity will 1) have a diverse board that accommodates broad stakeholder representation and State leadership, 2) engender trust and collaboration between and among all stakeholders, 3) convene

stakeholders to generate statewide policy guidance but not operate HIE systems except as requested by and driven from the stakeholders, and 4) employ robust administrative and financial processes to support sustainability, transparency and accountability.

- CEO: Will have overall responsibility for the governance entity.
- CTO: The CTO is responsible for leading the selection of standards and infrastructure used in CA. They facilitate and coordinate the monthly technology workgroup meetings, bring technical architecture expertise to the monthly privacy and security meetings with CalPSAB, and represent CA's technical approach in meetings with Border States as well as other awardees at the two annual meetings. They will also develop and manage the 3 procurements in FY 1 and FY 2 for share services, expansion of existing regional information exchange efforts and the connection of existing HIO's.
- CFO: This will be a responsible for finance, accounting, contracting, human resources and office management. They are also specifically responsible for internal audit, compliance with applicable laws and regulations and for developing necessary policies and procedures or for assuring that these are developed and maintained current.
- Senior Accountant: The Accounting Clerk will assist the CFO with accounting and financial functions. We believe that the combination of a CFO and an Accounting Clerk are adequate for a program of this size.
- Chief Medical Officer (CMO): The CMO will be a licensed physician with experience in the adoption and use of clinical information systems (CIS). They will be the governance entity's physician advocate and represent physician workflow issues and use cases in the technology workgroup as well as the privacy and security meetings.
- Collaboration Manager: Will be responsible for the marketing, outreach and coordination efforts of the governance entity. They will be focused on driving participation and collaboration from various stakeholders including providers, state agencies, public health, privacy and security efforts, and Border States.
- Evaluator Oversight: Will be responsible for setting the initial evaluation metrics, defining data collection approaches and overseeing the data collection and analysis of the metrics. They will procure, manage and work directly with an evaluation firm commissioned by California Health & Human Services Agency as required under the FOA in these efforts.
- Technical Director: Will work directly with and for the CTO. Specific emphasis on the first two years will be on setting up the technical workgroups and developing, managing and evaluating the procurements and manage contracts with vendors to ensure compliance with contract terms and conditions.
- P&S Director: Will be the governance entities direct liaison with CalPSAB and the state of CA's privacy and security efforts. They are responsible for running the privacy and security workgroup and collaboratively drafting the privacy and security requirements, implementation approaches, architecture and statewide policy guidance.
- Project Manager: The PM will work directly with the CEO, CTO, CMO, Collaboration Manager, Evaluator Oversight Manager, Technical Director and the P&S Director to maintaining detailed project plans, action item lists, issue logs for all project components.
- Applications Analyst (1) and Analyst (1): Will assist the Technical Director and the P&S director in their work efforts. The applications analyst position requires specific knowledge of applications: used in clinical setting, support HIE, and supporting privacy and security. The Analyst position require knowledge of various provider settings and workflows and/or privacy and security. The analysts will provide technical assistance and work directly with regional extension center programs and other initiatives to assist provider adoption and meaningful use of electronic health records across California

- Principal Investigator: Reports directly to the CEO. They are the primary individual in charge of the cooperative agreement and are responsible for all actions required to manage and complete the aspects of the cooperative agreement. They will also support the Evaluation Oversight manager.
- Administrative Assistants (1): Handles the administrative activities, scheduling and travel arrangements for the governance entity staff.

State Personnel:

- SSM II - Security Currently VACANT: Facilitate Security Committee of CalPSAB and manages committee efforts, security standards and strategies.
- SSM II - HIE Currently VACANT: Facilitate HIE Committee of CalPSAB and manages committee efforts, task groups, and implementation & pilot strategies.
- SSMI - Eva Coblentz Facilitates Education Committee and task groups, develops education materials & maintains website.
- AGPA - Currently VACANT: Support to CalOHII, CalPSAB and HIE efforts
- AGPA - Currently VACANT: Support to CalOHII, CalPSAB and HIE efforts
- Staff Counsel - Currently VACANT: Support Legal Committee of CalPSAB, research current state and federal law, identify misalignment, strategize fixes to state law.
- Staff Counsel - Currently VACANT: Support Legal Committee of CalPSAB, research current state and federal law, identify misalignment, strategize fixes to state law.
  Note: STAFF COUNSEL POSITIONS CONTAIN OVERHEAD FOR LAW STUDENT

TABLE 2013 B: NON-FEDERAL MATCH – State Resources

Individual's Name/Title	Time	Annual	Monthly	Rate	Total
Jonah Frohlich, Deputy Secretary, HIT	100	2080	173	$69.23	$144,120
BTH	40	832	69	$71.95	$59,880
CEA I - Bobbie Holm	90	1647	137	$56.01	$92,246
CEA II - Alex Kam	90	1676	140	$58.35	$97,779
Program Mgr – K. D.Greenbaum	90	1800	150	$46.18	$83,120
SSM II - Azadeh Mohandessi-Fares	25	532	44	$37.17	$19,793
Staff Counsel - Suzanne Giorgi	90	1800	150	$61.97	$111,550
DPM III Christine Schmoeckel	50	900	75	$53.87	$48,480
				TOTAL PERSONNEL IN KIND	**$656,968**

The role of the state resources covered under the non-federal match are:

- Jonah Frohlich, Deputy Secretary, HIT
- BTH – California Business, Transportation and Housing Agency : Facilitates State contracting.
- CEA I - Bobbie Holm: Facilitates the CalPSAB structure, the Advisory Board, oversight of all PSAB committees, coordination with federal efforts.
- CEA II - Alex Kam: Acting Director of CalOHII, coordinates CalOHII and CA HIE Advisory Board efforts, strategies and budget oversight.
- Program Mgr – K. D.Greenbaum: Facilitates the Privacy and HIE Committees and task groups, committee interaction and support the CalPSAB efforts.
- SSM II - Azadeh Mohandessi-Fares: Will take over facilitation of the Privacy Committee and task groups, HIE legislation and specializes in pilots.
- Staff Counsel - Suzanne Giorgi: Facilitates the Legal Committee of CalPSAB, task groups, research, legislation, enforcement of privacy and security.

- DPM III Christine Schmoeckel: Support facilitation of the CA HIE Advisory Board effort with an IT focus.

B. 2013 Fringe Benefits:

Employees of the applying agency and the governance entity to be selected.

Fringe benefits for Governance Entity employees covered under federal match are calculated using a flat 30%. With a governance entity salaries equaling $1,500,000 at 30% equals $450,000.

Fringe benefits for state employees covered under federal match are defined in the following table:

TABLE 2013 C: FEDERAL REQUEST – State Resources

Component	Amount
Health Insurance	$40,259
Industrial Disability Leave	$880
OASDI	$29,008
Other	$30,457
Retirement	$74,844
Unemployment Insurance	$187
Workers Compensation	$5,043
Total:	**$180,678**

Fringe benefits for state employees covered under non-federal match are calculated using a flat rate of 30%. With salaries of $656,968 at 30% equals $197,080.

C: 2013 Travel:

TABLE 2013 D: FEDERAL REQUEST – Governance Entity

Trip	Staff	Days	Item	Rate	Cost
GOVERNANCE ENTITY TRAVEL					
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	6 GE staff (CEO, CMO, CTO, P&S, PM & Collab)	2	Airfare	$350	$8,400
			Hotel	$200	$9,600
			Car	$100	$4,800
			Per Diem	$45	$2,160
				Total:	**$24,960**
Technology Advisory Group Meetings (6) monthly meetings (travel every other month) to refine and further develop technology standards and architecture.	6 GE staff (CTO, Tech Dir, P&S Dir, PM, App. Analysts(2))	2	Airfare	$350	$12,600
			Hotel	$200	$14,400
			Car	$100	$7,200

			Per Diem	$45	$3,240
				Total:	**$37,440**
Privacy and Security Meetings (6) monthly meetings (travel every other month) to refine and further develop privacy and standards and architecture.	4 GE staff (CTO, P&S, CMO, Analyst)	2	Airfare	$350	$8,400
			Hotel	$200	$9,600
			Car	$100	$4,800
			Per Diem	$45	$2,160
				Total:	**$24,960**
State coordination meetings: 2 trips to each boarder state (OR, NV, AZ) to work on coordinating efforts.	4 GE staff (CMO, CTO, P&S, & Collab)	3	Airfare	$631	$7,570
			Hotel	$225	$8,100
			Car	$100	$3,600
			Per Diem	$45	$1,620
				Total:	**$20,890**
State HIE Leadership Training and State HIE Forum supported by ONC	4 GE Staff (CEO, CMO, CTO, & P&S)	2	Airfare	$887	$7,096
			Hotel	$255	$4,080
			Car	$100	$1,600
			Per Diem	$40	$640
				Total:	**$13,416**
				TOTAL GOVERNANCE ENTITY TRAVEL:	**$121,666**
STATE EMPLOYEE TRAVEL					
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	2 Staff from CalOHII	2	Airfare	$280	$2,240
			Hotel	$150	$2,400
			Car	$100	$1,600
			Per Diem	$35	$560
				Total:	**$6,800**
Privacy and Security Meetings (6) monthly meetings (travel every other month) to refine and further develop privacy and standards and architecture.	2 Staff from CalOHII	2	Airfare	$280	$3,360
			Hotel	$150	$3,600
			Car	$100	$2,400
			Per Diem	$35	$840

				Total:	**$10,200**
State HIE Leadership Training and State HIE Forum supported by ONC	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$887	$1,774
			Hotel	$255	$1,020
			Car	$100	$400
			Per Diem	$35	$140
				Total:	**$3,334**
				TOTAL STATE EMPLOYEE TRAVEL:	**$20,334**
				TOTAL FEDERAL REQUEST FOR TRAVEL:	**$142,000**

TABLE 2013 E: NON-FEDERAL MATCH – State Resources

Trip	Staff	Days	Item	Rate	Cost
Quarterly Stakeholder Meetings (4) to present updated information to stakeholder groups around the state (LA, SF, Central Valley, Rural North)	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$275	$1,100
			Hotel	$150	$1,200
			Car	$100	$800
			Per Diem	$40	$320
				Total:	**$3,420**
State coordination meetings: 1 trips to each boarder state (OR, NV, AZ) to work on coordinating efforts.	1 Staff from CHHS - Deputy Secretary HIT	2	Airfare	$887	$2,661
			Hotel	$255	$1,530
			Car	$100	$600
			Per Diem	$40	$240
				Total:	**$5,031**
Milage to travel to multiple meetings throughout state that do not require airfare or overnight stay	1 Staff from CHHS - Deputy Secretary HIT. If more staff are in attendence, they will car pool in a single vehicle.	18	Meetings in SF (84 miles each way	$0.40	$1,211
		12	Meetings in Northern Sierra or Near Central Valley Region (35 miles each way	$0.40	$338
				Total:	**$1,549**
				TOTAL GOVERNANCE ENTITY TRAVEL:	**$10,000**

D: 2013 Equipment:

No equipment procurement for state-level services is anticipated for 2013. Details on exact equipment purchases are still being worked out. Further details on exact regions and equipment purchases will come from the operational plan (April), technology infrastructure (April) and responses to procurement request (Aug/Sept).

E: 2013 Supplies:

TABLE 2013 F: FEDERAL REQUEST – Governance Entity Supplies

Area	Item	Amount	Rate	Cost
Office Supplies	General Office Supplies per month	12	$1,000	$12,000
	Postage per month	12	$1,500	$18,000
	Copies (10,000 per month)	120000	$0	$12,000
			Total:	**$42,000**
Technology replacement or upgrades	Budget 1 replacement laptop to replace lost or stolen	1	$2,500	$2,500
	Budget 1 replacement printer to replace damaged	1	$2,500	$2,500
			Total:	**$5,000**
			TOTAL GOVERNANCE ENTITY SUPPLIES:	**$47,000**
STATE RESOURCE SUPPLIES				
Office Equipment/ Communications	General Office Supplies	1	$1,000	$1,000
	Postage	1	$1,000	$1,000
	Copies (2,500 per month)	30,000	$0.10	$3,000
	Minor Equipment	10	$200	$2,000
	Equipment Service Policies (estimate)	5	$1,000	$5,000
	Communications equipment for traveling state employees (e.g., blackberry, aircard)	1	$2,500	$2,500
	Professional Dues, subscriptions	10	$300	$3,000
			Total:	**$17,500**
			TOTAL STATE RESOURCES SUPPLIES:	**$17,500**
			TOTAL FEDERAL REQUEST:	**$64,500**

Supplies and equipment under $5,000 per item used by governance entity staff necessary to perform their work. Supplies and equipment are necessary to operate and run the governance entity. General office supplies including stationary, printer cartridges, envelopes, and other supplies are required. Postage and courier costs are needed for correspondence to constituents (hospitals, practices, clinics and other stakeholders) as frequent communication both electronic and paper are expected. One replacement laptop computer, one printer and one communication equipment (blackberry) are anticipated to account for lost, stolen or damaged computers and hardware. Professional dues (including for example HIMSS memberships) is anticipated.

There is no budgeted non-federal match for supplies.

F: 2013 Contract:

TABLE 2013 G: FEDERAL REQUEST – Contracts

Name	Contract Description	Annual Rate	Hours	Cost

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TBD	University of California intern positions to support eHealth workgroups. Manage website, listserves, online workspaces, notetaking, and edit reports.	4 Resources at $25/hour.	8320	$208,000
TBD	Contract to outsource the communications, outreach and education components developed. First 3 months will include participation in the development of the communications plan while the remaining 9 months will be for plan execution	Competitive bid up to $200,000 to provide Year 4 communications plan and execute it.	N/A	$200,000
TBD	State grant management contract to develop, evaluate and support the demonstration and pilot work for privacy and security projects including, consent management, enhanced security standards, and best practices for management processes. Competitive bid.	Competitive bid up to $360,000 for 2 resources to complete privacy and security pilot deliverables.	N/A	$360,000
TBD	Outsource contract to plan, facilitate and host the Annual forum	Competitive bid up to $50,000 to execute Annual Forum. Inclusive of site, equipment rental, refreshments, and facilitator time.	N/A	$50,000
TBD	Project manager reporting to Deputy Secretary of HIT responsible for coordinating all of the various workgroups, governance entity activities, and stakeholder activities. Keeps detailed minutes and issue logs, facilitates the resolution of issues across	Competitive bid up to $200,000 for 1 project management resource more than 50% effort (approximately $150/hr)	1,333	$200,000
TBD	Financial planning consultant to develop the state-wide cost of HIE, strategies for both initial financing and ongoing revenue generations, input into sustainability models	Competitive bid up to $50,000 for financial planning resource, part time (approximately $200/hr)	250	$50,000
TBD	GE annual audit activities	○ $75K per year based on estimate received by one of the NY RHIOs	N/A	$75,000
TBD	Evaluation contract. Responsible for the facilitating the initial evaluation design with the governance entity, stakeholders and workgroups, data	Competitive bid up to $126,000 to review previous report, revise	N/A	$126,000

	collection, and evaluation report to state, governance entity and ONC/CMS as required.	evaluation plan and complete Year 4 evaluation report.		
TOTAL FEDERAL CONTRACTING REQUEST:				**$1,369,000**

TABLE 2013 H: NON-FEDERAL MATCH – State Contracts

CONTRACTUAL CONSULTING	Hours Annual	Hours Monthly	Hourly Rate	Annual Total
eHealth Support Services *Leveraged Procurement (CMAS)*	2222	185	$105	$233,334
MetaVista - Security Standards *Leveraged Procurement (CMAS)*	1215	101	$107	$130,000
UC-IA Salaries *Direct Interagency Agreement between two state agencies*	640	53	$51	$32,424
UC-IA Expenses and Indirect Costs	Expenses: $13,000 Indirect Costs: $4575			$17,575
New Project Management *Leveraged Procurement (CMAS)*	1682	140	$105	$176,635
TOTAL NON-FEDERAL MATCH CONTRACTS:				**$667,008**

The role of the state contracts covered under the federal request are:

- eHealth Support Services: Conducts research on Privacy and Security topics, facilitates task groups, supports CalPSAB efforts and CalOHII policy.
- MetaVista - Security Standards: Facilitates Security Committee of CalPSAB and joint task groups, drafts security standards and strategies.
- UC-IA : Annual cost the state has to maintain the California Health Information Legal Index database (CHILI). The agreement is for services from UC Hastings college of Law to research all federal and state health privacy and security laws.
- Project Management: Responsible for coordinating workgroups, governance entity activities, and stakeholder activities focused on privacy and security of information exchange
- Web Development: Existing state expenditures made in support of HIE web services. This includes web management and development cost already occurred or is being used to manage the state websites for HIE.

G: 2013 Other:

TABLE 2013 I: FEDERAL REQUEST – Other

Item	Rates	Cost
Meeting facilitation expenses incurred by governance entity. 18 Meetings per year. Estimated based on a hybrid of multiple applicant responses to RFI to become the states governance entity for HIE	Site and Equipment Rental: $1,000 Refreshments: $600 Signage/Materials: $350 Nametags/Notepads: $50 Total: $2,000 per meeting	$36,000
Survey and Virtual Meeting Equipment	"GotoMeeting": $1,000 SurveyMonkey: $200 Shared Wiki Tool: $800	$2,000

Governance Entity insurance	D&O insurance: $2,000 Liability insurance: $10,000	$12,000
Materials development and reproduction	Graphics Design: $2,000 1,000 Color Copies: $1,000 50,000 B&W Copies: $5,000	$8,000
Governance entity rent and utilities (reduced in proportion to number of FTEs)	Lease est. 200 sq.ft. per person at rate of $33/sq. ft.: $55,110 Utilities/Maintenance/Janitorial: $29,471	$84,581
Training for governance entity staff	Meeting Site and Equipment: $1,000 Speakers Honoraria: $1,000 Refreshments: $600 Materials: $400	$3,000
State facility rent and utilities for 10.75 FTEs	Lease est. 200 sq.ft. per employee.: $53,750 Utilities/Maintenance/Janitorial at $1,667 per month: $19,545	$ 73,295
Total Federal Request - Other:		**$218,876**

The items included in the other category support the needs of the governance entity and its employees engaged in the HIE efforts in addition to state resources involved in HIE efforts that are not covered under non-federal match. We assume the governance entity hosts 30 meeting annually:

- 1 Annual Form;
- 4 Quarterly meetings;
- 12 Technology Advisory Group meetings;
- 12 Privacy and Security Meetings; and
- 2 State coordination meetings held in CA (other meetings will be hosted by neighboring states and are covered under travel).

Facilitation for the Annual Forum is outsourced and the costs are detailed under the Contract section. Half of the Technology Advisory Group meetings and half of the Privacy and Security meetings will be conducted via remote teleconference. We assume the remaining 18 meetings will have hosting fees identified in this section. This section also includes our assumptions for governance entity insurance, both D&O and Liability. We also assume that the governance entity will be leasing office space in the San Francisco Bay area as the center for their activities. Additional state staffing will need office space for their operations. We assume that this office space will be located in Sacramento to be in close proximity to CHHS offices. Rates for both San Francisco office space is based on analysis by Grubb and Ellis. This section also includes ongoing training activities to keep governance entity staff current and train them on the use of specific software, equipment, tolls and methodologies that will be employed by the governance entity in providing services related to HIE. The state has used many tools associated with collaborating with stakeholders across the state in the development of its strategic plan. These tools include Survey Monkey to survey stakeholders, GoTo meeting to run webinars and Wiki tools for the collaborative creation of documents. These tools continue to be employed in the development of this budget and the operational plan. We assume that the governance entity and state will continue to use these tools throughout the duration of this project. We assume their will be need to develop professional material development and reproduction that is outside of the capacity of the state or the governance entity. These will include brochures, signage and large reproduction runs.

TABLE 2013 K: NON-FEDERAL MATCH – Other

Item	Cost
General expense budget = $110k/17 staff $6471 per person per year x 5.75 PYs: $37,208	$37,208

Communication expense of $100 per month per person for 5.75 FTE over 12 months	$6,900
Total Non-Federal Match - Other:	**$44,108**

The items included in the other category support the needs of the state resources involved in HIE efforts that are budgeted to be covered by the state in support of this effort. General expense covers items such as supplies, photocopy, administrative support, technical support and , janitorial services associated with the 8 state resources that dedicate all or part of their time (5.75FTE) to this project. It is calculated by taking the current budget for the department of $110,000 per year for the existing 17 FTE of staff and dividing it by the 5.75FTE associated with this project. There is an additional charge for communication of $100 per month per FTE.

Object Class Category	Federal Funds	Non-Federal Cash	Non-Federal In-Kind	Total
Personnel	$1,971,956		$656,968	$2,628,924
Fringe Benefits	$630,678		$197,090	$827,768
Travel	$142,000		$10,000	$152,000
Equipment				$0
Supplies	$64,500			$64,500
Contractual	$1,369,000		$667,008	$2,036,008
Other	$218,876		$44,108	$262,984
Indirect Charges				$0
TOTAL	$4,397,010	$0	$1,575,174	$5,972,184

Appendix 21: Budget by Year: Years One, Two, Three, and Four

CA Year 1 - 2010

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. California HIE Coope	93.719	$	$	$ 17,733,306.00	$ 1,567,311.00	$ 19,300,617.00
2.						0.00
3.						0.00
4.						0.00
5. Totals		$ 0.00	$ 0.00	$ 17,733,306.00	$ 1,567,311.00	$ 19,300,617.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)		Total (5)
a. Personnel	$	$	$ 3,409,456.00	$ 656,968.00	$ 4,066,424.00
b. Fringe Benefits			1,080,678.00	197,090.00	1,277,768.00
c. Travel			217,000.00	15,000.00	232,000.00
d. Equipment			200,000.00		200,000.00
e. Supplies			276,000.00		276,000.00
f. Contractual			12,213,000.00	654,145.00	12,867,145.00
g. Construction			0.00	0.00	0.00
h. Other			337,172.00	44,108.00	381,280.00
i. Total Direct Charges *(sum of 6a-6h)*	0.00	0.00	17,733,306.00	1,567,311.00	19,300,617.00
j. Indirect Charges					0.00
k. TOTALS *(sum of 6i and 6j)*	$ 0.00	$ 0.00	$ 17,733,306.00	$ 1,567,311.00	$ 19,300,617.00
7. Program Income	$	$	$	$	$ 0.00

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SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8. State HIE Cooperative Agreement Program 2010	$	$ 1,567,311.00	$	$ 1,567,311.00
9.				0.00
10.				0.00
11.				0.00
12. TOTAL *(sum of lines 8-11)*	$ 0.00	$ 1,567,311.00	$ 0.00	$ 1,567,311.00

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 17,733,306.00	$ 2,089,577.00	$ 2,089,577.00	$ 11,464,575.00	$ 2,089,577.00
14. Non-Federal	1,567,311.00	391,827.75	391,827.75	391,827.75	391,827.75
15. TOTAL *(sum of lines 13 and 14)*	$ 19,300,617.00	$ 2,481,404.75	$ 2,481,404.75	$ 11,856,402.75	$ 2,481,404.75

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. State HIE Cooperative Agreement Program 2010	$ 11,431,179.00	$ 5,191,041.00	$ 4,397,010.00	$
17.				
18.				
19.				
20. TOTAL *(sum of lines 16-19)*	$ 11,431,179.00	$ 5,191,041.00	$ 4,397,010.00	$ 0.00

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges: No indirect rate used
23. Remarks: All costs directly impact the project	

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PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

General Instructions

This form is designed so that application can be made for funds from one or more grant programs. In preparing the budget, adhere to any existing Federal grantor agency guidelines which prescribe how and whether budgeted amounts should be separately shown for different functions or activities within the program. For some programs, grantor agencies may require budgets to be separately shown by function or activity. For other programs, grantor agencies may require a breakdown by function or activity. Sections A, B, C, and D should include budget estimates for the whole project except when applying for assistance which requires Federal authorization in annual or other funding period increments. In the latter case, Sections A, B, C, and D should provide the budget for the first budget period (usually a year) and Section E should present the need for Federal assistance in the subsequent budget periods. All applications should contain a breakdown by the object class categories shown in Lines a-k of Section B.

Section A. Budget Summary Lines 1-4 Columns (a) and (b)

For applications pertaining to a *single* Federal grant program (Federal Domestic Assistance Catalog number) and *not requiring* a functional or activity breakdown, enter on Line 1 under Column (a) the Catalog program title and the Catalog number in Column (b).

For applications pertaining to a *single* program *requiring* budget amounts by multiple functions or activities, enter the name of each activity or function on each line in Column (a), and enter the Catalog number in Column (b). For applications pertaining to multiple programs where none of the programs require a breakdown by function or activity, enter the Catalog program title on each line in *Column* (a) and the respective Catalog number on each line in Column (b).

For applications pertaining to *multiple* programs where one or more programs *require* a breakdown by function or activity, prepare a separate sheet for each program requiring the breakdown. Additional sheets should be used when one form does not provide adequate space for all breakdown of data required. However, when more than one sheet is used, the first page should provide the summary totals by programs.

Lines 1-4, Columns (c) through (g)

For new applications, leave Column (c) and (d) blank. For each line entry in Columns (a) and (b), enter in Columns (e), (f), and (g) the appropriate amounts of funds needed to support the project for the first funding period (usually a year).

For continuing grant program applications, submit these forms before the end of each funding period as required by the grantor agency. Enter in Columns (c) and (d) the estimated amounts of funds which will remain unobligated at the end of the grant funding period only if the Federal grantor agency instructions provide for this. Otherwise, leave these columns blank. Enter in columns (e) and (f) the amounts of funds needed for the upcoming period. The amount(s) in Column (g) should be the sum of amounts in Columns (e) and (f).

For supplemental grants and changes to existing grants, do not use Columns (c) and (d). Enter in Column (e) the amount of the increase or decrease of Federal funds and enter in Column (f) the amount of the increase or decrease of non-Federal funds. In Column (g) enter the new total budgeted amount (Federal and non-Federal) which includes the total previous authorized budgeted amounts plus or minus, as appropriate, the amounts shown in Columns (e) and (f). The amount(s) in Column (g) should not equal the sum of amounts in Columns (e) and (f).

Line 5 - Show the totals for all columns used.

Section B Budget Categories

In the column headings (1) through (4), enter the titles of the same programs, functions, and activities shown on Lines 1-4, Column (a), Section A. When additional sheets are prepared for Section A, provide similar column headings on each sheet. For each program, function or activity, fill in the total requirements for funds (both Federal and non-Federal) by object class categories.

Line 6a-i - Show the totals of Lines 6a to 6h in each column.

Line 6j - Show the amount of indirect cost.

Line 6k - Enter the total of amounts on Lines 6i and 6j. For all applications for new grants and continuation grants the total amount in column (5), Line 6k, should be the same as the total amount shown in Section A, Column (g), Line 5. For supplemental grants and changes to grants, the total amount of the increase or decrease as shown in Columns (1)-(4), Line 6k should be the same as the sum of the amounts in Section A, Columns (e) and (f) on Line 5.

Line 7 - Enter the estimated amount of income, if any, expected to be generated from this project. Do not add or subtract this amount from the total project amount, Show under the program

narrative statement the nature and source of income. The estimated amount of program income may be considered by the Federal grantor agency in determining the total amount of the grant.

Section C. Non-Federal Resources

Lines 8-11 Enter amounts of non-Federal resources that will be used on the grant. If in-kind contributions are included, provide a brief explanation on a separate sheet.

Column (a) - Enter the program titles identical to Column (a), Section A. A breakdown by function or activity is not necessary.

Column (b) - Enter the contribution to be made by the applicant.

Column (c) - Enter the amount of the State's cash and in-kind contribution if the applicant is not a State or State agency. Applicants which are a State or State agencies should leave this column blank.

Column (d) - Enter the amount of cash and in-kind contributions to be made from all other sources.

Column (e) - Enter totals of Columns (b), (c), and (d).

Line 12 - Enter the total for each of Columns (b)-(e). The amount in Column (e) should be equal to the amount on Line 5, Column (f), Section A.

Section D. Forecasted Cash Needs

Line 13 - Enter the amount of cash needed by quarter from the grantor agency during the first year.

Line 14 - Enter the amount of cash from all other sources needed by quarter during the first year.

Line 15 - Enter the totals of amounts on Lines 13 and 14.

Section E. Budget Estimates of Federal Funds Needed for Balance of the Project

Lines 16-19 - Enter in Column (a) the same grant program titles shown in Column (a), Section A. A breakdown by function or activity is not necessary. For new applications and continuation grant applications, enter in the proper columns amounts of Federal funds which will be needed to complete the program or project over the succeeding funding periods (usually in years). This section need not be completed for revisions (amendments, changes, or supplements) to funds for the current year of existing grants.

If more than four lines are needed to list the program titles, submit additional schedules as necessary.

Line 20 - Enter the total for each of the Columns (b)-(e). When additional schedules are prepared for this Section, annotate accordingly and show the overall totals on this line.

Section F. Other Budget Information

Line 21 - Use this space to explain amounts for individual direct object class cost categories that may appear to be out of the ordinary or to explain the details as required by the Federal grantor agency.

Line 22 - Enter the type of indirect rate (provisional, predetermined, final or fixed) that will be in effect during the funding period, the estimated amount of the base to which the rate is applied, and the total indirect expense.

Line 23 - Provide any other explanations or comments deemed necessary.

CA Year 2 - 2011

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. California HIE Coope	93.719	$	$	$ 11,431,179.00	$ 1,577,960.00	$ 13,009,139.00
2.						0.00
3.						0.00
4.						0.00
5. Totals		$ 0.00	$ 0.00	$ 11,431,179.00	$ 1,577,960.00	$ 13,009,139.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)		Total (5)
a. Personnel	$	$	$ 3,409,456.00	$ 656,968.00	$ 4,066,424.00
b. Fringe Benefits			1,080,678.00	197,090.00	1,277,768.00
c. Travel			217,000.00	15,000.00	232,000.00
d. Equipment			100,000.00		100,000.00
e. Supplies			64,550.00		64,550.00
f. Contractual			6,234,000.00	664,794.00	6,898,794.00
g. Construction			0.00	0.00	0.00
h. Other			325,495.00	44,108.00	369,603.00
i. Total Direct Charges *(sum of 6a-6h)*	0.00	0.00	11,431,179.00	1,577,960.00	13,009,139.00
j. Indirect Charges					0.00
k. TOTALS *(sum of 6i and 6j)*	$ 0.00	$ 0.00	$ 11,431,179.00	$ 1,577,960.00	$ 13,009,139.00
7. Program Income	$	$	$	$	$ 0.00

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SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8. State HIE Cooperative Agreement Program 2011	$	$ 1,577,960.00	$	$ 1,577,960.00
9.				0.00
10.				0.00
11.				0.00
12. TOTAL *(sum of lines 8-11)*	$ 0.00	$ 1,577,960.00	$ 0.00	$ 1,577,960.00

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 11,431,179.00	$ 1,732,795.00	$ 1,732,795.00	$ 6,232,794.00	$ 1,732,795.00
14. Non-Federal	1,577,960.00	394,490.00	394,490.00	394,490.00	394,490.00
15. TOTAL *(sum of lines 13 and 14)*	$ 13,009,139.00	$ 2,127,285.00	$ 2,127,285.00	$ 6,627,284.00	$ 2,127,285.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. State HIE Cooperative Agreement Program 2011	$ 5,191,041.00	$ 4,397,010.00	$	$
17.				
18.				
19.				
20. TOTAL *(sum of lines 16-19)*	$ 5,191,041.00	$ 4,397,010.00	$ 0.00	$ 0.00

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges: No indirect rate used
23. Remarks: All costs directly impact the project	

INSTRUCTIONS FOR THE SF-424A

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Section A. Budget Summary Lines 1-4 Columns (a) and (b)

For applications pertaining to a *single* Federal grant program (Federal Domestic Assistance Catalog number) and *not requiring* a functional or activity breakdown, enter on Line 1 under Column (a) the Catalog program title and the Catalog number in Column (b).

For applications pertaining to a *single* program *requiring* budget amounts by multiple functions or activities, enter the name of each activity or function on each line in Column (a), and enter the Catalog number in Column (b). For applications pertaining to multiple programs where none of the programs require a breakdown by function or activity, enter the Catalog program title on each line in *Column* (a) and the respective Catalog number on each line in Column (b).

For applications pertaining to *multiple* programs where one or more programs *require* a breakdown by function or activity, prepare a separate sheet for each program requiring the breakdown. Additional sheets should be used when one form does not provide adequate space for all breakdown of data required. However, when more than one sheet is used, the first page should provide the summary totals by programs.

Lines 1-4, Columns (c) through (g)

For new applications, leave Column (c) and (d) blank. For each line entry in Columns (a) and (b), enter in Columns (e), (f), and (g) the appropriate amounts of funds needed to support the project for the first funding period (usually a year).

For continuing grant program applications, submit these forms before the end of each funding period as required by the grantor agency. Enter in Columns (c) and (d) the estimated amounts of funds which will remain unobligated at the end of the grant funding period only if the Federal grantor agency instructions provide for this. Otherwise, leave these columns blank. Enter in columns (e) and (f) the amounts of funds needed for the upcoming period. The amount(s) in Column (g) should be the sum of amounts in Columns (e) and (f).

For supplemental grants and changes to existing grants, do not use Columns (c) and (d). Enter in Column (e) the amount of the increase or decrease of Federal funds and enter in Column (f) the amount of the increase or decrease of non-Federal funds. In Column (g) enter the new total budgeted amount (Federal and non-Federal) which includes the total previous authorized budgeted amounts plus or minus, as appropriate, the amounts shown in Columns (e) and (f). The amount(s) in Column (g) should not equal the sum of amounts in Columns (e) and (f).

Line 5 - Show the totals for all columns used.

Section B Budget Categories

In the column headings (1) through (4), enter the titles of the same programs, functions, and activities shown on Lines 1-4, Column (a), Section A. When additional sheets are prepared for Section A, provide similar column headings on each sheet. For each program, function or activity, fill in the total requirements for funds (both Federal and non-Federal) by object class categories.

Line 6a-i - Show the totals of Lines 6a to 6h in each column.

Line 6j - Show the amount of indirect cost.

Line 6k - Enter the total of amounts on Lines 6i and 6j. For all applications for new grants and continuation grants the total amount in column (5), Line 6k, should be the same as the total amount shown in Section A, Column (g), Line 5. For supplemental grants and changes to grants, the total amount of the increase or decrease as shown in Columns (1)-(4), Line 6k should be the same as the sum of the amounts in Section A, Columns (e) and (f) on Line 5.

Line 7 - Enter the estimated amount of income, if any, expected to be generated from this project. Do not add or subtract this amount from the total project amount, Show under the program

narrative statement the nature and source of income. The estimated amount of program income may be considered by the Federal grantor agency in determining the total amount of the grant.

Section C. Non-Federal Resources

Lines 8-11 Enter amounts of non-Federal resources that will be used on the grant. If in-kind contributions are included, provide a brief explanation on a separate sheet.

Column (a) - Enter the program titles identical to Column (a), Section A. A breakdown by function or activity is not necessary.

Column (b) - Enter the contribution to be made by the applicant.

Column (c) - Enter the amount of the State's cash and in-kind contribution if the applicant is not a State or State agency. Applicants which are a State or State agencies should leave this column blank.

Column (d) - Enter the amount of cash and in-kind contributions to be made from all other sources.

Column (e) - Enter totals of Columns (b), (c), and (d).

Line 12 - Enter the total for each of Columns (b)-(e). The amount in Column (e) should be equal to the amount on Line 5, Column (f), Section A.

Section D. Forecasted Cash Needs

Line 13 - Enter the amount of cash needed by quarter from the grantor agency during the first year.

Line 14 - Enter the amount of cash from all other sources needed by quarter during the first year.

Line 15 - Enter the totals of amounts on Lines 13 and 14.

Section E. Budget Estimates of Federal Funds Needed for Balance of the Project

Lines 16-19 - Enter in Column (a) the same grant program titles shown in Column (a), Section A. A breakdown by function or activity is not necessary. For new applications and continuation grant applications, enter in the proper columns amounts of Federal funds which will be needed to complete the program or project over the succeeding funding periods (usually in years). This section need not be completed for revisions (amendments, changes, or supplements) to funds for the current year of existing grants.

If more than four lines are needed to list the program titles, submit additional schedules as necessary.

Line 20 - Enter the total for each of the Columns (b)-(e). When additional schedules are prepared for this Section, annotate accordingly and show the overall totals on this line.

Section F. Other Budget Information

Line 21 - Use this space to explain amounts for individual direct object class cost categories that may appear to be out of the ordinary or to explain the details as required by the Federal grantor agency.

Line 22 - Enter the type of indirect rate (provisional, predetermined, final or fixed) that will be in effect during the funding period, the estimated amount of the base to which the rate is applied, and the total indirect expense.

Line 23 - Provide any other explanations or comments deemed necessary.

CA Year 3 - 2012

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. California HIE Coope	93.719	$	$	$ 5,191,041.00	$ 1,575,174.00	$ 6,766,215.00
2.						0.00
3.						0.00
4.						0.00
5. Totals		$ 0.00	$ 0.00	$ 5,191,041.00	$ 1,575,174.00	$ 6,766,215.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)		Total (5)
a. Personnel	$	$	$ 2,471,956.00	$ 656,968.00	$ 3,128,924.00
b. Fringe Benefits			780,678.00	197,090.00	977,768.00
c. Travel			217,000.00	10,000.00	227,000.00
d. Equipment			0.00	0.00	0.00
e. Supplies			73,000.00	0.00	73,000.00
f. Contractual			1,393,000.00	667,008.00	2,060,008.00
g. Construction			0.00	0.00	0.00
h. Other			255,407.00	44,108.00	299,515.00
i. Total Direct Charges *(sum of 6a-6h)*	0.00	0.00	5,191,041.00	1,575,174.00	6,766,215.00
j. Indirect Charges					0.00
k. TOTALS *(sum of 6i and 6j)*	$ 0.00	$ 0.00	$ 5,191,041.00	$ 1,575,174.00	$ 6,766,215.00
7. Program Income	$	$	$	$	$ 0.00

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Previous Edition Usable

SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8. State HIE Cooperative Agreement Program 2012	$	$ 1,575,174.00	$	$ 1,575,174.00
9.				0.00
10.				0.00
11.				0.00
12. TOTAL *(sum of lines 8-11)*	$ 0.00	$ 1,575,174.00	$ 0.00	$ 1,575,174.00

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 5,191,041.00	$ 1,297,760.25	$ 1,297,760.25	$ 1,297,760.25	$ 1,297,760.25
14. Non-Federal	1,575,174.00	393,793.50	393,793.50	393,793.50	393,793.50
15. TOTAL *(sum of lines 13 and 14)*	$ 6,766,215.00	$ 1,691,553.75	$ 1,691,553.75	$ 1,691,553.75	$ 1,691,553.75

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. State HIE Cooperative Agreement Program 2012	$ 4,397,010.00	$	$	$
17.				
18.				
19.				
20. TOTAL *(sum of lines 16-19)*	$ 4,397,010.00	$ 0.00	$ 0.00	$ 0.00

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges: No indirect rate used
23. Remarks: All costs directly impact the project	

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Standard Form 424A (Rev. 7-97) Page 2

INSTRUCTIONS FOR THE SF-424A

Public reporting burden for this collection of information is estimated to average 180 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0044), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

General Instructions

This form is designed so that application can be made for funds from one or more grant programs. In preparing the budget, adhere to any existing Federal grantor agency guidelines which prescribe how and whether budgeted amounts should be separately shown for different functions or activities within the program. For some programs, grantor agencies may require budgets to be separately shown by function or activity. For other programs, grantor agencies may require a breakdown by function or activity. Sections A, B, C, and D should include budget estimates for the whole project except when applying for assistance which requires Federal authorization in annual or other funding period increments. In the latter case, Sections A, B, C, and D should provide the budget for the first budget period (usually a year) and Section E should present the need for Federal assistance in the subsequent budget periods. All applications should contain a breakdown by the object class categories shown in Lines a-k of Section B.

Section A. Budget Summary Lines 1-4 Columns (a) and (b)

For applications pertaining to a *single* Federal grant program (Federal Domestic Assistance Catalog number) and *not requiring* a functional or activity breakdown, enter on Line 1 under Column (a) the Catalog program title and the Catalog number in Column (b).

For applications pertaining to a *single* program *requiring* budget amounts by multiple functions or activities, enter the name of each activity or function on each line in Column (a), and enter the Catalog number in Column (b). For applications pertaining to multiple programs where none of the programs require a breakdown by function or activity, enter the Catalog program title on each line in *Column* (a) and the respective Catalog number on each line in Column (b).

For applications pertaining to *multiple* programs where one or more programs *require* a breakdown by function or activity, prepare a separate sheet for each program requiring the breakdown. Additional sheets should be used when one form does not provide adequate space for all breakdown of data required. However, when more than one sheet is used, the first page should provide the summary totals by programs.

Lines 1-4, Columns (c) through (g)

For new applications, leave Column (c) and (d) blank. For each line entry in Columns (a) and (b), enter in Columns (e), (f), and (g) the appropriate amounts of funds needed to support the project for the first funding period (usually a year).

For continuing grant program applications, submit these forms before the end of each funding period as required by the grantor agency. Enter in Columns (c) and (d) the estimated amounts of funds which will remain unobligated at the end of the grant funding period only if the Federal grantor agency instructions provide for this. Otherwise, leave these columns blank. Enter in columns (e) and (f) the amounts of funds needed for the upcoming period. The amount(s) in Column (g) should be the sum of amounts in Columns (e) and (f).

For supplemental grants and changes to existing grants, do not use Columns (c) and (d). Enter in Column (e) the amount of the increase or decrease of Federal funds and enter in Column (f) the amount of the increase or decrease of non-Federal funds. In Column (g) enter the new total budgeted amount (Federal and non-Federal) which includes the total previous authorized budgeted amounts plus or minus, as appropriate, the amounts shown in Columns (e) and (f). The amount(s) in Column (g) should not equal the sum of amounts in Columns (e) and (f).

Line 5 - Show the totals for all columns used.

Section B Budget Categories

In the column headings (1) through (4), enter the titles of the same programs, functions, and activities shown on Lines 1-4, Column (a), Section A. When additional sheets are prepared for Section A, provide similar column headings on each sheet. For each program, function or activity, fill in the total requirements for funds (both Federal and non-Federal) by object class categories.

Line 6a-i - Show the totals of Lines 6a to 6h in each column.

Line 6j - Show the amount of indirect cost.

Line 6k - Enter the total of amounts on Lines 6i and 6j. For all applications for new grants and continuation grants the total amount in column (5), Line 6k, should be the same as the total amount shown in Section A, Column (g), Line 5. For supplemental grants and changes to grants, the total amount of the increase or decrease as shown in Columns (1)-(4), Line 6k should be the same as the sum of the amounts in Section A, Columns (e) and (f) on Line 5.

Line 7 - Enter the estimated amount of income, if any, expected to be generated from this project. Do not add or subtract this amount from the total project amount, Show under the program

narrative statement the nature and source of income. The estimated amount of program income may be considered by the Federal grantor agency in determining the total amount of the grant.

Section C. Non-Federal Resources

Lines 8-11 Enter amounts of non-Federal resources that will be used on the grant. If in-kind contributions are included, provide a brief explanation on a separate sheet.

Column (a) - Enter the program titles identical to Column (a), Section A. A breakdown by function or activity is not necessary.

Column (b) - Enter the contribution to be made by the applicant.

Column (c) - Enter the amount of the State's cash and in-kind contribution if the applicant is not a State or State agency. Applicants which are a State or State agencies should leave this column blank.

Column (d) - Enter the amount of cash and in-kind contributions to be made from all other sources.

Column (e) - Enter totals of Columns (b), (c), and (d).

Line 12 - Enter the total for each of Columns (b)-(e). The amount in Column (e) should be equal to the amount on Line 5, Column (f), Section A.

Section D. Forecasted Cash Needs

Line 13 - Enter the amount of cash needed by quarter from the grantor agency during the first year.

Line 14 - Enter the amount of cash from all other sources needed by quarter during the first year.

Line 15 - Enter the totals of amounts on Lines 13 and 14.

Section E. Budget Estimates of Federal Funds Needed for Balance of the Project

Lines 16-19 - Enter in Column (a) the same grant program titles shown in Column (a), Section A. A breakdown by function or activity is not necessary. For new applications and continuation grant applications, enter in the proper columns amounts of Federal funds which will be needed to complete the program or project over the succeeding funding periods (usually in years). This section need not be completed for revisions (amendments, changes, or supplements) to funds for the current year of existing grants.

If more than four lines are needed to list the program titles, submit additional schedules as necessary.

Line 20 - Enter the total for each of the Columns (b)-(e). When additional schedules are prepared for this Section, annotate accordingly and show the overall totals on this line.

Section F. Other Budget Information

Line 21 - Use this space to explain amounts for individual direct object class cost categories that may appear to be out of the ordinary or to explain the details as required by the Federal grantor agency.

Line 22 - Enter the type of indirect rate (provisional, predetermined, final or fixed) that will be in effect during the funding period, the estimated amount of the base to which the rate is applied, and the total indirect expense.

Line 23 - Provide any other explanations or comments deemed necessary.

CA Year 4 - 2013

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. California HIE Coope	93.719	$	$	$ 4,397,010.00	$ 1,575,174.00	$ 5,972,184.00
2.						0.00
3.						0.00
4.						0.00
5. Totals		$ 0.00	$ 0.00	$ 4,397,010.00	$ 1,575,174.00	$ 5,972,184.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)		Total (5)
a. Personnel	$	$	$ 1,971,956.00	$ 656,968.00	$ 2,628,924.00
b. Fringe Benefits			630,678.00	197,090.00	827,768.00
c. Travel			142,000.00	10,000.00	152,000.00
d. Equipment			0.00	0.00	0.00
e. Supplies			64,500.00	0.00	64,500.00
f. Contractual			1,369,000.00	667,008.00	2,036,008.00
g. Construction			0.00	0.00	0.00
h. Other			218,876.00	44,108.00	262,984.00
i. Total Direct Charges *(sum of 6a-6h)*	0.00	0.00	4,397,010.00	1,575,174.00	5,972,184.00
j. Indirect Charges					0.00
k. TOTALS *(sum of 6i and 6j)*	$ 0.00	$ 0.00	$ 4,397,010.00	$ 1,575,174.00	$ 5,972,184.00
7. Program Income	$	$	$	$	$ 0.00

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SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8. State HIE Cooperative Agreement Program 2013	$	$ 1,575,174.00	$	$ 1,575,174.00
9.				0.00
10.				0.00
11.				0.00
12. TOTAL *(sum of lines 8-11)*	$ 0.00	$ 1,575,174.00	$ 0.00	$ 1,575,174.00

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 4,397,010.00	$ 1,099,252.00	$ 1,099,253.00	$ 1,099,252.00	$ 1,099,253.00
14. Non-Federal	1,575,174.00	393,793.50	393,793.50	393,793.50	393,793.50
15. TOTAL *(sum of lines 13 and 14)*	$ 5,972,184.00	$ 1,493,045.50	$ 1,493,046.50	$ 1,493,045.50	$ 1,493,046.50

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. State HIE Cooperative Agreement Program 2013	$	$	$	$
17.				
18.				
19.				
20. TOTAL *(sum of lines 16-19)*	$ 0.00	$ 0.00	$ 0.00	$ 0.00

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges: No indirect rate used
23. Remarks: All costs directly impact the project	

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Standard Form 424A (Rev. 7-97) Page 2

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Section A. Budget Summary Lines 1-4 Columns (a) and (b)

For applications pertaining to a *single* Federal grant program (Federal Domestic Assistance Catalog number) and *not requiring* a functional or activity breakdown, enter on Line 1 under Column (a) the Catalog program title and the Catalog number in Column (b).

For applications pertaining to a *single* program *requiring* budget amounts by multiple functions or activities, enter the name of each activity or function on each line in Column (a), and enter the Catalog number in Column (b). For applications pertaining to multiple programs where none of the programs require a breakdown by function or activity, enter the Catalog program title on each line in *Column* (a) and the respective Catalog number on each line in Column (b).

For applications pertaining to *multiple* programs where one or more programs *require* a breakdown by function or activity, prepare a separate sheet for each program requiring the breakdown. Additional sheets should be used when one form does not provide adequate space for all breakdown of data required. However, when more than one sheet is used, the first page should provide the summary totals by programs.

Lines 1-4, Columns (c) through (g)

For new applications, leave Column (c) and (d) blank. For each line entry in Columns (a) and (b), enter in Columns (e), (f), and (g) the appropriate amounts of funds needed to support the project for the first funding period (usually a year).

For continuing grant program applications, submit these forms before the end of each funding period as required by the grantor agency. Enter in Columns (c) and (d) the estimated amounts of funds which will remain unobligated at the end of the grant funding period only if the Federal grantor agency instructions provide for this. Otherwise, leave these columns blank. Enter in columns (e) and (f) the amounts of funds needed for the upcoming period. The amount(s) in Column (g) should be the sum of amounts in Columns (e) and (f).

For supplemental grants and changes to existing grants, do not use Columns (c) and (d). Enter in Column (e) the amount of the increase or decrease of Federal funds and enter in Column (f) the amount of the increase or decrease of non-Federal funds. In Column (g) enter the new total budgeted amount (Federal and non-Federal) which includes the total previous authorized budgeted amounts plus or minus, as appropriate, the amounts shown in Columns (e) and (f). The amount(s) in Column (g) should not equal the sum of amounts in Columns (e) and (f).

Line 5 - Show the totals for all columns used.

Section B Budget Categories

In the column headings (1) through (4), enter the titles of the same programs, functions, and activities shown on Lines 1-4, Column (a), Section A. When additional sheets are prepared for Section A, provide similar column headings on each sheet. For each program, function or activity, fill in the total requirements for funds (both Federal and non-Federal) by object class categories.

Line 6a-i - Show the totals of Lines 6a to 6h in each column.

Line 6j - Show the amount of indirect cost.

Line 6k - Enter the total of amounts on Lines 6i and 6j. For all applications for new grants and continuation grants the total amount in column (5), Line 6k, should be the same as the total amount shown in Section A, Column (g), Line 5. For supplemental grants and changes to grants, the total amount of the increase or decrease as shown in Columns (1)-(4), Line 6k should be the same as the sum of the amounts in Section A, Columns (e) and (f) on Line 5.

Line 7 - Enter the estimated amount of income, if any, expected to be generated from this project. Do not add or subtract this amount from the total project amount, Show under the program

narrative statement the nature and source of income. The estimated amount of program income may be considered by the Federal grantor agency in determining the total amount of the grant.

Section C. Non-Federal Resources

Lines 8-11 Enter amounts of non-Federal resources that will be used on the grant. If in-kind contributions are included, provide a brief explanation on a separate sheet.

Column (a) - Enter the program titles identical to Column (a), Section A. A breakdown by function or activity is not necessary.

Column (b) - Enter the contribution to be made by the applicant.

Column (c) - Enter the amount of the State's cash and in-kind contribution if the applicant is not a State or State agency. Applicants which are a State or State agencies should leave this column blank.

Column (d) - Enter the amount of cash and in-kind contributions to be made from all other sources.

Column (e) - Enter totals of Columns (b), (c), and (d).

Line 12 - Enter the total for each of Columns (b)-(e). The amount in Column (e) should be equal to the amount on Line 5, Column (f), Section A.

Section D. Forecasted Cash Needs

Line 13 - Enter the amount of cash needed by quarter from the grantor agency during the first year.

Line 14 - Enter the amount of cash from all other sources needed by quarter during the first year.

Line 15 - Enter the totals of amounts on Lines 13 and 14.

Section E. Budget Estimates of Federal Funds Needed for Balance of the Project

Lines 16-19 - Enter in Column (a) the same grant program titles shown in Column (a), Section A. A breakdown by function or activity is not necessary. For new applications and continuation grant applications, enter in the proper columns amounts of Federal funds which will be needed to complete the program or project over the succeeding funding periods (usually in years). This section need not be completed for revisions (amendments, changes, or supplements) to funds for the current year of existing grants.

If more than four lines are needed to list the program titles, submit additional schedules as necessary.

Line 20 - Enter the total for each of the Columns (b)-(e). When additional schedules are prepared for this Section, annotate accordingly and show the overall totals on this line.

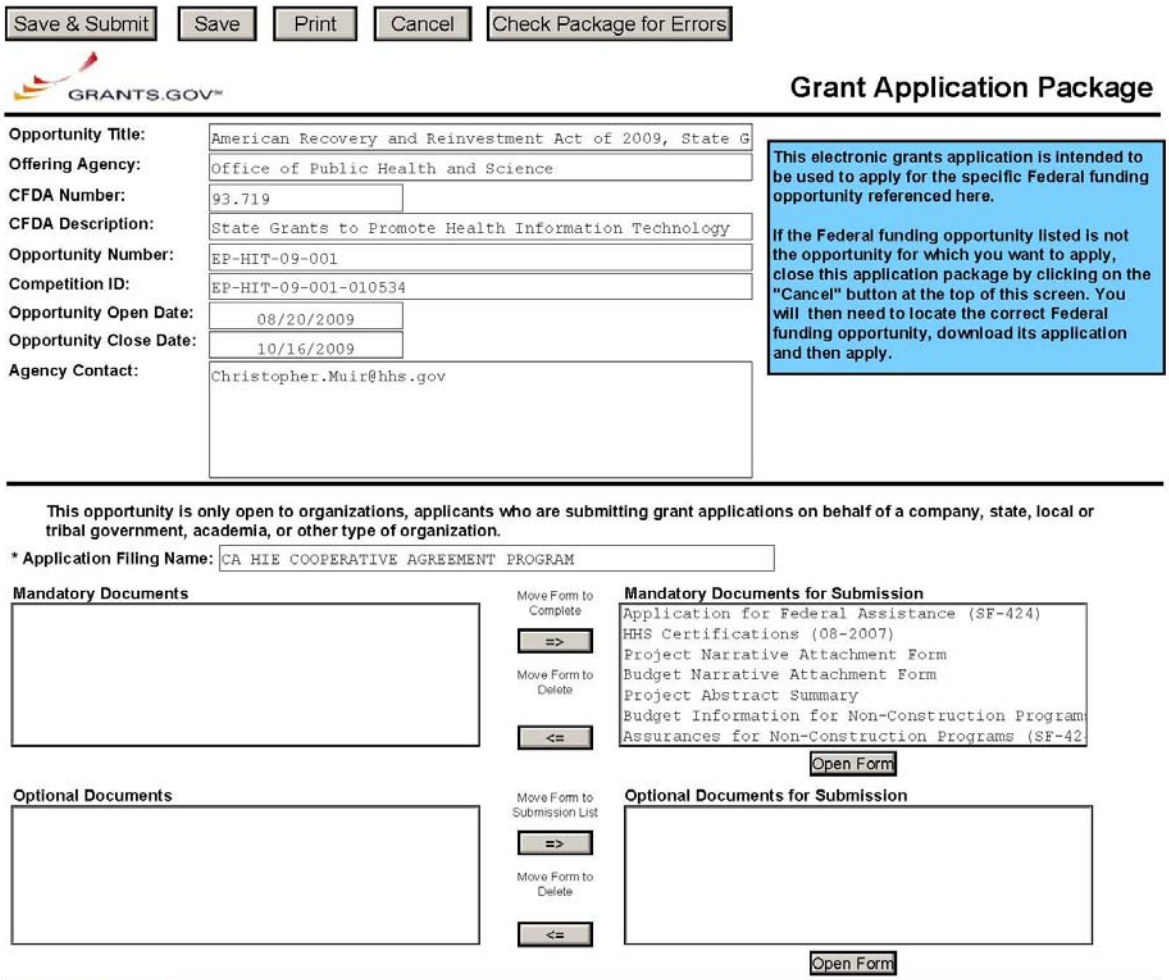
Section F. Other Budget Information

Line 21 - Use this space to explain amounts for individual direct object class cost categories that may appear to be out of the ordinary or to explain the details as required by the Federal grantor agency.

Line 22 - Enter the type of indirect rate (provisional, predetermined, final or fixed) that will be in effect during the funding period, the estimated amount of the base to which the rate is applied, and the total indirect expense.

Line 23 - Provide any other explanations or comments deemed necessary.

Appendix 22: Application



Save & Submit | Save | Print | Cancel | Check Package for Errors

GRANTS.GOV™

Grant Application Package

Opportunity Title:	American Recovery and Reinvestment Act of 2009, State G
Offering Agency:	Office of Public Health and Science
CFDA Number:	93.719
CFDA Description:	State Grants to Promote Health Information Technology
Opportunity Number:	EP-HIT-09-001
Competition ID:	EP-HIT-09-001-010534
Opportunity Open Date:	08/20/2009
Opportunity Close Date:	10/16/2009
Agency Contact:	Christopher.Muir@hhs.gov

This electronic grants application is intended to be used to apply for the specific Federal funding opportunity referenced here.

If the Federal funding opportunity listed is not the opportunity for which you want to apply, close this application package by clicking on the "Cancel" button at the top of this screen. You will then need to locate the correct Federal funding opportunity, download its application and then apply.

This opportunity is only open to organizations, applicants who are submitting grant applications on behalf of a company, state, local or tribal government, academia, or other type of organization.

*** Application Filing Name:** CA HIE COOPERATIVE AGREEMENT PROGRAM

Mandatory Documents

Move Form to Complete =>

Move Form to Delete <=

Mandatory Documents for Submission

- Application for Federal Assistance (SF-424)
- HHS Certifications (08-2007)
- Project Narrative Attachment Form
- Budget Narrative Attachment Form
- Project Abstract Summary
- Budget Information for Non-Construction Program
- Assurances for Non-Construction Programs (SF-42

Open Form

Optional Documents

Move Form to Submission List =>

Move Form to Delete <=

Optional Documents for Submission

Open Form

Instructions

1 Enter a name for the application in the Application Filing Name field.

- This application can be completed in its entirety offline; however, you will need to login to the Grants.gov website during the submission process.
- You can save your application at any time by clicking the "Save" button at the top of your screen.
- The "Save & Submit" button will not be functional until all required data fields in the application are completed and you clicked on the "Check Package for Errors" button and confirmed all data required data fields are completed.

2 Open and complete all of the documents listed in the "Mandatory Documents" box. Complete the SF-424 form first.

- It is recommended that the SF-424 form be the first form completed for the application package. Data entered on the SF-424 will populate data fields in other mandatory and optional forms and the user cannot enter data in these fields.

- The forms listed in the "Mandatory Documents" box and "Optional Documents" may be predefined forms, such as SF-424, forms where a document needs to be attached, such as the Project Narrative or a combination of both. "Mandatory Documents" are required for this application. "Optional Documents" can be used to provide additional support for this application or may be required for specific types of grant activity. Reference the application package instructions for more information regarding "Optional Documents".

- To open and complete a form, simply click on the form's name to select the item and then click on the => button. This will move the document to the appropriate "Documents for Submission" box and the form will be automatically added to your application package. To view the form, scroll down the screen or select the form name and click on the "Open Form" button to begin completing the required data fields. To remove a form/document from the "Documents for Submission" box, click the document name to select it, and then click the <= button. This will return the form/document to the "Mandatory Documents" or "Optional Documents" box.

- All documents listed in the "Mandatory Documents" box must be moved to the "Mandatory Documents for Submission" box. When you open a required form, the fields which must be completed are highlighted in yellow with a red border. Optional fields and completed fields are displayed in white. If you enter invalid or incomplete information in a field, you will receive an error message.

3 Click the "Save & Submit" button to submit your application to Grants.gov.

- Once you have properly completed all required documents and attached any required or optional documentation, save the completed application by clicking on the "Save" button.
- Click on the "Check Package for Errors" button to ensure that you have completed all required data fields. Correct any errors or if none are found, save the application package.
- The "Save & Submit" button will become active; click on the "Save & Submit" button to begin the application submission process.
- You will be taken to the applicant login page to enter your Grants.gov username and password. Follow all onscreen instructions for submission.

Close Form | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

* 1. Type of Submission:	* 2. Type of Application:	* If Revision, select appropriate letter(s):
☐ Preapplication	☒ New	
☒ Application	☐ Continuation	* Other (Specify)
☐ Changed/Corrected Application	☐ Revision	

* 3. Date Received:	4. Applicant Identifier:
10/15/2009	

5a. Federal Entity Identifier:	* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:	7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: Health and Human Services Agency, California

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
68-0281366	807486923

d. Address:

* Street1:	1600 9th Street, Suite 460
Street2:	
* City:	Sacramento
County:	Sacramento
* State:	CA: California
Province:	
* Country:	USA: UNITED STATES
* Zip / Postal Code:	95814-6439

e. Organizational Unit:

Department Name:	Division Name:
CA Health & Human Services	

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:	Mr.	* First Name:	Jonah
Middle Name:			
* Last Name:	Frohlich		
Suffix:			

Title: Deputy Secretary for HIT

Organizational Affiliation:

* Telephone Number:	916.651.8069	Fax Number:	916.440.5008

* Email: jfrohlich@chhs.ca.gov

Close Form | Previous | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

9. Type of Applicant 1: Select Applicant Type:

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Office of Public Health and Science

11. Catalog of Federal Domestic Assistance Number:

93.719

CFDA Title:

State Grants to Promote Health Information Technology

*** 12. Funding Opportunity Number:**

EP-HIT-09-001

* Title:

American Recovery and Reinvestment Act of 2009, State Grants to Promote Health Information Technology Planning and Implementation Projects

13. Competition Identification Number:

EP-HIT-09-001-010534

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

State

*** 15. Descriptive Title of Applicant's Project:**

California Health Information Exchange Cooperative Agreement Program

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Close Form | Previous | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

16. Congressional Districts Of:

* a. Applicant: CA-all
* b. Program/Project: CA-all

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 01/01/2010
* b. End Date: 12/31/2013

18. Estimated Funding ($):

* a. Federal	38,752,536.00
* b. Applicant	0.00
* c. State	6,295,619.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	45,048,155.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- [ ] a. This application was made available to the State under the Executive Order 12372 Process for review on .
- [ ] b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- [x] c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

- [ ] Yes
- [x] No

Explanation

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

- [x] ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Mr. * First Name: Jonah
Middle Name:
* Last Name: Frohlich
Suffix:

* Title: Deputy Secretary, HIT

* Telephone Number: 916.651.8069 Fax Number: 916.440.5008

* Email: jfrohlich@chhs.ca.gov

* Signature of Authorized Representative: Lorna Fong * Date Signed: 10/15/2009

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Prescribed by OMB Circular A-102

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OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

CERTIFICATIONS

OMB Approval No. 0990-0317

1. CERTIFICATION REGARDING LOBBYING

Title 31, United States Code, Section 1352, entitled "Limitation on use of appropriated funds to influence certain Federal contracting and financial transactions," generally prohibits recipients of Federal grants and cooperative agreements from using Federal (appropriated) funds for lobbying the Executive or Legislative Branches of the Federal Government in connection with a SPECIFIC grant or cooperative agreement. Section 1352 also requires that each person who requests or receives a Federal grant or cooperative agreement must disclose lobbying undertaken with non-Federal (non-appropriated) funds. These requirements apply to grants and cooperative agreements EXCEEDING $100,000 in total costs (45 CFR Part 93). By signing and submitting this application, the applicant is providing certification set out in Appendix A to 45 CFR Part 93.

2. CERTIFICATION REGARDING PROGRAM FRAUD CIVIL REMEDIES ACT (PFCRA)

The authorized official signing for the applicant organization certifies that the statements herein are true, complete, and accurate to the best of his or her knowledge, and that he or she is aware that any false, fictitious, or fraudulent statements or claims may subject him or her to criminal, civil, or administrative penalties. The official signing agrees that the applicant organization will comply with the HHS terms and conditions of award if a grant is awarded as a result of this application.

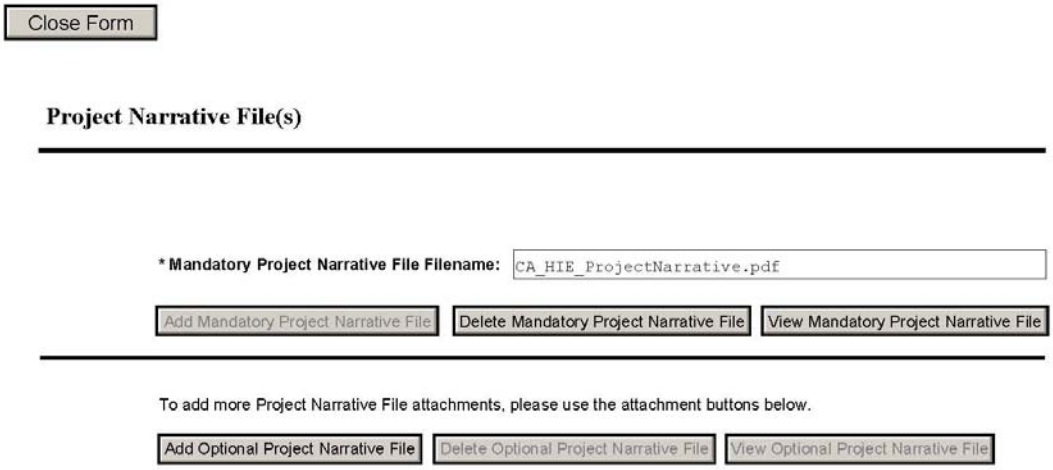
3. CERTIFICATION REGARDING ENVIRONMENTAL TOBACCO SMOKE

Public Law 103-227, also known as the Pro-Children Act of 1994 (Act), requires that smoking not be permitted in any portion of any indoor facility owned or leased or contracted for by an entity and used routinely or regularly for the provision of health, day care, early childhood development services, education or library services to children under the age of 18, if the services are funded by Federal programs either directly or through State or local governments, by Federal grant, contract, loan, or loan guarantee. The law also applies to children's services that are provided in indoor facilities that are constructed, operated, or maintained with such Federal funds. The law does not apply to children's services provided in private residence, portions of facilities used for inpatient drug or alcohol treatment, service providers whose sole source of applicable Federal funds is Medicare or Medicaid, or facilities where WIC coupons are redeemed.

Failure to comply with the provisions of the law may result in the imposition of a civil monetary penalty of up to $1,000 for each violation and/or the imposition of an administrative compliance order on the responsible entity.

The authorized official signing for the applicant organization certifies that the applicant organization will comply with the requirements of the Act and will not allow smoking within any portion of any indoor facility used for the provision of services for children as defined by the Act. The applicant organization agrees that it will require that the language of this certification be included in any sub-awards which contain provisions for children's services and that all sub-recipients shall certify accordingly.

HHS strongly encourages all grant recipients to provide a smoke-free workplace and promote the non-use of tobacco products. This is consistent with the HHS mission to protect and advance the physical and mental health of the American people.


Close Form
Project Narrative File(s)
*Mandatory Project Narrative File Filename:
CA_HIE_ProjectNarrative.pdf
Add Mandatory Project Narrative File
Delete Mandatory Project Narrative File
View Mandatory Project Narrative File
To add more Project Narrative File attachments, please use the attachment buttons below.
Add Optional Project Narrative File
Delete Optional Project Narrative File
View Optional Project Narrative File

Budget Narrative File(s)

*** Mandatory Budget Narrative Filename:** CA_HIE Budget Narrative.pdf

Add Mandatory Budget Narrative | Delete Mandatory Budget Narrative | View Mandatory Budget Narrative

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To add more Budget Narrative attachments, please use the attachment buttons below.

Add Optional Budget Narrative | Delete Optional Budget Narrative | View Optional Budget Narrative

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OMB Number: 0980-0204
Expiration Date: 12/31/2009

Project Abstract Summary

Program Announcement (CFDA)
93.719

*** Program Announcement (Funding Opportunity Number)**
EP-HIT-09-001

*** Closing Date**
10/16/2009

*** Applicant Name**
Health and Human Services Agency, California

*** Length of Proposed Project**
48

Application Control No.

Federal Share Requested (for each year)

* Federal Share 1st Year	* Federal Share 2nd Year	* Federal Share 3rd Year
$ 17,733,306	$ 11,431,179	$ 5,191,041

* Federal Share 4th Year	* Federal Share 5th Year
$ 4,397,010	$ 0

Non-Federal Share Requested (for each year)

* Non-Federal Share 1st Year	* Non-Federal Share 2nd Year	* Non-Federal Share 3rd Year
$ 1,567,311	$ 1,577,960	$ 1,575,174

* Non-Federal Share 4th Year	* Non-Federal Share 5th Year
$ 1,575,174	$ 0

*** Project Title**
California Health Information Exchange Cooperative Agreement Program

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OMB Number: 0980-0204
Expiration Date: 12/31/2009

Project Abstract Summary

*** Project Summary**

(Summary is also attached as CA_HIE_ProjectAbstract)

Brief Explanation of Where the State is in Achieving Statewide HIE among Healthcare Providers:

California providers rank above the national estimate of "basic" EHR adoption rates with 20% of medical groups estimated to be using EHRs. Similarly, among individual physicians, California physicians reported greater use of EHRs than the national average with 37% of physicians reporting EHR compared to 28% nationally. While fewer than a third of community clinics report they are actively pursuing EHRs, the majority of community clinics have some form of health IT in place, most commonly in the form of diabetes and immunization registries. California's current HIE efforts fall broadly into two categories: (i) large health systems, affiliated providers and ancillary services implementing integrated EHRs, and (ii) community-driven regional efforts that aim to ensure ubiquitous availability of data within a region or across the State. Multiple uncoordinated HIE efforts have developed over the past 15 years as regional initiatives. Of these regional efforts, only three are exchanging clinical data today. The remaining efforts are primarily focused on organizing, fundraising, and piloting solutions.

Abstract Narrative:

California is applying to enter into a Cooperative Agreement with the Office of the National Coordinator for Health Information Technology ("ONC") for a four year project period. The goal of our project is to build a foundation of health information exchange ("HIE") throughout the State that provides safe and secure patient and provider access to personal and population health information, dramatically improving the health and well-being, safety, efficiency, and quality of care for all Californians. Our approach is to implement a statewide collaboration process, led by a not-for-profit, public-private statewide governance entity. All stakeholders will have the opportunity to collaboratively develop the common policy and technical standards enabling health care providers to exchange information in an interoperable manner and building off of the many existing and nascent health information exchanges in the State. Our objectives are to meet the milestones and performance measures laid out in ONC's Funding Opportunity Announcement ("FOA"), which include key accomplishments in each of the five essential domains of HIE: governance, finance, technical infrastructure, business and technical operations, and legal/policy. The State intends to successfully develop the following HIE services: electronic prescribing and refill requests, including prescription fill status / medication fill history, electronic laboratory ordering and results delivery, clinical summary exchange for care coordination and patient engagement, electronic public health reporting (i.e., immunizations, notifiable laboratory results), electronic eligibility and claims submission, and public and population health and quality reporting. The expected outcomes of this project are that a critical mass of health care providers will participate in HIE facilitated by the State and will achieve meaningful use of EHRs as contemplated under the American Recovery and Reinvestment Act ("ARRA"). The products resulting from this project will be a State-supported evaluation, which can inform national program-level evaluations. Other products will be determined through the Cooperative Agreement contracting and milestone development process in which the State will engage the ONC.

*** Estimated number of people to be served as a result of the award of this grant.**

38292687

Close Form

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

Review Public Burden Disclosure Statement

1. * Type of Federal Action:	2. * Status of Federal Action:	3. * Report Type:
[ ] a. contract [X] b. grant [ ] c. cooperative agreement [ ] d. loan [ ] e. loan guarantee [ ] f. loan insurance	[ ] a. bid/offer/application [X] b. initial award [ ] c. post-award	[X] a. initial filing [ ] b. material change

4. Name and Address of Reporting Entity:

[X] Prime [ ] SubAwardee

*Name: California Health and Human Services Agency

*Street 1: 1600 9th Street, Suite 460 Street 2:

*City: Sacramento State: CA: California Zip: 95814-6439

Congressional District, if known: CA-all

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency:	7. * Federal Program Name/Description:
Health and Human Services	State Grants to Promote Health Information Technology CFDA Number, *if applicable*: 93.719
8. Federal Action Number, *if known:*	**9. Award Amount,** *if known:*
	$

10. a. Name and Address of Lobbying Registrant:

Prefix: * First Name: n/a Middle Name:

* Last Name: n/a Suffix:

* Street 1: Street 2:

* City: State: Zip:

b. Individual Performing Services (including address if different from No. 10a)

Prefix: * First Name: n/a Middle Name:

* Last Name: n/a Suffix:

* Street 1: Street 2:

* City: State: Zip:

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:** Lorna Fong

***Name:** Prefix: Mr. * First Name: Jonah Middle Name:

* Last Name: Frohlich Suffix:

Title: Deputy Secretary, Health IT **Telephone No.:** 916.651.8069 **Date:** 10/15/2009

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PHS-5161-1 (7/00)

CHECKLIST

OMB Approval No. 0920-0428

Public Burden Statement:

Public reporting burden of this collection of information is estimated to average 4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC, Clearance Officer, 1600 Clifton Road, MS D-24, Atlanta, GA 30333, ATTN: PRA (0920-0428). Do not send the completed form to this address.

NOTE TO APPLICANT:

This form must be completed and submitted with the original of your application. Be sure to complete both sides of this form. Check the appropriate boxes and provide the information requested. This form should be attached as the last age of the signed original of the application. This page is reserved for PHS staff use only.

Type of Application: [X] NEW [ ] Noncompeting Continuation [ ] Competing Continuation [ ] Supplemental

PART A: The following checklist is provided to assure that proper signatures, assurances, and certifications have been submitted.

	Included	NOT Applicable
1. Proper Signature and Date	[X]	
2. Proper Signature and Date on PHS-5161-1 "Certifications" page.	[X]	
3. Proper Signature and Date on appropriate "Assurances" page, i.e., SF-424B (Non-Construction Programs) or SF-424D (Construction Programs)	[X]	
4. If your organization currently has on file with DHHS the following assurances, please identify which have been filed by indicating the date of such filing on the line provided. (All four have been consolidated into a single form, HHS Form 690)		
[X] Civil Rights Assurance (45 CFR 80)	10/12/2009	
[X] Assurance Concerning the Handicapped (45 CFR 84)	10/12/2009	
[X] Assurance Concerning Sex Discrimination (45 CFR 86)	10/12/2009	
[X] Assurance Concerning Age Discrimination (45 CFR 90 & 45 CFR 91)	10/12/2009	
5. Human Subjects Certification, when applicable (45 CFR 46)	[ ]	[X]

PART B: This part is provided to assure that pertinent information has been addressed and included in the application.

	YES	NOT Applicable
1. Has a Public Health System Impact Statement for the proposed program/project been completed and distributed as required?	[ ]	[X]
2. Has the appropriate box been checked on the SF-424 (FACE PAGE) regarding intergovernmental review under E.O. 12372 ? (45 CFR Part 100)	[X]	
3. Has the entire proposed project period been identified on the SF-424?.....	[X]	
4. Have biographical sketch(es) with job description(s) been attached, when required?.....	[X]	[ ]
5. Has the "Budget Information" page, SF-424A (Non-Construction Programs) or SF-424C (Construction Programs), been completed and included?	[X]	
6. Has the 12 month detailed budget been provided?	[X]	[ ]
7. Has the budget for the entire proposed project period with sufficient detail been provided?	[X]	[ ]
8. For a Supplemental application, does the detailed budget address only the additional funds requested?	[ ]	[X]
9. For Competing Continuation and Supplemental applications, has a progress report been included?	[ ]	[X]

PART C: In the spaces provided below, please provide the requested information.

Business Official to be notified if an award is to be made

Name: Prefix: Mr. * First Name: Jonah Middle Name:
* Last Name: Frohlich Suffix:

Title: Deputy Secretary for HIT

Organization: CA Health and Human Services Agency

Address: * Street1: 1600 9th Street, Suite 460
Street 2:
* City: Sacramento
* State: CA: California Province:
* Country: USA: UNITED STATES * Zip / Postal Code: 95814-6439

*** Telephone Number:** 916.651.8609

E-mail Address: jfrohlich@chhs.ca.gov

Fax Number: 916.440.5008

APPLICANT ORGANIZATION'S 12-DIGIT DHHS EIN (If already assigned)

[ ] - 68-0281366 - [ ]

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PHS-5161-1 (7/00)

PART C (Continued): In the spaces provided below, please provide the requested information.

Program Director/Project Director/Principal Investigator designated to direct the proposed project

Name: Prefix: Mr. * First Name: Alex Middle Name:
* Last Name: Kam Suffix:

Title: Acting Directory, CalOHII

Organization: CA Health and Human Service Agency

Address: * Street1: 1600 9th Street, Suite 460
Street2:
* City: Sacramento
* State: CA: California Province:
* Country: USA: UNITED STATES * Zip / Postal Code: 95814-6439

*** Telephone Number:** 916.651.6909

E-mail Address: akam@ohi.ca.gov

Fax Number: 916.440.5008

SOCIAL SECURITY NUMBER 575-60-3574

HIGHEST DEGREE EARNED Masters, Social Work

PART D: A private, nonprofit organization must include evidence of its nonprofit status with the application. Any of the following is acceptable evidence. Check the appropriate box or complete the "Previously Filed" section, whichever is applicable.

- ☐ (a) A reference to the organization's listing in the Internal Revenue Service's (IRS) most recent list of tax-exempt organizations described in section 501(c)(3) of the IRS Code.
- ☐ (b) A copy of a currently valid Internal Revenue Service Tax exemption certificate.
- ☐ (c) A statement from a State taxing body, State Attorney General, or other appropriate State official certifying that the applicant organization has a nonprofit status and that none of the net earnings accrue to any private shareholders or individuals.
- ☐ (d) A certified copy of the organization's certificate of incorporation or similar document if it clearly establishes the nonprofit status of the organization.
- ☐ (e) Any of the above proof for a State or national parent organization, and a statement signed by the parent organization that the applicant organization is a local nonprofit affiliate.

If an applicant has evidence of current nonprofit status on file with an agency of PHS, it will not be necessary to file similar papers again, but the place and date of filing must be indicated.

Previously Filed with: * *(Agency)* on * *(Date)*

INVENTIONS

If this is an application for continued support, include: (1) the report of inventions conceived or reduced to practice required by the terms and conditions of the grant; or (2) a list of inventions already reported, or (3) a negative certification.

EXECUTIVE ORDER 12372

Effective September 30, 1983, Executive Order 12372 (Intergovernmental Review of Federal Programs) directed OMB to abolish OMB Circular A-95 and establish a new process for consulting with State and local elected officials on proposed Federal financial assistance. The Department of Health and Human Services implemented the Executive Order through regulations at 45 CFR Part 100 (Inter-governmental Review of Department of Health and Human Services Programs and Activities). The objectives of the Executive Order are to (1) increase State flexibility to design a consultation process and select the programs it wishes to review, (2) increase the ability of State and local elected officials to influence Federal decisions and (3) compel Federal officials to be responsive to State concerns, or explain the reasons.

The regulations at 45 CFR Part 100 were published in *Federal Register* on June 24, 1983, along with a notice identifying the Department's programs that are subject to the provisions of Executive Order 12372. Information regarding PHS programs subject to Executive Order 12372 is also available from the appropriate awarding office.

States participating in this program establish State Single Points of Contact (SPOCs) to coordinate and manage the review and comment on proposed Federal financial assistance. Applicants should contact the Governor's office for information regarding the SPOC, programs selected for review, and the consultation (review) process designed by their State.

Applicants are to certify on the face page of the SF-424 (attached) whether the request is for a program covered under Executive Order. 12372 and, where appropriate, whether the State has been given an opportunity to comment.

OMB Approval No. 4040-0006
Expiration Date 07/30/2010

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. State HIE Cooperative Agreement Program	93.719	$	$	$ 38,752,536.00	$ 6,295,619.00	$ 45,048,155.00
2.						
3.						
4.						
5. Totals		$	$	$ 38,752,536.00	$ 6,295,619.00	$ 45,048,155.00

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Prescribed by OMB (Circular A -102) Page 1

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)	(4)	Total (5)
	State HIE Cooperative Agreement Program	N/A	N/A		
a. Personnel	$	$ 11,262,824.00	$ 2,627,872.00	$	$ 13,890,696.00
b. Fringe Benefits		3,572,712.00	788,360.00		4,361,072.00
c. Travel		793,000.00	50,000.00		843,000.00
d. Equipment		300,000.00	0.00		300,000.00
e. Supplies		478,050.00	0.00		478,050.00
f. Contractual		21,209,000.00	2,652,955.00		23,861,955.00
g. Construction		0.00	0.00		
h. Other		1,136,950.00	176,432.00		1,313,382.00
i. Total Direct Charges (sum of 6a-6h)		38,752,536.00	6,295,619.00		$ 45,048,155.00
j. Indirect Charges					$
k. TOTALS (sum of 6i and 6j)	$	$ 38,752,536.00	$ 6,295,619.00	$	$ 45,048,155.00
7. Program Income	$	$	$	$	$

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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program		(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8.	State HIE Cooperative Agreement Program	$	$ 6,295,619.00	$	$ 6,295,619.00
9.					
10.					
11.					
12. TOTAL (sum of lines 8-11)		$	$ 6,295,619.00	$	$ 6,295,619.00

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$	$	$	$	$
14. Non-Federal	$				
15. TOTAL (sum of lines 13 and 14)	$	$	$	$	$

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program		FUTURE FUNDING PERIODS (YEARS)			
		(b)First	(c) Second	(d) Third	(e) Fourth
16.	State HIE Cooperative Agreement Program	$ 17,733,306.00	$ 11,431,179.00	$ 5,191,041.00	$ 4,397,010.00
17.					
18.					
19.					
20. TOTAL (sum of lines 16 - 19)		$ 17,733,306.00	$ 11,431,179.00	$ 5,191,041.00	$ 4,397,010.00

SECTION F - OTHER BUDGET INFORMATION			
21. Direct Charges:		22. Indirect Charges:	No Indirect Rate used
23. Remarks:	All costs directly impact the project		

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OMB Approval No.: 4040-0007
Expiration Date: 07/30/2010

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C.§§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U. S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

* SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	* TITLE
Lorna Fong	Deputy Secretary, HIT
* APPLICANT ORGANIZATION	* DATE SUBMITTED
Health and Human Services Agency, California	10/15/2009

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