Future Sustainability of the Florida Health Information Exchange

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EXECUTIVE SUMMARY

Florida began the journey to health information connectivity in 2004 under Governor Jeb Bush. Initially these efforts were funded by grants, but due to the downturn in the economy, the state was unable to support growth in 2008. The American Recovery and Reinvestment Act (ARRA) of 2009 provided funding to further expand health information exchange efforts across the country. As a result, Florida was now able to move forward and make progress in information sharing. Harris Corporation was contracted to provide some basic services to the health care industry in 2011. Since then, the Florida HIE has begun to take shape and information sharing is occurring. The ARRA funding will end in 2014 and the Florida HIE must have a plan to survive into the future. This plan must address challenges such as the recruitment of new users, integration of new services, and ultimately long term sustainability.

Keywords: *American Recovery and Reinvestment Act (ARRA), Health Information Connectivity, Health Information Exchange (HIE), Information Sharing, Regional Health Information Organization (RHIO)*

ORGANIZATION BACKGROUND

Efforts toward building a health information exchange (HIE) in Florida began in 2004. The Agency for Health Care Administration (AHCA) laid the foundation for a statewide HIE by organizing health care stakeholders and providing initial funding to local Regional Health Information Organization (RHIO) projects through its grants program. Florida is working to achieve a secure and sustainable approach to health information technology adoption and exchange resulting in better health care outcomes with lowered total costs. The development of a HIE that protects privacy and aligns with national exchange standards is the goal of AHCA. Leveraging existing networks to best achieve widespread adoption is one way to achieve the goal. In 2010, the Office of the National Coordinator for Health Information Technology (ONC) provided grant funds through ARRA to significantly advance Florida's plans to build a statewide health information infrastructure. The provision of sustainable services to meet the meaningful use criteria established by ONC is an important focus of the HIE.

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Key services implemented initially included:

- A patient look-up service.
- A provider directory.
- Secure messaging.
- Public health reporting.

This case study aims to describe the historical journey of the HIE in the State of Florida from 2004 to the present. Significant financial resources from the stimulus package in 2010 have allowed the HIE to move forward by providing the key services above necessary for sharing of patient data. Event Notification Service has also been added to the existing menu. As ONC funding comes to a close, the Florida HIE must now rely on sustainability plans to remain viable. In addition to describing the current structure and services available, we will chronicle the ongoing efforts to develop a sustainability plan for the HIE.

SETTING THE STAGE

Health Information Exchange within the State of Florida began as an Executive Order from Governor Jeb Bush in May, 2004. Governor Bush established an advisory board (Governor's Health Information Infrastructure Advisory Board [GHIIAB]) to advise AHCA in the creation and implementation of a Florida Health Information Technology (HIT) infrastructure (Greaves et al., 2007). In addition to supporting local data exchanges (RHIOs), the state was working on development of an overarching network to bring the local exchanges together, which has become the current HIE.

Florida Health Information Network

The Florida Health Information Network, Inc. (FHIN) was created in 2005 to implement a statewide infrastructure, connecting the RHIOs and other networks in the state. The vision of the FHIN was to provide a secure network for exchange of necessary medical information to improve continuity of care (Rosenfeld, Koss, Caruth & Fuller, 2006). The FHIN Grants Program provided initial support of $2 million to advance electronic health information exchange in local communities (Takach & Kaye, 2008). Assistance was provided to the new RHIOs through the following: planning grants to develop strategic plans; implementing grants to demonstrate exchange of information between at least two (nonaffiliated) provider organizations; and, training grants to support provider use of EHR systems. The FHIN grants program required a dollar for dollar match from the RHIOs. It was felt that the matching program requirements improved the RHIOs chances of long term success and sustainability.

The initial goal of the FHIN was to provide a data set consisting of hospital inpatient and outpatient encounters including laboratory results and diagnoses, as well as medications and demographic information (Rosenfeld, et al., 2006). Claims data for Medicaid patients would also be included, as well as Department of Health (DOH) public health information.

In 2007, the FHIN released a White Paper, Architectural Considerations for State Infrastructure (Greaves, et al., 2007). This paper proposed that the FHIN would enable health care providers to access a patient's medical records from any provider database connected to the network, regardless of location. Collaboration among the public and private sectors, state and local governments, providers, employers, consumers, health plans and payers would enable connectivity among RHIOs and other health information networks in Florida via a central server.

Recommendations from this document provide more detail as to how the FHIN planned to address technical concerns which were initially raised by the GHIIAB (Greaves, et al., 2007):

- **Central Authority for Technical Standards:** Setting standards and certification requirements including state-level security specifications.
- **Network Security:** Secure and encrypted communications along with detailed logs

would be kept by both the requesting and responding entities.

- **Authentication of Users:** The state server would manage the transactions between the RHIOs, state agency databases, and other health information sources. The FHIN would credential physicians in RHIOs as well as those directly connected to the FHIN with the use of digital signatures and role- based authentication.
- **Patient Consent:** Use of a statewide patient authorization system with the use of a personal identification number (PIN) to allow the patient to control who accesses the information.
- **Master Patient Index:** Use of a common set of fields for identification including name (first and last), phone number, date and location of birth, or a personal identification number.
- **Minimal Clinical Dataset:** Specific data fields identified by each RHIO which would be available to the requesting physician upon request.

This undertaking met with obstacles that seriously impacted its activities. One of the major obstacles encountered in implementing a statewide network was legal and regulatory issues surrounding existing privacy laws (Rosenfeld, et al., 2006). To provide consent for access to information, patients would have a PIN to provide to the caregiver at the time of the encounter. Unlike other state exchanges and RHIOs nation-wide, the FHIN specifically recommended against an opt-in or opt-out consent model initially due to the additional costs of implementing such a system. For emergency purposes, physicians were to be allowed to "break the glass" and view a patient's record (Greaves, et al., 2007, p. 40). This would have required an audit trail and a letter to the patient notifying him/her of this access. Significant issues were found with each of these process steps and designs.

In March 2010, the Office of the National Coordinator (ONC) announced the State Health Information Exchange Cooperative Agreement Program awardees as part of the Health Information Technology for Economic and Clinical Health (HITECH) Act. Florida received $20,738,582 (HHS, n.d.). Following an Invitation to Negotiate, this federal funding resulted in Florida awarding a contract to Harris Healthcare Solutions to create the Florida HIE infrastructure.

Through the designated state entity (AHCA), Florida looked to Harris to create a Florida Health Information Exchange Infrastructure under the ONC funding. The infrastructure was to include open source technologies where appropriate and give the highest priority to privacy, security and interoperability with existing and future electronic patient medical records. The patient lookup service will enable participating users to locate and retrieve patient records. The structure of the HIE will be a network of networks without a centralized master patient index. An authoritative provider directory will be established for all providers to facilitate communication between physicians. Secure messaging to facilitate sharing of clinical summaries (a meaningful use criterion) will be provided. This resource for providers will use national standards to ensure security. Public health reporting will be provided in conjunction with the Florida Department of Health.

CASE DESCRIPTION

The American Recovery and Reinvestment Act (ARRA) provides for incentive payments to hospitals and physicians who engage in the meaningful use of electronic health records. Meaningful use is a set of standards meant to ensure that EHRs are not only purchased, but utilized for certain key functions. The HIE meaningful use standards aim to provide health records for the treating physician (from a prior episode of care) to improve quality of care and coordination of care, as well as patient access to health information. HIE services must take into account the scope of data exchange and location of the records.

In Florida, the HIE is federated, meaning data is housed locally, not in a centralized format (AHCA, 2011). However, data can be linked together across the multiple RHIOs (Rosenfeld, et al., 2006) The HIE will serve as the location for patient information exchange but the provider will maintain the data. This will allow providers to query for patient records across various participating networks.

See Figure 1 which shows the nodes on a network that are connected through the HIE.

Patient Lookup Services

Patient Lookup enables the search and retrieval of a patient's health information, such as labs, medication history, and discharge summaries, from different sources ("pull" function). AHCA recognizes that the majority of patient care is local, and that the goal of local HIE efforts will be connecting providers with local sources of patient data. In order to add value to the local HIE and help them achieve critical mass and provider adoption, the Florida HIE will provide access to and by the Florida Department of Health (DOH). This includes the county health departments who provide primary care treatment to many Floridians (AHCA, 2011). The coordination of care for these patients, including referrals for specialty care and laboratory tests, will be accomplished through the local HIE.

The typical workflow for Patient Lookup Services is illustrated in Figure 2.

If the provider has a master patient index (MPI) in place, the Florida HIE will provide an Express Lite option which will allow the provider to connect directly to the FHIN. If the provider does not have an MPI in place, then a different option is available, called Express, which the provider can use to connect to the FHIN or potentially create its own HIE (Shim, 2011). With either Express Lite or Express, a Connect Gateway is utilized for exchange of data over the Internet.

Both Express and Express Lite will need to connect to appropriate provider systems to create and package information conforming to the required standard profiles. These profiles are typically unique variations of the base standards such as the Clinical Document Architecture (CDA), continuity of care document (CCD), continuity of care record (CCR) and HITSP C32 which builds upon the HL7 CCD component.

Provider Directory

A provider directory is required by the State HIE Cooperative Agreement. It must allow providers

Figure 1. Multiple options for health information exchange

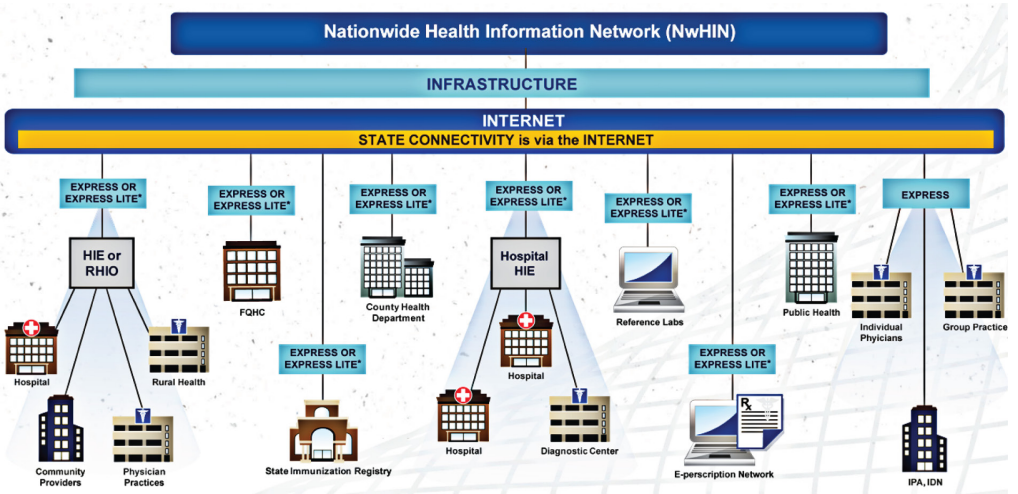
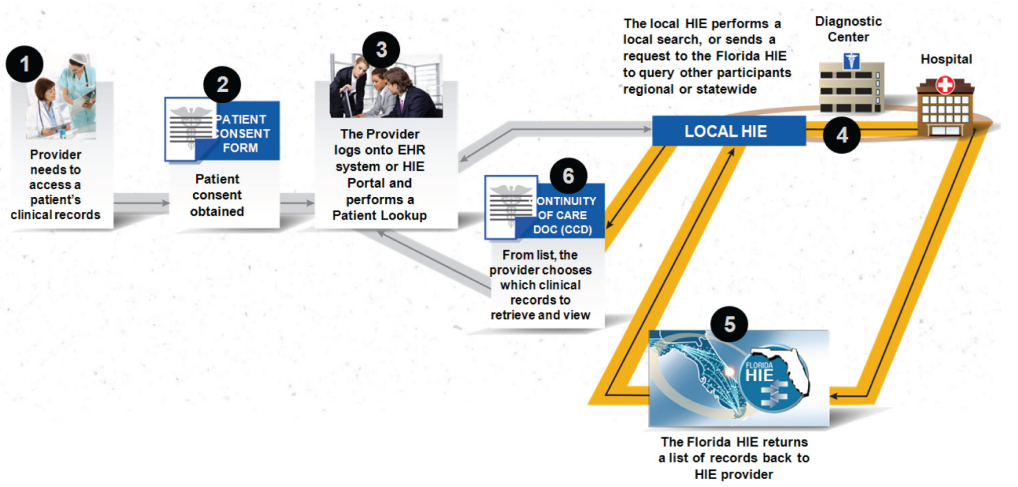


Figure 2. Patient lookup service



who are authorized (network authentication) the ability to route various documents within the HIE. The DOH maintains a physician licensing database that is updated daily (AHCA, 2011). This is the basis for the provider directory that will also include healthcare organizations participating in the HIE. The ability to facilitate physician to physician messaging is the ultimate goal.

Direct Messaging Services

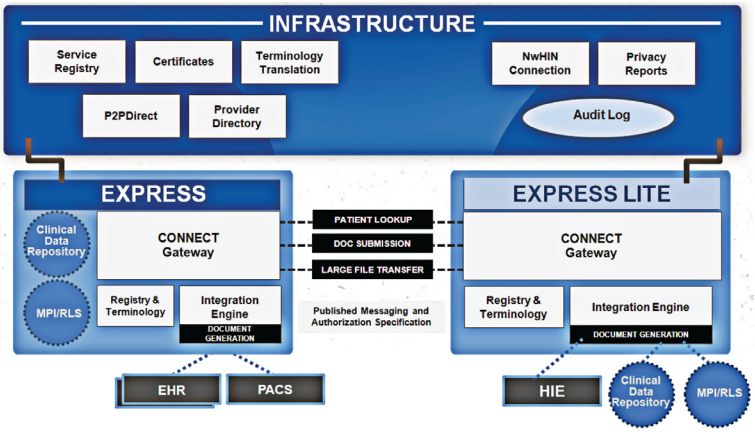
The Florida HIE supports a Direct Secure Messaging (DSM) service to all subscribers to support communication between physicians or organizations for transition of care or referral purposes. DSM can also support the provision of clinical documents or information in response to medical information requests. The service integrates with the provider directory to easily locate and communicate with the other Florida HIE subscribers. Supported national and best practice security standards enable the transmission of encrypted information directly to trusted recipients via the Internet. Harris has developed P2P Direct to meet the ONC Direct specifications for secure messaging in Florida (Shim, 2011). The Direct specifications represent a national standard model meant to streamline transmission of encrypted health information directly to known trusted recipients over the Internet.

The service is hosted at the Florida HIE data center and can be accessed securely by subscribers using a web enabled client. In this manner, providers are able to meet the requirements of meaningful use incentives and share protected health information electronically with other providers with HIPAA compliance. In the past, this may have been done by phone, fax or mail. DSM is more efficient than these methods and facilitates continuity of care while reducing duplicate services (Saini, 2013).

Since its initial release, DSM has been enhanced to include mail forwarding, mail archiving, read receipts, expanded capability for additional users, and other administrative efficiencies (AHCA, 2013[c]). A new service, known as HIE Direct, combines web mail capabilities of DSM with Patient Lookup options to allow authenticated practitioners to access patient information at the point of care. This provides an efficient way to request and receive patient information, and provide timely care for patients (News Bytes, 2013).

Figure 3 provides an overview of the Florida HIE services.

Figure 3. Platform provides flexibility for participants



Public Health Reporting

Public health reporting is done in coordination with the Florida Department of Health and Florida stakeholders. Secure messaging enables alert reporting to targeted providers, and also enables the providers to easily submit required data to public health authorities (AHCA, 2010). This allows for efficient and timely notification of communicable disease and other disease outbreaks which can in turn allow for increased public awareness.

Event Notification

Improving the coordination of care and reducing hospital readmissions rates are two areas of focus since the passage of the Affordable Care Act in 2010. Hospitals and physicians are tasked with keeping patients from being readmitted or face significant financial penalties. In the current fragmented system, it is common for a primary care physician to be unaware of a patient's hospitalization until the patient self-reports the event which maybe weeks or even months afterwards. This lack of care coordination can lead to inadequate follow up which results in sicker patients and costly hospital readmissions. Ideally, real time notification of emergency room visits and inpatient admissions and discharges from hospitals will allow for coordination of services to begin quickly.

In response to this issue, in 2013 the Florida HIE developed the Event Notification System (ENS) which sends Admit-Discharge-Transfer (ADT) notifications to participating physicians and/or health plans when a patient is admitted/discharged from a hospital system, or when the patient is seen in the Emergency Department. These notifications flow out of the hospital system to the HIE master patient index where patients are matched with their HIE participating physician and/or health plan and the notification is sent electronically; patient information is not stored centrally. Notifications include a patient's demographic information, chief complaint, and facility where the event occurred. Participating physicians and/or health plans are required to maintain an accurate list of patients for this system to be successful, but the Florida HIE has made this process as easy as possible by allowing patient lists to be uploaded in any file type (AHCA, 2013[d])

The ENS system has many stakeholders that can benefit from this sharing of data including patients, hospitals, and physicians. A similar system has been deployed in Maryland where early reports indicate that patients enrolled in the ENS system have fewer readmissions than a similar control group (AHCA, 2013[d]). Health

plans benefit greatly from this new technology as they are better able to provide care coordination and case management for the sickest of patients. Arguably, hospitals and physicians have the most to gain from the development of the ENS system from a financial perspective. With the addition of two CPT codes to cover transitional care management as well as the Medicare disincentive for hospital readmissions, the ability to provide continuity of care is key to their financial well-being.

CURRENT CHALLENGES

Sustainability of the Florida HIE when the ONC funding ends is a high priority for program administrators. Providing needed services to stakeholders is imperative, but adoption and usage of the HIE services by additional participants is essential for continued success. As more providers onboard, costs may decrease through economies of scale however, users will be looking for an acceptable return on investment for HIE services.

Pricing Strategy

A value proposition must include a viable pricing strategy to maintain current users and attract additional users. As of October 1, 2013, for Patient Lookup, health care provider organizations are charged $39,000 plus $14 for each acute care bed in the facility if they join prior to July 1, 2014; $49,000 if after the July deadline. In addition, maintenance fees of $25,000 will be assessed annually to preserve the quality and integrity of the HIE. Health care providers will not be charged for using Direct Secure Messaging. Health plans not participating in the ENS will be charged annual fees for DSM based on the number of members: less than 120,000 members, $29,000; 120,000 to 300,000 members, $39,000; and, more than 300,000 members, $49,000. For Event Notification Service, an annual fee of $75,000 will be charged to health plans for a patient roster of 50,000 or fewer; and $25,000 for each additional patient roster up to 100,000 (Florida HIE, 2013).

Recruitment of New Users

AHCA is actively working to increase awareness of the Florida HIE through outreach activities. Through these efforts, providers are being educated about the services being offered as well as options for participation and advantages of participation including the meaningful use criteria as mentioned above. In particular, rural providers and providers serving a high proportion of Medicaid or uninsured patients will be targeted for the DSM and/or PLU services (AHCA, 2013[b]).

Consumer engagement is another area for education and outreach. AHCA hopes that educated consumers will be willing to authorize their provider(s) to use the HIE and share their information. Because providers will have a more complete record through the DSM services (as well as availability of information through the PLU), a more complete patient record can be compiled which may in turn be shared with patients through a personal health record or patient portal. This type of communication with the patient may meet additional meaningful use requirements.

Demand for Services

One key component to a sustainable HIE, is an increase in the demand for the services they provide. As regulations regarding the Affordable Care Act are enacted, the sharing of information will become more important to the business model for all healthcare entities. For example, Accountable Care Organizations (ACOs) cannot function without the ability to share information across their region to track patients healthcare encounters. This will drive up the demand for HIE services and cement the importance of HIE membership. (Frankel, Chinitz, Salberg & Reichman, 2013) According to Vishal Agrawal, president, Harris Healthcare Solutions, "Harris is enabling health care providers to reduce costs and improve health care outcomes for patients by giving providers the most up-to-date and complete medical record possible at the point of care" (Space Coast Business, 2013).

In addition to the ACA, other regulatory changes have the potential to increase the demand for HIE services. As previously mentioned, the Event Notification Service (ENS) can increase continuity of care and decrease costly hospital readmissions which will prove a powerful motivator as new reimbursement models demand improved management of readmissions. This improved continuity of care has also been cited as an expectation for physicians using a health information exchange (Patel, Abramson, Edwards, Malhotra & Kaushal, 2011). For the Florida HIE, this mechanism provides low startup costs because of the existing infrastructure, with maximum return as the need for this information increases. As noted, the Direct Secure Messaging service meets meaningful use criteria for Medicare and Medicaid EHR reimbursements under the HITECH Act.

Integration of New Services

Future services from the HIE may include the ability to upload certain patient information into a personal health record or provider portal. Other data aggregation services include providing information for Social Security Disability requests and scientific research with accompanying Institutional Review Board approval. Additional plans for the ENS include adding ambulatory providers and providing readmission reports (ENS Pilot Update, 2013).

Implementation of the DSM in Florida has established the state as a Health Information Service Provider (HISP) (Spacecoast Business, 2013). This allows physicians in different states to send data back and forth. As such, Florida HIE has expanded connections of the DSM into the neighboring states of Alabama and Georgia with additional connections in process. The ability of providers to send secure messages across state lines broadens the reach of the HIE for citizens who live near the borders of these neighboring states. (AHCA, 2013[a]) In addition, Floridians who make up the large snowbird population and residents who must relocate during hurricanes can benefit from this capability of shared information (Spacecoast Business, 2013).

CONCLUSION

There were many challenges in the startup of the Florida HIE. HITECH brought funding which enabled the HIE project to launch, but creating a business model for sustainability must now be the priority to maintain and grow the HIE into the future. Therefore, more providers will need to onboard to increase the network size and strength. By looking for unmet needs for inclusion into the service menu, the Florida HIE has the opportunity to attract these additional users. One strategy has been to reach out to county health departments for more participants. Those participants are then asked to provide their regular contacts and the Florida HIE will then reach out to those providers to continue to expand the network locally (Prestigiacomo, 2012). This type of local networking provides increasing numbers of users in diverse geographical regions.

As the Florida HIE provides additional service options, sustainability will continue to strengthen. The HIE actively works with stakeholders from the State of Florida, Harris Corporation and prospective connected healthcare organizations to solve the issues that arise within the network. In addition, they look for ways to provide value and services to meet regulatory as well as patient care needs. By promoting health IT adoption and exchange, the Florida HIE aims for better healthcare outcomes and lowered total healthcare costs for all citizens.

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