



**Financing Research and Framework
Development for a
Health Information Exchange
PAeHI White Paper Project
Executive Summary -- November 2010**

The passing of the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH) has resulted in a continued increase in the number of Health Information Exchanges (HIEs) across the United States. The Pennsylvania eHealth Initiative (PAeHI) remains active in its role “to bring together Pennsylvania’s health care and business stakeholders to develop a vision and a plan for the future of health information technology (HIT) and the secure exchange of health information in Pennsylvania”. How to maintain financial sustainability is a major question raised by community, regional, and state-level HIEs. PAeHI’s 2008 White Paper titled “Building a Sustainable Model for Health Information Exchange in Pennsylvania” laid the foundation for financial sustainability discussions and actions. Recognizing its ongoing importance, PAeHI has now completed this second White Paper to further inform Pennsylvania stakeholders about HIE financial sustainability models deployed and contemplated nationally and in Pennsylvania. Key areas addressed within the White Paper include trends and demographics; approaches for thinking about sustainability; prior planning efforts by the Pennsylvania Health Information Exchange (PHIX) and PAeHI; interview findings with leaders from 11 leading national HIEs on their models and experiences; findings from 26 representatives from 13 Pennsylvania stakeholder groups; current Pennsylvania HIT/HIE initiatives; an assessment of opportunities; and a possible go-forward strategy.

National Changes in Health Information Exchange

With the passage of the 2009 HITECH Act and the Health Care Reform Act in 2010, health information exchange has received the funding and prominence needed to bring HIE exchange to a new level of activity with related initiatives to drive toward Meaningful Use of EHRs and HIEs. Key initiatives include EHR adoption incentives for hospitals and clinicians that achieve Meaningful Use goals; the formation of the Regional Extension Centers for physician adoption; expansion of workforce education and training; development of state-level HIEs; demonstration models of promising practices (Beacon Communities); and advanced research. Nationally, there are close to 250 reported HIEs in the country of which 18 are financially self-sustaining. This suggests that, finally,

after several years, HIEs can be self-sustaining without grant funding and that the benefits of HIE are being demonstrated.

Impact of Pennsylvania Demographics on HIEs

Many of the state demographics support the formation and sustainability of HIEs. Pennsylvania has a large, relatively prosperous population compared to other states enabling HIEs to more easily achieve economies of scale. Pennsylvania has many medium- to large-size health systems, several with national reputations that have already achieved electronic adoption. This positions them well for data exchange. Multiple private health insurers and Medicaid cover 78% of the population with Medicaid representing 16% of the population. Medicaid and several of the state-oriented health plans have already demonstrated strong leadership in transforming health care through health information technology and exchange. This suggests several funding sources for HIEs in the state.

Other factors are more complex. There are many small hospitals in the state with 84% of total hospitals having less than 300 beds and 47% having less than 100 beds. Although small hospitals have fewer resources to become electronic and connect to an HIE, their need for HIEs with low-cost, easy-to-use solutions is significant. This is also true of the estimated 3,000 physicians in small, 1–2 physician-independent practices and approximately 2,300 physicians in rural areas. Geographies with a high percentage of small practices and rural areas typically are more challenged with initiating health information exchange.

Despite the large private insurer base in the state, the majority of the private insured covered lives are self-insured large corporations. Many of these have a national or international orientation and may not see the value in HIE as readily. The insurers of fully insured plans serve specific regions of the state, so there may be as much interest in funding local, community, and regional HIEs as in funding statewide initiatives.

Current Pennsylvania Activities in HIE

There has been a strong interest in health-care reform, health information technology, and health information exchange at the state-level since Governor Rendell established the Pennsylvania Governor’s Office of Health Care Reform (GOHCR) in 2003. Subsequently, GOHCR published a comprehensive roadmap to contain costs while improving affordability, access, and quality of health care in Pennsylvania titled “Prescription for Pennsylvania” (Rx for PA) in 2007. This roadmap identified health information exchange (HIE) as critical for improving the quality and efficiency of health care. Since then, Pennsylvania Health Information Exchange (PHIX) has developed a strategic and operational plan to implement a state-level HIE using \$17.1 million in funds from the Office of the National Coordinator (ONC).

From the PHIX strategic plan, PAeHI interviews, and the formerly referenced 2008 PAeHI White Paper, we know there are many HIT and HIE initiatives around the state. In addition to PHIX, there are at least 12 HIE initiatives including hospital-based, community and regional HIEs in operation or in the planning stages. There are at least nine current and emerging initiatives related to public health. Medicaid is in the process of developing plans to engage the state health care providers and patients through PHIX. Although there are many quality initiatives in the state, four were specifically identified for excellence, national recognition, and scope.

The state has the most aggressive broadband deployment goals in the United States and plans for every city, town, and village to have access to broadband services by 2015. In 2010, six different initiatives received a total of \$130.2 million in grant funding to expand broadband and telemedicine. This includes \$99.7 million to establish a 1,700-mile fiber network and provide affordable broadband services across the state.

Basics of HIE Financial Sustainability

Although HIEs vary widely, there is increasing clarity on what characterizes HIEs that are on the path to sustainability or already sustainable.

Typical participants in an HIE—Most initial HIEs begin with data exchange between key providers that utilize common data to treat shared patients. Many of initial HIEs start with hospitals that house the data and physicians that use the data. HIEs also include the providers along the continuum of care who can join as standalone institutions or as a network. Public health, Medicaid, and other state agencies can also connect. Nationally, more HIEs are including a personal health record as an option for patients without other solutions. Some communities and states have plans to connect to National Health Information Network (NHIN). Many other types of entities can and do participate in HIEs.

Typical Core Functions of an HIE—Today, most HIEs in Pennsylvania and around the country provide, plan to provide, or are considering the following core services: secure clinical messaging (the exchange of data), inquiry (the ability to look up key clinical and administrative data), a Web-based EHR and ePrescribing (for those without other solutions), public health connectivity (reportable conditions and alerts), and direct data feeds through the HIE to EHRs, databases, and registries. Some regions decided to provide Web-based EHRs and ePrescribing to ensure that physicians and small hospitals can qualify for Meaningful Use incentives. Moving in a different direction, some state-level HIEs are minimizing the core functions they are offering preferring to provide the infrastructure to move data from one HIE within the state to another.

Typical HIE Technical Infrastructure—Although there is no one blueprint for the architecture of an HIE, there are clear options. More narrowly focused HIEs such as provider-based personal health records can do well with a Distributed Media Model such as when a patient is given a CD by the physician to update a personal health record. A Peer-to-Peer Model is commonly used with a hospital portal providing the hospital's patient data to physicians at remote locations such as their practice sites. Larger HIEs (such as community/regional or state-level HIEs), with many participating stakeholders, usually have a technical infrastructure with more features such as a Federated/Record Locator Service Model, a Centralized Warehouse Model, or a Hybrid Model that enable data exchange and data access across multiple organizations. The Federated/Record Locator Model and the Hybrid Model are the most popular because of the relative low cost and the minimization of political complexity that goes with a jointly shared repository in the Centralized Warehouse Model.

Simple Framework: Comparing HIEs and Impact on Financial Sustainability

There are three primary types of HIEs that most states are trying to reconcile: IDNs, community/regional-level HIEs, and state-level HIEs. Presumably, all three types of HIEs will coexist and can be financially sustainable if their unique differences and complementary roles are understood.

Integrated delivery networks (IDNs)—IDNs are usually organized by one institution such as a hospital to connect its physicians and other provider partners. Examples are Pinnacle Health System HIE and Doylestown Hospital. IDNs are growing rapidly in the state as a result of the HITECH Act. Also, hospital vendors are well equipped to set up such networks, and an IDN ensures that hospitals and physicians can participate in Meaningful Use incentive opportunities. Usually, the bulk of the costs are absorbed by the major institution.

Community/regional HIEs—This usually describes a multi-stakeholder data exchange, organized around one or more medical referral regions with a multi-stakeholder governing body. Fees are paid by the stakeholders based on benefits received with startup funding usually coming from key stakeholders or outside funding sources such as grants. Some of the HIEs outsource their HIE infrastructure to other vendors or HIEs while keeping governance, outreach, and training local. Geisinger's KeyHIE and UPMC's HIE, the largest HIEs in the state, are blended IDN/Regional HIEs. They have the size and reach of regional HIEs but maintain many aspects of the governance and funding models of IDNs.

State-level HIEs—This describes an HIE that is defined by the state geographic boundaries, not by the naturally occurring referral region. There were few functioning state-level HIEs in the United States prior to the HITECH Act. Three known state-level HIEs are Utah Health Information Network (UHIN),

Delaware Health Information Network (DHIN), and Colorado Regional Health Information Organization (CORHIO). Since the HITECH Act, all states have been funded by the federal government to plan and implement a state-level HIE with requirements to collaborate with state and federal agencies, including Medicaid and Public Health, along with other health-care stakeholders in the state. In addition to building a data exchange infrastructure, state-level HIEs are responsible for addressing barriers to HIE adoption around privacy and security, standards, and legal issues with bordering states. PHIX has been designated as the state-level HIE in Pennsylvania.

State-level HIEs are well positioned to access and distribute state and national data from such sources as Medicaid, public health, national labs, national health plans, and more. They are a natural vehicle for state and federal funding and can serve as a vehicle for HIEs to connect to the NHIN for those providers not choosing to do so directly. They can provide direct HIE services to providers that are not otherwise served by IDNs and community/regional HIEs. In addition, the state HIE plays an important policy role in reducing the barriers to exchange. Financial sustainability models can take advantage of economies of scale and spread the costs of the HIE over

Several fundamental factors contribute to financially sustaining health information exchange.

Table 1: HIE Comparison

HIE Comparison			
Sustainability Factors	IDNs	Community/Regional HIEs	State-Level HIEs
Delivery of care around Medical Referral Regions (MRRs)	✓	✓	
Speed to critical mass	✓	✓	
Physician participation	✓	✓	
Economies of scale supported via a “low fees incurred by many” model		✓	✓
Ability to connect to disparate entities		✓	✓
Fees based on benefits received and numerous potential fee mechanism options		✓	✓

The financial sustainability implications for each type of HIE vary. Sustainability for IDNs is achievable due to low costs and their natural constituencies; potential for improved coordinated care, quality, and efficiency; and high participant value and benefits. However, IDNs will have difficulty scaling over time for the bigger wins in quality and value that requires more data from external sources.

Community/regional HIEs have a natural constituency; multiple participating stakeholders; the opportunity for big gains in coordinated care, quality, safety, and efficiency; and clear benefits to each stakeholder, which can be the justification for fee income. Communities are also well positioned to receive grants, and they can scale to meet future quality and value needs of the community. Community/regional HIEs can achieve sustainability with diligent planning; however, community/regional HIEs are complex to launch because of multiple participants. Planning must include a determination of the region’s capacity to pay based on specific community/regional factors such as population, insurance coverage, patient demographics, size of hospitals and IDNs within the community/region, physician market (independent versus employed physicians and specialty versus primary care), institutional leaders, and so on.

many stakeholder groups. The business case is difficult to make with some stakeholders, however, who are oriented toward the community, regional, or national levels. This includes, among others, many of the providers and payers. As a result, financial sustainability for state-level HIEs requires the development of a more complex financial model that is reflective of the various stakeholder needs and takes into consideration the benefits that are also received by stakeholders through IDNs and community/regional HIEs.

Interview Support for the Three Types of HIEs

Interviews with Pennsylvania stakeholders (Appendix 1) confirm that there is a role for each of the three types of HIEs; there is the potential for all three to be sustainable; and with an open and transparent process, sustainability models can be developed that acknowledge the role that each type plays. Several of the interviewees recognize that IDNs will continue to grow. Most interviewees see the community/regional HIEs as the natural organizing body for HIEs because of their connection to medical referral regions and many benefits received by all stakeholders. There was near unanimous opinion that it is reasonable for all stakeholders, not just a few, to be a part of the state-level revenue model if there is benefit received. Benefits need to be more clearly articulated for each stakeholder group and the perceived value from the HIEs must be greater to or equal to their financial contribution.

Several interviewees questioned the value of the state-level entity providing a robust set of applications because this is the domain of IDNs and community/regional HIEs. A suggested deployment strategy that supports local, regional, and state exchange is to “build from the ground up” by connecting 10–12 community/regional HIEs in a nonproprietary way and then link across the state through a common platform. This unified infrastructure (for example, utility function) was seen as the greatest benefit of the state-level HIEs (versus being an applications provider).

There were mixed opinions as to which stakeholder groups would receive the most value/benefit in the state-level HIE and therefore, their respective contributions for HIE participation. There was a consensus among interviewees that all stakeholders must be at the table when determining the sustainability models, particularly for the state-level HIE. Transparency is key.

Input from Successful HIEs Around the Nation

Eleven successful state-level and community/regional HIEs were interviewed during September 2010 (Appendix 2) to provide guidance on successful sustainability models. Five of them have been operational prior to 2003 and were sustainable. Four were started between 2006 and 2008, and two are recently operational or are planning for implementation. Of the 11 operational HIEs, four are state-level HIEs, and seven are community/regional HIEs.

Collectively, these HIEs have been successful at obtaining multi-stakeholder participation at both the community/regional and state levels. Of the 11 operational HIEs, hospitals were financial participants in 9 HIEs; physicians were financial participants in 8; and payers were participants in 6. In all cases, fees were based on benefits received, and in most cases, physicians were charged for services received. Most of the HIEs grew their HIEs organically with the physician leaders opening the doors to new participants. In many cases, the HIEs are diligent at demonstrating a favorable return on investment to participating organizations and did not undertake activities that could not provide that return.

The 4 state-level HIEs each evolved into different roles. UHIN in Utah serves as the state’s claims and clinical infrastructure. In Vermont, Vermont Information Technology Leaders (VITL) has traditionally been driven by health reform starting with the patient centered medical home model. Only recently has VITL become the state’s exchange and Regional Extension Center. In Minnesota, MN HIE provides clinicians with statewide access to clinical data for 84% of the state’s population. Michigan’s MiHIN Shared Services is limiting its role to moving data between its’ seven sub-HIEs, which includes IDNs, community/regional HIEs, and a physician-based state-wide HIE.

Go Forward Strategy— HIE Sustainability Model for Three Levels of HIE

There is a compelling case to be made that IDNs, community/regional HIEs, and state-level HIEs each play unique yet complementary roles. Pennsylvania stakeholder interviewees for this project have made it clear that all stakeholder groups are more than willing to contribute to the funding of the HIEs in the state to the degree there is benefit received. Successful HIEs across the country validate that HIEs can be sustainable and demonstrate various funding mechanisms and consensus processes to ensure success. For example health information exchange is a key component for meaningful use and in the operationalization of Accountable Care Organizations (ACOs) and thus its services can generate revenue and contribute to its overall financial sustainability.

PAeHI is proposing that a financial sustainability HIE model be developed to support all three levels of HIEs. There should be an open and transparent multi-stakeholder process to develop the model. It should engage all stakeholder groups and ensure cross-stakeholder buy-in.

PAeHI, which already engages many of the stakeholder organizations, is an ideal organization to act as the convener of the process. Given the fast pace of the HITECH Act deadlines and current HIE activities in the state, this process should be completed within the next six months. Key steps include the following:

1. Articulate a high-level model that shows how IDNs, community/regional-level HIEs, and a state-level HIE can flourish across the state. Consider the unique issues in each medical referral region and statewide.
2. Collect market research by medical referral region and statewide in areas that need more exploration.
3. Engage stakeholders in a discussion about the model.
4. Come to general consensus on an HIE Sustainability Model for the state and next steps.

