California Trust Framework

Brief Report

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http://www.ucdmc.ucdavis.edu/phi/programs/cheq/
The Challenge of Data Sharing

With the increasing use of electronic health records in hospitals and physician practices, connecting clinical data elements electronically is a challenge that has come to the forefront of care delivery in the US. While there are technical challenges, issues of data governance, trust among organizations, and compliance with legal and regulatory requirements are also barriers to clinical data sharing. As a result, sharing clinical information among organizations has proven to be difficult, costly and time consuming in practice. In order to maximize the utility and use of clinical information by having access to a comprehensive set of data, organizations need confidence in models for data exchange such as health information exchange (HIE), assistance with legal agreements, and information on best practices for technical implementations.

California poses a challenge to interoperability due to its sheer geographic size, the majority of which is rural or remote, large and diverse population and number of providers. These factors imply a diversity of needs for which one-size-fits-all solutions are not appropriate. With the advent of Meaningful Use, hospitals, clinics and solo practitioners have adopted electronic health record technologies that allow their offices to retain patient health information electronically. According to the California Health Care Foundation, the percentage of California physicians who use EHRs increased from 37% in 2008 to 59% in 2013.1 The next challenge in improving care delivery is to coordinate care among the various providers supporting the patient. California providers are especially challenged in this regard due to a myriad of state, federal and regional regulations, a variety of EHR systems and lack of standards data sharing rules and technology.

California providers have implemented EHRs at varying degrees and some providers have begun to maximize the EHR capabilities by developing regional data sharing capabilities. These local or regional Health Information Organizations (HIOs) have developed data sharing solutions for community stakeholders using their own governance and technology policies. However, because patients are mobile and likely to live in different geographic areas, organizations now may need to belong to more than one HIO. They may also conduct data sharing on their own. These issues make navigation of these numerous policies between regions, HIOs, and institutions a momentous effort. Prior to 2013, there were no statewide standards, policies or technical guidelines to support HIO to HIO data sharing.

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1 CALIFORNIA HEALTHCARE FOUNDATION; Health Information Technology in California: Milestones and Miles to Go, November 2013
A Solution for California Through Collaboration

The California Health eQuality (CHeQ) program at University of California Davis identifies among its goals, the building of a trusted exchange environment \(^2\). To this end, CHeQ launched in June of 2013 a pilot project to provide technical support and development of a **California Trust Framework**. The California Health and Human Services’ Office of Health Information Integrity (CalOHII) had established a governing committee, now called California Association of Health Information Exchanges (CAHIE), made up of leadership from established HIOs in California. This group was asked to participate and support a pilot project of the Framework \(^3\). For the first time, both community HIOs and enterprise HIOs have an official forum for developing common standards and policies for data sharing. The CAHIE leadership includes Chair David Minch of HealthShare Bay Area and Co-Chair Bill Beighe of the Santa Cruz Health Information Exchange.

The **California Trust Framework** (Framework) includes a common set of policies and procedures that participants agree to follow that will demonstrate trust so that personal health information (PHI) can be safely shared between other organizations to coordinate care. This framework addresses two key components of data sharing, the policy for privacy and security of electronic PHI and the technical standards to facilitate exchange.

The Framework establishes for three Parties--the Health Information Organization or **HIO**, the HIO’s **Participant(s)** and the Participant’s **Authorized End User(s)**--the policy requirements of exchange of PHI. The HIOs agree to use the policies for data exchange in their own agreements with end users of the data so that all participants in California have common agreement for secure data exchange.

The Framework addresses not only operational requirements for access controls, authentication and data security, but also requirements for technical standards to be established and maintained by the organization. Through the HIO level agreement and establishment of the policies to support data sharing, all users of the Framework can “trust” the data is handled in a similar manner across all organizations. The Framework also addresses policies and requirements of end users. As such, the HIOs are agreeing to “roll-down” the requirements of the Framework to data receivers and data providers within their own network. With established policies in place, the CTF also tackles the issue of technology standards for data sharing.

The Framework approval entails detailed review and attestation of each participant on their definition and policy. Through this approval process, participants are assured that they can trust that other HIOs are safe data exchange partners. The major review elements are:

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\(^2\) [www.ucdavis.edu/iph/Programs/cheq](http://www.ucdavis.edu/iph/Programs/cheq)

\(^3\) [http://cheq.wikispaces.com/Trust+Framework#California+Trust+Framework+Pilot-Pilot+Project-Participants](http://cheq.wikispaces.com/Trust+Framework#California+Trust+Framework+Pilot-Pilot+Project-Participants)
1. the HIO will manage the flow of information in a consistent and standardized manner consistent with state and federal requirements;
2. the HIO Participants will manage and abide by the Agreements,
3. the data End Users will access and utilize information in accordance with the Framework policies.

This framework was drawn from previous work conducted by the National Association for Trusted Exchange (http://nate-trust.org/) and includes a set of technological components that CAHIE members have agreed to use. It also leveraged the California state-developed Model Modular Participation Agreement (http://www.ohii.ca.gov/calohi/PrivacySecurity/ToolstoHelpYou/ModelModularParticipantsAgreement.aspx).

Using the established federal guidelines as a base, the participants identified California specific requirements and are piloting two national models of exchange promulgated by the Office of the National Coordinator for Health Information Technology (ONC), Direct Secure Messaging (Direct) and CONNECT exchange specifications, for demonstration in a pilot project. DIRECT is a push model for exchanging any content with any participant through a secure email type of technology (http://wiki.directproject.org/home). CONNECT is an ONC-supported open-source software that supports a query-response, push and subscription models of exchange that that are generally implemented by HIO or enterprises (http://www.connectopensource.org/).

There are three components of the Network. The first element of the Network is the healthcare provider directory, a single source of provider information developed using already established federal standards, and modified by mutual agreement of the members to allow members of one HIO to identify or “discover” providers in another participating HIO and how to exchange health information with them. The second element is the services registry which coordinates the rules for data sharing among the participating HIOs and ensures the participants are compliant with the policies of the Network.

The Framework provides a complete set of guidelines and specifications that allow independent HIOs in the State of California to communicate with each other and entities in other states.

“This process has built the platform by which we can address HIE in its entirety. By combining the DIRECT and Exchange policies framework and technical network, California is one of the first states to have a platform for multiple HIE channels.”

Dave Minch, Co-Chair, CAHIE
Experience from the Pilot Project

The following HIOs and affiliated organizations participated in the pilot project:

- California Health eQuality (CHeQ), Project Manager
- Inland Empire Health Information Exchange
- North Coast Health Information Exchange (NCHIN)
- Orange County Partnership Regional Health Information Organization (OCPRHIO)
- RAIN - Live Oak Health Information Exchange and Telemedicine Network
- San Diego Health Connect
- Santa Cruz Health Information Exchange
- Sujansky & Associates, LLC (a CHCF pilot implementation)
- UC Davis Health System

A unique aspect of the project was the ability of the organizations to rely on the single agreement established between the participant and the project manager CHeQ. This reduced the need to execute a myriad of individual agreements typically needed for current HIO to HIO data transfer. The data sharing agreement template was supported by a set of policies and procedures modeled on the National Association for Trusted Exchange (NATE) Policy and Procedure (P&P) 2.0 and implemented by the pilot HIOs.

Santa Cruz Health Information Exchange piloted the Framework using the both Direct and CONNECT models. Within a few months they were able to demonstrate secure clinical message delivery to more than 10 other organizations outside of Santa Cruz. These exchange partners included California-based providers and organizations in Oregon, Washington and Alaska in collaboration with NATE. In addition, this process helped them identify gaps in their own policies and procedures and improve their systems. They demonstrated 100% compliance with policies and procedures, set up and testing of the local provider directory, and testing of the federated directory query.

“Even with the technical capability of EHRs to share data, the foundation of governance, policy and trust has to be developed in order to get past the test phase to the actual adoption.”

Bill Beighe, Santa Cruz HIE, Project Lead

In addition, “Trust Bundles” were created as documentation of specific use cases for data exchange with verification or certifications that the participants are compliant with the policies needed in each bundle. By breaking down the large volumes of laws and regulations into these sets of applicable documents associated with specific technical methods of exchange, participants are able to more easily adopt data sharing for their purposes. They can be assured or trust that the data receivers and data suppliers are exchanging data in an interoperable, standard form, and in compliance with legal requirements.
For smaller HIOs with more limited resources, the pilot has been especially useful in fostering data exchange. RAIN, the Live Oak HIE and Telemedicine Network, utilized the pilot to launch their DIRECT messaging service and to create a trusted entity for data sharing with other HIOs in the state.

Benefits of the Framework and Network

**Technical and governance standards.** With the policy issues addressed through the Framework, the technical standards and capabilities for seamless data sharing are fulfilled with the Network. These components allow the organizations to consider exchange with a few or with many partners.

“We are open system so we only provide a fraction of the care for our patients. The ability to exchange with hospitals, physicians, nursing homes, pharmacy, is critically important for safety and affordability. One-on-one data sharing agreements are very onerous to manage.”

*Chris Jaeger, Sutter Health, Chief Medical Information Officer*

**Baseline for assuring trust but flexibility to exceed it.** The purpose of the Framework is to establish a baseline or a minimum level of confidence and trust in terms of policies and procedures and rules of engagement between the organizations interested in exchanging data. While an organization can still require a higher level of security and performance, a potential partner within the network has a duty to respond to the request but not necessarily to accept that higher level if they are unable to achieve it.

**Path for out of area or multi-area exchanges.** It is important for health information from out of plan or out of area treatment to make it back into the EHR. HIOs from these other areas can be the conduit of these data, but only if there are mechanisms for secure transmission to a local HIO or the home provider’s systems. The Framework and Network provide a path for accomplishing this. Use of the Framework and Network can also potentially reduce the cost to participants by allowing organizations to take advantage of inter-HIO exchange, rather than belonging to multiple HIOs.

**Leveraging Legal Expertise.** The legal, privacy and security issues related to data sharing can be complex. The issues include data ownership, business associates agreements, encryption, access to data, and many others. There are limited number of experts who are experienced in these issues locally or nationally. Without the necessary legal counsel, organizations may be loathe to participate in data sharing. Having an already-vetted agreement that has
incorporated the input of a number of California organizations provides a starting point for potential participants and reduce legal resources needed and the associated expense.

“Sutter had to look nationally for legal counsel with expertise in area, there are few experts and those have conflicts if they are representing the other party. We have legal, privacy/security officer, etc. who can figure this out for Sutter. Our partners, FQHCs, small practices, don’t have those resources to write or vet agreements.”

Chris Jaeger, Sutter Health, Chief Medical Information Officer

Conclusion

There are few examples of HIOs who are fully operational and exchanging with other HIOs, in part due to lack of standards for trust and governance. Given the nascency of these organizations, it is not surprising that business models for data sharing have not yet been documented. The Network and Framework have allowed HIOs in California to begin to address these issues and even explore potential cost-sharing models. CAHIE members are exploring this and expect that they will pay an ongoing membership fee but the transaction traffic will be free.

As HIOs begin to knit together the providers in California, the California Trust Framework and Network provides valuable, practical resources and tools. CHeQ’s use of the ARRA/HITECH Act funds to coordinate and develop the formation of this project leaves a valuable legacy for clinical data sharing efforts in California. CAHIE has through this partnership developed a multi-stakeholder governance entity and takes the helm to continue this project into the future.
About the Partners

About California Health eQuality (CHeQ)
California Health eQuality (CHeQ) is a program of the UC Davis Institute for Population Health Improvement that administers statewide health information exchange (HIE) projects for California. Funded by the California Health and Human Services Agency, under the auspices of the Office of the National Coordinator for Health IT State HIE Cooperative Agreement, CHeQ is promoting coordinated and integrated care through health information exchange. Programs including a trusted exchange environment, improved public health capacity for electronic reporting, HIE acceleration funding opportunities, and the monitoring of HIE adoption lay a foundation for improved quality of care for all Californians. Please visit CHeQ at http://www.ucdmc.ucdavis.edu/iph/programs/cheq/.

About Institute for Population Health Improvement (IPHI)
The UC Davis Institute for Population Health Improvement (IPHI) is working to align the many determinants of health to promote and sustain the well-being of both individuals and their communities. Established in 2011, the institute is leading an array of initiatives, from improving healthcare quality and health information exchange to advancing surveillance and prevention programs for heart disease and cancer.

About Health Equity Institute at San Francisco State University
The Health Equity Institute of SFSU seeks to foster innovation and community engagement towards a vision of a truly healthy society. The mission of the Health Equity Institute (HEI) is to create an intellectual environment that encourages diversity of perspectives, challenges conventional approaches, and produces innovative action-oriented research in the biomedical and behavioral sciences in order to improve health, eliminate health disparities, and establish equity in health. San Francisco State University (SFSU) is a public university affiliated with the California State University system. Located in San Francisco, it offers 118 different Bachelor's degrees, 94 Master's degrees, and 5 Doctoral degrees.