Post HITECH: The Landscape of Health Information Exchange

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INTRODUCTION

For the last eleven years, eHealth Initiative (eHI) has fielded a comprehensive survey assessing the state of data exchange in the United States. Over that time span, data exchange has evolved a great deal. In 2004, few organizations shared health data electronically. In 2009, the Health Information Technology for Economic and Clinical Health (HITECH) Act sought to improve American health care delivery and patient care through a major federal investment in health information technology. As part of HITECH, the State Health Information Exchange (HIE) Cooperative Agreement Program helped jumpstart data exchange by distributing millions of dollars in funding to each of the 56 US states and territories. At the same time, the Centers for Medicare & Medicaid Services (CMS) Meaningful Use Program expanded adoption of electronic health records (EHRs), and other initiatives like accountable care organizations (ACOs) have created a new business case for data exchange.

Funding under the State HIE Cooperative Agreement Program and HITECH expired in 2014, changing the landscape again. Hospitals, health systems, and other provider groups have opted to launch their exchange efforts rather than wait for larger regional or state entities to mature. The current status of data exchange in many states is much murkier. It is in this context that this document presents key findings from eHealth Initiative's 2014 Data Exchange Survey.

BACKGROUND ON RESPONDENTS

Health information exchange (HIE) or data exchange refers to the electronic mobilization of healthcare data across organizations within a hospital system, community, region, or state. HIE can also refer to the entities providing data exchange services (also called health information organizations – HIOs). This survey covers data exchange initiatives under the State HIE Cooperative Agreement Program, community-based or regional HIOs, and private exchange taking place between provider organizations. 125 organizations completed the survey, and an additional 10 partial responses were included in the analysis for a total of 135 respondents.

- Survey respondents primarily represent a mix of 74 community-based HIOs (55%), 24 statewide efforts (18%), 26 healthcare delivery organizations (19%) and the remaining 11 respondents (8%) fell into other categories.

- A majority of respondents have positive views of the State HIE Cooperative Agreement Program, including:

    - Eighty initiatives (59%) view the federal program as increasing the availability of data exchange services.
    - Seventy-four initiatives (55%) believed the program increased the adoption of data exchange services.
    - Fifty-seven initiatives (42%) thought the program helped providers meet the data exchange requirements of Meaningful Use.

- Respondents were mixed on whether the program reduced the cost and complexity of participating in data exchange.

    - Forty-two (31%) agreed the program reduced the cost and complexity of participating in data exchange, thirty-eight (28%) disagreed.

- National networks and collaboratives are emerging forces in data exchange. Forty-nine (40%) respondents participate in DirectTrust and 45 (36%) are connecting to eHealth Exchange.

More information on respondents is available in the methodology section of this report. A list of list of survey respondents is available at the end of this report.

KEY FINDINGS

Overall, operational maturity of health information exchange initiatives has continued to evolve. 106 respondents reported that their organization reached stages 5 (operating), 6 (sustainable), or 7 (innovating) on eHI's HIE maturity scale, an increase of 11 percent since 2013. This has had a significant impact on the types of services now offered. In addition, as the State HIE Cooperative Agreement Program expired in 2014, new revenue sources have taken the place of federal funding. After careful review of the survey results, some key trends emerged. More detail is provided below.

1. **Cost and technical challenges are key barriers to interoperability.** While technical challenges are commonly mentioned, financial constraints are actually the biggest challenge to interoperability. Financial costs of interface development were cited by 74, 59% of respondents, while 48 respondents (38%) selected technical difficulty of building interfaces as their greatest challenge to interoperability.

2. **Regulatory policies appear to have prompted increased use of core HIE services such as Direct, care summary exchange, and transitions of care**. Three-quarters of respondents (101) incorporate secure messaging into their data exchange models. In 81 (61%) organizations, users access data through secure messaging. Seventy-eight (58%) respondents offer a Direct address directory. Transitions of care increased 25 percent since 2013; care summary exchange increased 23 percent since 2013; reporting to immunization registries increased 18 percent.

3. **Advanced initiatives are supporting new payment and advanced care delivery models**. 64 respondents (51%) are supporting an accountable care organization (ACO), 52 are supporting a patient-centered medical home (41%), 21 are supporting a State Innovation Model (SIM) grant (17%), and 12 are supporting a bundled payment initiative (9%).

4. **Sustainable organizations have replaced federal funding with revenue from fees and membership dues.** In 2014, 45 (33%) respondents received enough revenue from dues and fees to completely cover operational expenses. Another 38 (28%) received funding through dues/fees, although additional funding was needed. Forty-one (30%) organizations currently report that dues or fees are their greatest revenue source, and even more believe that dues or fees will eventually be their primary revenue stream (89, 66%). Dues or fees were the most commonly cited replacement for State HIE Cooperative Agreement Program funding (55, 41%).

KEY FINDING 1: Cost and technical challenges are key barriers to interoperability

While electronic exchange of health data appears to be on the rise, interoperability remains one of the biggest barriers. Managing relationships with participants, sustainability, and interoperability remain the key barriers to widespread data exchange. As in 2013, respondents continue to struggle with interface development as they work to stitch together disparate systems.

- 112 respondents (83%) have constructed multiple interfaces, and 18 (13%) have had to construct more than 25 interfaces. The financial costs of interface development (74,

59%) and technical difficulty of building interfaces (48, 38%) were frequently cited challenges to interoperability. Cost is an especially burdensome challenge which may ultimately threaten sustainability. EHR owners (90, 73%) and HIEs (51, 41%) bear the bulk of the costs of interface development.

- More than half of the respondents (64, 51%) reported that getting a consistent and timely response from EHR vendor interface developers was a major challenge, and the most commonly cited solution to the interoperability issue was more standardization in integration solutions and prices from vendors (62, 50%).

- The five most pressing challenges to data exchange are addressing technical barriers (40, 32%), developing a sustainable business model (36, 29%), interoperability with other health IT systems (36, 29%), managing stakeholder expectations about data exchange (29, 23%), and managing stakeholder concerns about privacy and confidentiality issues (25, 20%).

- Commonly cited factors to a successful data exchange effort mirror these challenges: development of an effective sustainability model (67, 54%), common objectives/goals (53, 42%), developing an effective governance model (43, 34%), interoperable health IT (39, 31%), and launching with a critical mass of information that can be useful to participants (32, 26%).

KEY FINDING 2: Regulatory policies appear to have prompted increased use of core HIE services such as Direct, care summary exchange, and transitions of care.

Despite the challenges that respondents face in their efforts to provide seamlessly interoperable data exchange across the US, there are clear indicators of progress. The 2014 survey findings demonstrate a steady increase in core data exchange services, particularly around priority areas supported by financial incentives or regulatory policy. Direct continues to expand as an exchange mechanism for providers and organizations and makes up a large and growing portion of data exchange activity.

- Three-quarters of respondents (101) incorporate secure messaging into their data exchange models. In 81 (61%) organizations, users access data through secure messaging. Seventy-eight (58%) respondents offer a Direct address directory.

- More respondents are using Direct for all given use cases this year.

    - Transitions of care: 65 in 2013 (42%) vs. 86 (66%) in 2014
    - Exchange of lab results: 29 in 2013 (19%) vs. 32 (25%) in 2014
    - Public health reporting: 21 in 2013 (14%) vs. 19 (15%) in 2014
    - Sending information to patients: 12 in 2013 (8%) vs. 17 (13%) in 2014

- Perhaps related to the growing prominence of Direct, 85 respondents (63%) have implemented services to support transitions of care, such as event-based clinical notifications/alerts (e.g. admission/discharge/transfer). The proportion of respondents offering such services increased 27 percent since 2013.

- Exchange around priority areas of Stage 2 of the Meaningful Use Program increased in 2014.

- Transitions of care using Direct (86, 66% in 2014) increased 25 percent.
- 108 respondents (81%) offered care summary exchange as a service in 2014, a 23 percent increase in utilization since 2013.
- 74 respondents (55%) offer reporting to immunization registries, an increase of 18 percent.

KEY FINDING 3: Advanced initiatives are supporting new payment and advanced care delivery models.

Overall, operational maturity continues to develop as users of health IT grow more comfortable with the changing healthcare landscape. As these organizations mature, they can begin looking beyond core services to support more advanced care delivery and payment models.

- 106 respondents reported that their organization has reached stage 5 (operating) or higher on eHI's HIE maturity scale, an increase of 11 percent since 2013.
- 64 respondents (51%) support an accountable care organization (ACO).
- 52 respondents (41%) support a patient-centered medical home.
- 21 respondents (17%) support a State Innovation Model (SIM) grant.
- 12 respondents (9%) support a bundled payment initiative.

KEY FINDING 4: Sustainable organizations have replaced federal funding with revenue from fees and membership dues.

Though the State HIE Cooperative Agreement Program funding expired in 2014, survey data suggest reasons to remain optimistic about the sustainability of data exchange efforts in the future.

- Dues and/or fees for data exchange services are the primary means to fund operations. In 2014, 45 (33%) respondents received enough revenue from dues and fees to completely cover operational expenses.
- 38 respondents (28%) received funding through dues/fees, although additional funding was needed.
- 41 respondents (30%) report that dues or fees are their greatest revenue source.
- 89 respondents (66%) expect dues or fees will eventually be their primary revenue stream.
- 17 respondents (13%) are unsure how they will replace funds from the State HIE Cooperative Agreement Program
- Dues or fees were the most commonly cited replacement for State HIE Cooperative Agreement Program funding (55, 41%).

LOOKING AHEAD

Despite the expiration of funding through the State HIE Cooperative Agreement Program and HITECH, survey data suggest reasons to remain optimistic about the sustainability of data exchange efforts. The long term sustainability of some organizations suggests that certain approaches are meeting market needs. Many organizations appear to have settled on a set of core service offerings and a standard revenue structure. Radical changes in the overall landscape are not evident.

As community, regional, state, or national hubs of patient information, data exchange initiatives are uniquely poised to support population health activities. Indeed, public health is a stakeholder that has already leveraged health information exchanges to obtain more complete and accurate data. Many are already using exchange to support reporting to disease, immunization, and reportable event databases. Likewise, the growing prevalence of alerting/notification services may be linked to the need for accountable care organizations and other advanced care delivery models to better track their patient panels as they interact with the healthcare system. As more organizations mature, these types of service offerings will continue trending upward in the future.

In the meantime, organizations are encouraged to work collaboratively to overcome remaining challenges. The rapid growth of both DirectTrust and eHealth Exchange is a promising step toward defining a floor for data exchange capabilities nationwide. Other collaborative efforts, such as the Mid-states Consortium and National Association for Trusted Exchange (NATE) are tackling the many different policies impacting exchange across state lines. With most of the current efforts taking place at the state or national level, we recommend that organizations work closely with others at the regional and community level as well, to avoid creating an environment characterized by individual pockets of data exchange.

To help address some of the ongoing barriers to data exchange and interoperability, eHealth Initiative is convening the most influential leaders from across the healthcare spectrum to discuss critical issues related to the use of data exchange and technology to improve healthcare for all Americans. On-going inputs from these discussions are embodied in the *2020 Roadmap.* eHealth Initiative is in a unique position to spearhead this effort, as the only independent, non-profit, multi-stakeholder coalition dedicated to health IT and quality. Over the next 12 months eHealth Initiative members will work hand in hand with leading public and private sector organizations to create consensus on the future of health IT.

METHODOLOGY

The 2014 Annual eHealth Initiative Data Exchange Survey was launched on August 18, 2014 and closed on September 19, 2014. The survey was announced through newsletters, mailing lists, and meetings to a wide range of audiences in order to elicit responses from national, state, regional, enterprise, and community-based initiatives working on health information exchange. Reminder emails were sent each week to 267 organizations comprising eHI's list of data exchange initiatives derived from previous survey respondents. Responses to the survey were self-reported by participants and not reviewed for accuracy.

A total of 135 initiatives were included in the results. Of the 135 respondents included in this year's survey findings, 107 (79%) also completed a survey response in 2013.

Repeated attempts were made to contact all of the organizations that had not responded to the survey. eHI staff sent emails to individuals listed as organizational contacts and made follow-up phone calls to those organizations. Some outreach attempts were unsuccessful and it was unclear why an organization chose not to respond to the survey. In some cases (7), we were able to confirm that an organization had closed or consolidated. In others (6), the primary point of contact indicated that they were too busy to complete the survey. Ongoing operations at the remaining organizations were confirmed through web and news searches.

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2014 LIST OF SURVEY RESPONDENTS

- Adventist Healthcare
- Alabama One Health Record
- Alaska eHealth Network
- Alliance Medical Center
- Arizona Health-e Connection (AZHeC)/Health Information Network of Arizona (HINAz)
- Arizona State Physicians Association Connected Community
- Arkansas State Health Alliance for Records Exchange (SHARE)
- Atlantic Coast HIE/Memorial Healthcare system
- Atrius Health
- Baycare Health System
- Behavioral Health Information Network of Arizona
- Bowlink Technologies
- Camden Coalition of Healthcare Providers (Camden HIE)
- CareAccord (Oregon)
- Central Illinois HIE
- Central Oregon HIE
- ChathamHealthLink
- Children's IQ Network®
- Citrus Valley Health Partners HIE
- ClinicalConnect
- CliniSync (Ohio)
- Coastal Connect HIE
- Colorado Regional Health Information Organization (CORHIO)
- Community Health Information Collaborative (CHIC)/HIE-Bridge
- Connect Healthcare
- Connecticut Electronic Health Data Exchange
- ConnectVirginia
- CRISP
- CurrentCare (Rhode Island)
- DC HIE
- Delaware Health Information Network (DHIN)
- Douglas County Hospital
- East Tennessee Health Information Network (eTHIN)
- East Texas Medical Center Regional Healthcare System (FirstNet Exchange)
- Electronic Health Network
- Emory Healthcare
- Florida Blue
- Florida HIE
- Franciscan Northwest Physicians Health Network
- Genesis Health System
- Georgia Association for Primary Healthcare
- Georgia Health Information Network (GaHIN)
- Great Lakes Health Connect
- Greater Dayton Area Health Information Network
- Greater Houston Healthconnect
- Greater New Orleans HIE
- Group Health Cooperative
- GulfCoast Health Information Exchange
- Gundersen Health System
- Hawaii HIE
- HealthBridge
- Healtheconnection
- HEALTHeLINK
- HealtHIE Nevada
- HealthInfoNet
- Healthix
- HealthShare Bay Area
- HealthShare Exchange of Southeastern PA (HSX)
- HIE Networks
- Hoag Health System
- Huntington Hospital
- Idaho Health Data Exchange
- Illinois HIE
- Illinois Rural HealthNet/Northern Illinois HIE
- Indiana Health Information Exchange
- Inova Health System
- Intermountain Healthcare
- Iowa Health Information Network
- Jefferson Health Information Exchange
- Kaiser Permanente
- Kansas Health Information Network (KHIN)
- Kentucky HIE
- Keystone HIE
- Lewis and Clark Information Exchange (LACIE)
- Los Angeles Network for Enhanced Services (LANES)

- Louisiana HIE
- Marana Health Center
- Maricopa County Correctional Health Services
- Massachusetts Health Information Highway
- Mayo Clinic
- Medical Information Network - North Sound
- MedVirginia
- Michiana Health Information Network
- Michigan Health Information Network Shared Services
- Mississippi Health Information Network
- Missouri Health Connection
- MyHealth Access Network
- Nebraska Health Information Initiative (NeHII)
- New Hampshire Health Information Organization
- New Mexico Health Information Collaborative
- North Coast Health Information Network
- North Dakota Health Information Network
- Northeast Valley Health Corporation
- NYU Langone HIE (NYU Health Connect)
- OCPRHIO/OCUnites
- Partners Healthcare Information Systems
- Paso del Norte HIE
- Pennsylvania eHealth Partnership Authority
- Pioneer Valley Information Exchange
- Primary Care Coalition of Montgomery County/Metro DC HIE (MeDHIX)
- Quality Health Network
- RAIN Live Oak Health Information Exchange and Telemedicine Network
- Redwood MedNet
- Rio Grande Valley HIE
- Rio One Health Network
- Rochester Regional Health System (u.net Connect)
- Rochester RHIO
- SAFEHealth
- Salem Memorial District Hospital
- San Diego Health Connect
- San Joaquin HIE
- Santa Cruz Health Information Exchange
- South Dakota Health Link
- Southeast Texas Health Systems/SETHS Operated Provider HIE (SOPHIE)
- Southern Tier HealthLink
- St. Mary's Hospital
- Statewide Health Information Network of New York (SHIN-NY)
- Strategic Health Intelligence (The HIE)
- SunCoast RHIO, Inc.
- Tampa Bay RHIO
- Tampa General Hospital
- Tapestry HIE (Highmark)
- Texas Health Resources
- Tiger Institute for Health Innovation
- Trenton Health Team
- UnityPoint Health (HealthNet Connect)
- University of Washington Medicine
- Upper Peninsula HIE
- Utah Clinical Health Information Exchange
- Vale-U-Health RHIO
- Virtua Health
- VITL (Vermont)
- Wellport HIE/Whittier IPA
- West Georgia Information Network
- West Virginia Health Information Network
- Wright State HealthLink