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ASSEMBLY COMMITTEE ON HEALTH
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Informational Hearing

The Health Information Exchange Landscape in California

Tuesday, November 10, 2020 - 1:00 p.m. – 3:00 p.m.
State Capitol, Assembly Chambers

BACKGROUND

Every patient encounter with a health care provider generates health information. Until the last decade, most patient health information was paper-based. When patients saw multiple health care providers, their treating providers were often unaware of the patient's treatment history. Patients carried copies of their medical records in folders or on a disc or flash drive, or records were faxed, sent via messenger, or mailed between health care providers. Over the last decade, the increased adoption and use of electronic health records (EHRs) by health care providers and hospitals has enabled patient health information to be exchanged more easily.
Health information exchange (HIEs) are processes that allow health care providers and health facilities to electronically access and securely share patient health information.

While an important component to providing patient care, HIE is a complex topic. The exchange of health information involves federal and state regulatory requirements, public and private financing arrangements, and an existing array of private, regional, and national arrangements whereby patient health information is and is not exchanged electronically.

This informational hearing will provide an overview of the current HIE landscape in California and will include presentations on the following:

- Existing HIE arrangements in California;
- Recent state and federal efforts to encourage HIE through financing the adoption and use of EHRs and to connect providers to regional health information organizations (HIOs);
- Information on forthcoming federal requirements relating to HIE;
- Efforts in other states to implement HIE; and,
- Policy options to increase HIE.

Why HIE Matters

There are multiple use cases for the electronic exchange of health information.

- **Patients**. Nationally, 81% of individuals went to a health care provider at least once within the past year. Overall, 32% of individuals who went to a doctor in the past 12 months reported experiencing a gap in information exchange. For example, about one in 20 individuals who had been to the physician last year reported having to redo a test or procedure because their prior data was unavailable, and about one in five individuals had to bring prior test results to an appointment.[i] For patients, real-time data sharing of patient health information can reduce duplicative services (such as laboratory results and imaging), prevent adverse drug reactions and medication errors, and reduce the administrative burden on patients of maintaining paper copies of their medical history.

- **Health Care Providers**. A *New England Journal of Medicine* study found that Americans with multiple chronic conditions see up to 16 different physicians in a single year, and a typical Medicare beneficiary sees up to seven health care providers in a year.[ii] The typical primary care physician has to coordinate services with 229 other physicians working in 117 practices.[iii] Access to real-time patient information informs a treating provider to be aware of prior diagnoses and treatments provided by other health care providers. The exchange of health information improves patient care because it brings information about the patient, regardless of where care or services have previously been delivered, to the patient's treating health care provider in order to better inform and coordinate care delivery. Similar to the benefit for patients, clinicians with information from other care settings can avoid ordering duplicative tests and procedures, identify and address gaps in care, practice team-based care, avoid medication and other errors, and improve care coordination.

- **Payors and Integrated Delivery Systems**. For health plans and organized delivery systems such as medical groups and independent practice associations responsible for the care of a patient under a risk-sharing or capitated payment arrangement, real-time data is a necessary component to coordinate care, reduce emergency department usage and costs, reduce hospital readmissions, manage costs, and improve quality.

- **States**. Access to real-time patient data enables a state to detect and respond to disease outbreaks and public health threats, monitor population health, identify areas of the state needing increased system capacity to address a spike in expected health care utilization, assess the effectiveness of various treatments, and monitor the safety of medical products. According to the Centers for Disease Control and Prevention (CDC), health information sources, such as EHRs, HIEs, vital records, immunization information systems, syndromic surveillance systems and other public health databases, can provide critically important data about specific population health needs and effective interventions to practitioners responsible for addressing public health and patient care.[iv]

How Health Information Is Exchanged Electronically in California

California has a decentralized approach to HIE, with no state-established or designated HIO that acts a central depository for patient health information. Instead, California has more than a dozen locally established regional non-profit HIOs (described further below) that serve a county or

multiple counties, and there is no state law or requirement that providers and payors submit information to or participate in data exchange with such entities.

In addition to regional HIOs, health care providers exchange patient health information through use of common EHRs (such as Epic Care Everywhere) and through different national networks. Health information can be exchanged by querying a HIO the provider belongs to, a national network, or an EHR that connects with a common EHR used by other providers to search and discover ("pull") information on a patient. Patient health information can also be delivered ("pushed") to a heath care provider who subscribes to alerts from an HIO or the provider's EHR, such as admission or discharge from a hospital or laboratory results. The health information that is exchanged can also be provided and presented in different forms. For example, query-based exchanges can produce voluminous portable document formats or PDFs of patient records, while other methods of exchange involve presenting the data in more usable format, and integrating the patient health information directly into the health care provider's EHR.

In January 2019, the California HealthCare Foundation's (CHCF) published "Promise and Pitfalls: A Look at California's Regional Health Information Organizations"[v] (CHCF report), which describes some of the major HIE models in California as follows:

a. **Regional HIOs**. Regional HIOs are non-profit entities that serve defined geographical regions, ranging from a single county to an entire state that are open to any health care providers that serve patients in a region, regardless of its business affiliations or choice of EHR vendors. The CHCF report indicates the state's nine largest regional HIOs support exchange in 35 of 58 counties in California, representing approximately 22 million of the state's 40 million residents:

    - Central Coast Health Connect
    - Central Valley HIO
    - Inland Empire HIO
    - Los Angeles Network for Enhanced Services
    - North Coast Health Improvement and Information Network
    - Orange County Partnership Regional Health Information Organization
    - Redwood MedNet
    - SacValley MedShare
    - San Diego Health Connect
    - San Joaquin Community HIE
    - San Mateo County Connected Care
    - Santa Cruz Health Information Organization

b. **Enterprise or Private Exchanges**. Large hospital and health systems have system-specific HIEs, commonly referred to as "enterprise health information exchanges." An enterprise HIO is built specifically to meet both the financial and clinical objectives of a distinct business entity such as a hospital system, independent physician association,

integrated delivery network, or accountable care organization. While these HIOs can include many different participants, such as hospitals, clinics, laboratories, and even payers, they are typically open only to organizations contractually partnered with the business entity that built the HIO. According to the CHCF publication, examples of enterprise or private HIOs in California include those operated by Kaiser Permanente, Sharp HealthCare, Dignity Health, and Monarch HealthCare.

c. EHR Systems that Enable Data Exchange. A single EHR system with widespread adoption in a particular region or across a health care delivery network that contains robust data-exchange features can act in some ways like an HIO. Data exchanged through the EHR has the advantage of always being integrated directly into the EHR of health care providers using that EHR vendor. Provider organizations can also import patient records from other health care providers and facilities that use the same EHR and have enabled its data-exchange features. According to the CHCF report, the most prominent example in the state is Epic and its Epic Care Everywhere network. The Epic EHR is widely used in California by many hospital systems (Sutter, Providence, Memorial Care), academic medical centers (e.g., Stanford, University of California hospitals), integrated delivery systems (Kaiser Permanente, Scripps Health, Cedars-Sinai), and community clinic networks (Oregon Community Health Information Network).

d. National Vendor-Sponsored. This type of HIO is funded and operated by a consortium of commercial vendors with the shared goal of enabling interoperability[1] among their respective health information technology (HIT) products, such as EHRs. Access to the network is typically tightly integrated into each vendor's respective HIT product and available to its customers with minimal custom development or configuration. Because these networks' members tend to be EHR vendors, they present benefits (data integrated directly into the EHR) and challenges (less robust features, inability to access data from facilities that have not joined the network or use a nonmember EHR) similar to the afore-mentioned individual EHRs offering HIO-like exchange. According to the CHCF report, examples of national vendor-sponsored HIOs include Carequality, whose network is available to users of Epic, athenahealth, eClinicalWorks, and NextGen Healthcare EHRs; CommonWell Health Alliance, whose network is available to users of Cerner, Meditech, Evident, athena-health, eClinicalWorks, and Greenway Health EHRs; and DirectTrust.

e. HIOs that Connect HIOs. These HIOs serve as "gateways" between other existing networks including enterprise HIOs and regional HIOs and provide services to normalize searches for and delivery of patient data across distinct HIOs which may have differing data formats and standards. According to the CHCF report, an example of such an HIO is eHealth Exchange.

[1] Interoperable or interoperability is defined as the ability of a system to exchange electronic health information with and use electronic health information from other systems without special effort on the part of the user.

f. **Niche Commercial Data-Exchange Services**. There are several companies that provide specific data-exchange services focusing on a particular aspect of care, such as the sharing of controlled substance prescribing data across hospital emergency departments or the sharing of hospital admission, discharge and transfer information with community providers. According to the CHCF report, examples of these entities include Collective Medical Technologies, ACT.dm, and Vynca.

A distinguishing feature between the different models is whether data is physically aggregated and managed and centrally stored (referred to as a centralized model) versus a federated model, where data is stored and managed by a distributed network of members of the HIO, versus a hybrid model, which is similar to a federated model but where some patient data (such as patient identity and record-locators services) are centralized.

Barriers to Health Information Exchange

One of the barriers to HIE is the United States' fragmented health care financing and delivery system involving multiple payors, state and federal administering departments, and competing and independent providers, systems, and networks. Because most payments are volume-based instead of outcomes or value-based, there is little financial incentive (referred to as a "business case") to share information across settings to reduce costs or improve the quality of care,[vi] and there are business incentives that work against interoperability (for example, the loss of patients to competing health care providers, systems or plans, the cost of EHR systems, and the subscription cost of joining an HIO). In addition, providers with existing enterprise HIOs may not see a business case for joining a regional HIO.

In addition, there is currently no national or California-specific unique patient identifier that would increase data matching for HIE to avoid the creation of duplicative records for a single patient or to prevent the records for different patients from being mistakenly combined.[vii] Patient record matching is the process of comparing patient information in different health records to determine if the records refer to the same patient. Inaccurate, incomplete, or inconsistently formatted data can make record-matching difficult.

Finally, a barrier to HIE are the additional federal regulatory patient consent requirements that apply to patients receiving care for a substance use disorder (SUD) in a federally assisted program[viii] and state law requirements that require patient consent for sharing some patient mental health information.[ix]

Gaps in Current Health Information Exchange System

Despite increases in the use of EHRs and the availability of HIE through regional HIOs, EHR vendors, and national data sharing networks, gaps in the exchange of health information exist. There are areas of the state with no HIO, limited participation by hospitals and other providers in regional HIOs, and providers (such as skilled nursing facilities[x]) with less robust rates of adoption of EHRs. Data that is reported directly to the states also unavailable (such as immunizations or laboratory test results) on a real-time basis to treating health care providers

when those services are performed by outside entities.

In 2015, Congress declared a national objective to achieve widespread exchange of health information through interoperable certified EHR technology nationwide by December 31, 2018 through the Medicare Access and the Children's Health Insurance Program Reauthorization Act of 2015.[xi] The most recent data from 2017 from the federal Office of the National Coordinator for Health Information Technology (National Coordinator) in the federal Department of Health and Human Services (HHS) shows California hospitals with limited ability to send, receive, find, and integrate data from outside health care providers.

Send (percentage of hospitals that electronically send patient summary of care records to outside providers)	87%
Receive (percent of hospitals that electronically receive patient summary of care records from outside providers)	78%
Find (percent of hospitals that electronically find patient health information from outside providers)	62%
Integrate (percent of hospitals that electronically integrate patient summary of care records from outside providers into an EHR without manual entry)	54%
All domains	42%

State and Federal Policy to Encourage Electronic HIE

Patient health information is regulated under state law[xii] and federal law and regulation[xiii] not only to protect the privacy of personal health information, but also to allow information to be shared between health care providers for treatment purposes, and to incentivize the adoption of certified EHR technology that fosters health information sharing.

In 2009, President Obama signed the American Recovery and Reinvestment Act of 2009 (ARRA), which included the HITECH Act.[xiv] Among other provisions, the HITECH Act provides eligible hospitals and health care professionals with financial incentives through Medicare and Medicaid financing to adopt, implement and upgrade certified EHRs, and for "meaningful use" of certified EHRs.

Within state government, legislation was enacted to require the Department of Health Care Services (DHCS) to establish and administer the EHR Incentive Program.[xv] The Office of Health Information Technology implemented the EHR Program in October 2011. As of June 2019, the EHR Incentive Program had provided $768 million in federal funds to 25,931 professionals and $819 million in federal funds to 331 hospitals for adoption, implementation, and upgrade and meaningful use of EHR technology.[xvi] The incentive payments to California Medi-Cal professionals and hospitals exceed those of any other state.

Due in part to the HITECH Act, the percentage of hospitals and physicians that have shifted from paper-based records to EHRs has increased dramatically. Nationally, the use of any type of EHR system by office-based physicians increased from 18% in 2001 to 48% in 2009 and 78% in the 2013 estimates.[xvii] In California, as of 2017, nearly all hospitals (97%) and nearly three-quarters of physicians (73%) use federally certified EHRs. In accordance with the HITECH Act, the EHR Incentive Program will distribute incentive funds through 2021 and the Centers for Medicare & Medicaid Services (CMS) has advised states that funding is available for administrative and auditing functions through September 30, 2023.[xviii]

In addition to the EHR Incentive Program, the California Medi-Cal HIE Onboarding Program (known as Cal-HOP) makes available $50 million in federal funds ($45 million) through ARRA and state funding ($5 million) through the 2018 Budget Act[xix] to support hospital and provider practices connect with HIOs, to support modernization and development of interfaces to facilitate HIE, and to support integration with the Controlled Substance Utilization Review and Evaluation System (CURES is the state's prescription drug monitoring program, and it contains information on controlled substances dispensed).

In 2016, President Obama signed into law the 21st Century Cures Act[xx] (Cures Act) to further promote the adoption use of EHR technology. The Cures Act contained multiple provisions, including provisions regarding the interoperability of health records. The Cures Act requires ONC, in collaboration with other federal entities, to convene stakeholders to develop and publish on its website a trusted exchange framework and a common agreement among existing health information networks to exchange electronic health information, as steps in achieving an interoperable nationwide health information network. In addition, the Cures Act prohibits "information blocking" and contains provisions to facilitate patient access to their electronic health information by requiring the HHS Secretary to encourage partnerships between health information networks, health care providers, and other stakeholders to offer access through secure, user-friendly software. Federal regulations implementing these provisions were released in 2020 by ONC and CMS and also include a requirement that hospitals using an EHR system, as a condition of participation in the federal Medicare program, to demonstrate the ability to send notifications of a patient's admission to a hospital.[xxi]

The goal of the federal rules implementing the Cures Act are to drive the electronic access, exchange, and use of health information, to inject competition into the health care delivery system by addressing both technical barriers and business practices that impede the secure and appropriate sharing of data, with a central purpose of the rule being to facilitate patient access to their electronic health information on their smartphone, thereby growing a patient- and provider-facing app economy. For example, health information technology developers are required to publish application programming interfaces (APIs) that allow health information to be securely accessed, exchanged, and used "without special effort." The goal of establishing common standards for third-party app developers was to foster competition by preventing patients and app developers from being bound to particular clinicians or products. The rules also include requirements that certified HIT developers make available secure, standards-based APIs that

facilitate a patients' use of their smartphones for accessing EHI at no cost.

Conclusion

A fundamental issue related to state HIE policy is what is the state role in HIE. Despite progress in the adoption and use of EHRs and the existence of private and nonprofit networks and regional HIOs, there are gaps in California's HIE landscape. To determine the appropriate role of the state, it is necessary to understand the policy goal of expanded HIE. Central to the question of the state role is what HIE means and what policy goals are aimed to be achieved. For example, the breadth and depth of HIE that is exchanged, how it is exchanged ("push" and "pull"), whether patient information is integrated into provider's EHR, and whether patient health information is centrally stored versus remaining with health care providers vary under existing arrangements. A statewide HIE policy can be aimed at multiple goals – to provide real-time information to treating clinicians at the point of care, to push alerts to health care providers of medical events involving assigned patients, to improve the care coordination of patients with chronic conditions seeing multiple health care providers, to provide team-based care, to enable the state to monitor and respond to public health threats, to enable providers to access communicable disease data reported directly to the state, to reduce duplicative services, to prevent adverse drug reactions and medication errors, and to enable alternative payment methodologies. Central to all these issues is how state HIE policy can improve the quality, delivery and cost of health care.

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[i] Office of the National Coordinator for Health Information Technology. 'Gaps in Individuals' Information Exchange,' Health IT Quick-Stat #56. dashboard.healthit.gov/quickstats/pages/consumers-gaps-in-information-exchange.php.June 2019.

[ii] Pham HH, Schrag D, O'Malley AS, Wu B, Bach PB. Care patterns in Medicare and their implications for pay for performance. N Engl J Med 2007; 356: 1130-1139. http://www.nejm.org/doi/full/10.1056/NEJMsa063979

[iii] Pham HH, O'Malley AS, Bach PB, Saiontz-Martinez C, Schrag D. Primary care physicians' links to other physicians through Medicare patients: the scope of care coordination. Ann Intern Med. 2009; 150: 236-428.

[iv] CDC, Public Health Professionals Gateway, Public Health Law, "The Use of Health Information and Public Health" at: https://www.cdc.gov/phlp/publications/topic/healthinformation.html

[v] Sujansky J. Promise and Pitfalls: A Look at California's Regional Health Information Organizations. California Health Care Foundation January 2019 at: https://www.chcf.org/wp-content/uploads/2019/01/PromisePitfallsCARegionalHIO.pdf

[vi] "Health Policy Brief: Interoperability," *Health Affairs*, August 11, 2014.
[vii] Health and Safety Code Section 127673.3 requires the Office of Statewide Health Planning and Development, for purposes of the Health Care Payment Data Program, to develop and maintain a master person index, a master index of providers and supplier and a master payer index that will enable the matching of California residents longitudinally and across coverage sources, and will enable the matching of providers and suppliers across practice arrangements, payment sources and regulators. This provision was enacted as part of the health budget trailer bill of 2020, AB 80 (Committee on Budget), Chapter 12, Statutes of 2020.
[viii] Title 42 of the Code of Federation Regulations, Sections 2.11 and 2.12.
[ix] Welfare and Institutions Code Section 5328.
[x] Henry, J., Plypchuck, Y., & Patel, V. (November 2018) Electronic Health Record Adoption and Interoperability among U.S. Skilled Nursing Facilities in 2017. ONC Data Brief, no.41. Office of the National Coordinator for Health Information Technology: Washington, DC.
[xi] Public Law No. 114-10, Section 106(b), 129 Stat. 138.
[xii] Confidentiality of Medical Information Act, Civil Code Section 56 et seq.
[xiii] Public Law No. 104-191, 110 Stat. 1396 (1996); Title 45 Code of Federal Regulations Sections 164.500-534.
[xiv] Public Law No. 111-5, Title XII, Division B, Title IV, 123 Stat. 115, 276-79; 467-96.
[xv] AB 80 (Committee on Budget), Section 52, Chapter 12, Statutes of 2020.
[xvi] California Department of Health Care Services Report to the Legislature: Medi-Cal Promoting Interoperability Program Fiscal Year 2018-2019 California Department of Health Care Services Report to the Legislature: Medi-Cal Promoting Interoperability Program Fiscal Year 2018-2019, Prepared by: Office of Health Information Technology August 2019.
[xvii] Hsiao C-J, Hing E. Use and characteristics of electronic health record systems among office-based physician practices: United States, 2001–2013. National Center for Health Statistics data brief, no 143. Hyattsville, MD: National Center for Health Statistics. 2014.
[xviii] Department of Health Care Services May 2020 Medi-Cal Estimate, Regular Policy Change 182, https://www.dhcs.ca.gov/dataandstats/reports/mcestimates/Documents/2020_May_Estimate/M2099-Medi-Cal-Local-Assistance-Estimate.pdf
[xix] SB 840 (Mitchell), Chapter 29, Statutes of 2018, Item 4260-101-001, paragraph 15.
[xx] Public Law No. 114-255. Sections 4001-4008 of Title IV.
[xxi] Title 42 of the Code of Federal Regulations, Section 428.24.