

Sustainable Success:

State CIOs and Health Information Exchange

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When NASCIO released *Profiles of Progress 4: State Health IT Initiatives* in July of 2010 there were approximately 37 public health information exchanges (HIE) and 52 private exchanges that had gone live. During the short time frame between 2010 and now, the number of public health information exchanges has nearly doubled to 67, and the number of private HIEs has soared to 161.ⁱ

While the *Profiles of Progress 4* compendium focused on the varying state CIOs role in HIE and the governance structure, this issue brief will highlight the importance of a sustainable public HIE and the possible revenue streams that can create longevity. State CIOs and state policy officials need to consider the business drivers that will ensure that revenues exceed costs to plan, implement and operate an interoperable HIE. State CIOs recognize that there is no better opportunity than now for carrying out these goals, but continued ingenuity will be imperative in ensuring a state-run HIE is independently sustainable when public grants may no longer be available.

Measure Twice, Cut Once

While the goal of the health care stakeholder community has been to increase the interoperability of individual identifiable data in a secure, effective and efficient manner, the reality is that states will need substantial federal funding to meet these goals. The Health Information Technology for Economic and Clinical Health Act (HITECH) section of the American Recovery and Reinvestment Act of 2009 (ARRA) helped provide the initial grant money to make this goal a reality and also includes direct subsidies to states or state-designated entities (SDE) to establish health information organizations (HIO) in areas where there are limited options for engaging in HIE.ⁱⁱ In March 2010, the Office of the National Coordinator (ONC) completed the announcement of the State HIE Cooperative Agreement Program awardees. In total, 56 states, eligible territories, and qualified state designated entities received [awards](#).ⁱⁱⁱ In order to receive the grant money, states were required to provide [state strategic and operational plans](#) and are required to submit a financial sustainability plan to ONC by 2012. CMS has committed, in sub-regulatory

“In other words, CMS is offering states a financial incentive to convince others to fund HIE. This requirement could have the effect of swiftly moving HIE initiatives further down the important path to financial sustainability.”^{iv}

guidance, to providing Medicaid administrative funding to states for HIE development activities, but only if the states can demonstrate they have a business model that includes funding from various other health care stakeholders.^{iv}

The decisions that state-run HIEs make now for generating revenue will directly reflect future outcomes. States looking to use a step-by-step process should reference the toolkit released by the eHealth Initiative. The toolkit can be used to find the most suitable sustainability model that meets the needs of a state-run HIE. The eight phases include:^v

- Phase 1 - Stakeholder Engagement
- Phase 2 - Research and Analysis
- Phase 3 - Principles and Stakeholder Value Proposition
- Phase 4 - Capital and Operating Strategies
- Phase 5 - Risk Mitigation
- Phase 6 - Financial Modeling and Scenario Development
- Phase 7 - Stakeholder Testing and Modifications
- Phase 8 - Adoption and Implementation

For further information on the eHealth Initiative Toolkit and for more details on the 8 phases referenced above, please visit www.ehealthinitiative.org.

Calculating Expenses

State CIOs and other policy officials will need to consider funding streams for the large amount of capital that will initially be needed for startup and implementation, but there are also many ongoing expenses that will be incurred from general and administrative costs, consulting fees, and IT hosting services. While states may decide to develop their own HIEs, Thomson Reuters gives an estimate in Figure 1 of the typical costs for configurable “off-the-shelf” implementation costs.^{vi}

FIGURE 1: TYPICAL COSTS FOR OFF-THE-SHELF HIE

Type of HIE Cost	Ratio of Component Costs Compared to Overall Cost
Startup and Implementation Costs	15-25%
Hosting Services and Data Center Costs	25-35%
Administrative and Operational Costs	45-55%

Setting the HIE in Motion

Because of the harsh reality of state budgets, the very costly process of startup and implementation of a state-run HIE will most likely need government funding for the initial investment. States will need to consider some of the costs that will come as a result of submitting strategic and operational plans to the Office of the National Coordinator (ONC) under the State HIE Cooperative Agreement program. State CIOs and other leaders may need consultants that can provide legal guidance on meeting the requirements of the Health Insurance Portability and Accountability Act (HIPAA), design a framework based on the business, information, and technological architecture, and someone who can demonstrate that the HIE will generate enough revenue to cover all the costs for a functioning HIE.

Budgeting for Data Services, Maintenance and Upgrades

In addition to planning for the unexpected with disaster back-up systems, state-run HIEs will also need to anticipate the costs associated with hosting databases and any expenses needed for routine maintenance and upgrades in legacy technologies. States may choose to procure these services through a third party vendor, but the hosting services will still need to be added into the overall costs for maintaining an HIE. Many state CIOs have already started to explore cloud options in search of cost savings, scalability and many other benefits. For further information on cloud computing, please reference NASCIOs Cloud Computing Series which can be found at www.nascio.org/publications/.

Accounting for Administrative Burdens

The ability to fund the administrative and operational costs is imperative to the sustained success of a state-run HIE. If a state doesn't have sufficient funds to "keep the lights on" through regular revenue channels, the outlook will be grim for any longevity. Employees will need salaries, consultants will need to be contracted, licenses issued and leases will need to be signed for numerous operational obligations. Avoiding the use of government grants for these types of ongoing expenses will help ensure states have right balance sheet to operate independently.

Administrative Flexibility and Coordinating Cost Allocation

As millions of new federal dollars are spent on IT services that support human services, public health, justice and homeland security, a change in the attitude toward enterprise IT solutions and flexible braided funding guidelines with specific cost-allocation options could greatly improve the return on every federal dollar spent on information systems in the states.^{vii} If states are able to have this type of flexibility it could prevent the creation of new "stove piped" systems, or systems with rigid boundaries that only allow for the transmission of information along strict vertical agency lines rather than a horizontal exchange of information across state organizational lines.

States should consider splitting the cost of common health information technology components among stakeholders. The challenge that exists with commingling funds is that states will need to remain compliant with federal programmatic rules in 2 CFR Part 225, Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A-87) for IT investments by the states. Currently, the general guidelines attached to federal programmatic funding for services administered by the states do not promote enterprise IT consolidation, shared solutions, infrastructure optimization, virtualization or the integrated channels of services sought by citizens.^{viii} NASCIO sees this as a barrier to state innovation and will continue to advocate for revisions to the A-87 cost principles. State CIOs will continue to collaborate and coordinate with the Office of Management and Budget (OMB) to harmonize with the Administration's [Presidential Memorandum on Administrative Flexibility](#) that seeks to provide states with adequate flexibility.

Keeping Out of the Red and In the Black

Public grants have provided billions of dollars to states and communities to establish HIEs. The State Health Information Exchange Cooperative Agreement Program alone has distributed nearly \$550 million dollars in funding.^{ix}

In addition to the numerous public grant opportunities that are outlined in Appendix I, state-run HIEs frequently seek private grant funding from philanthropic donors, hospitals, physician offices, citizens and employers.

Delaware, the first state in the nation with a statewide electronic health information system, has been able to develop a sustainable model that is also a benefit to all of its residents. Below are a few examples of how the Delaware Health Information Network (DHIN) has garnered stakeholder participation and their current funding structure:^x

- DHIN Saves Time—With faster information, physicians will have patient results and reports as soon as they are available. This means less time searching for misplaced information and less need for duplicate tests.
- DHIN Improves Care—With consistent information, physicians will get results and reports in one format. This means less chance for error and fewer delays in treatment.
- DHIN Reduces Cost—With streamlined information, there is less chance for mistakes. This reduces patients' out-of-pocket expenses for unnecessary medications, radiology and laboratory tests, and hospitalizations.
- DHIN Enhances Privacy—With secure information, there's controlled access to patient health information and less paper. This means more privacy for patients.

DHIN has been able to successfully manage costs by seeking funding from three sources:

1. 30% Federal
 2. 35% State Funding
 3. 35% Private Funding (From Hospitals and Labs)
- Federal contracts - \$11.7 million over 9 years (2005 - 2014)
 - State's investment in DHIN over four years = \$8.0 mil
 - Average annual per capita State funding = \$2.15
 - Average annual per capita leveraged funding = \$3.94
 - \$1 for \$1 match on State funding by the private sector

Transaction vs. Subscription Fee Models

State-run HIEs are mainly utilizing two types of usage fees and, in some instances, using a combination of the two. The first model, the transaction fee model, is used when charging for each set of data that is sent or received. This model has been perceived to have several drawbacks that, leading some larger organizations to stay away from this model. In addition to creating a disincentive to more readily accessible information, transactions fees are not always consistent because of the variation in usage. The variation in usage results in the need for monitoring transactions and will incur further administrative burdens for tracking and record keeping. However, a benefit of a transaction fee could be the potential for higher revenue because of the astronomical amount of transactions that might occur each day.

The second model, a subscription fee model, allows providers and users to set a predetermined level of data access. The subscription fee can be set at a weekly, monthly or annual rate and may include varying levels of services

DHIN's funding comes from three sources:

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2. 35% State Funding
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that are offered. In addition to maintaining a consistent revenue stream for the HIE, this also allows the HIE to offer services at a lower cost for participation. These lower costs would likely increase revenue through higher participation rates in the states. With the subscription model, users would also find themselves with the opportunity to freely use the services without any disincentives, possibly leading to better health outcomes and savings due non-repetitive testing.

As mentioned before, several HIEs have used a hybrid model with subscription fees for core services and transaction fees that would be applied to value added services. Examples of hybrid models include:^{xi}

- [Utah Health Information Network](#)
- [HealthBridge](#)
- [Community Health Information Collaborative](#)

HIE as a Public Good

Some states have considered HIE to be funded like other public utilities because of the benefit to the general public. This model would do away with stakeholder contributions and would require the public to support the exchange of health information through a state tax or fees. While this has been considered in many states, the likelihood of state governments enacting legislation that would push the burden onto the constituents and businesses is unlikely. The current political environment and looming economic trepidations in the states make it even more likely that steady revenues from fee models with key stakeholders will be the catalyst to sustainability.

Benefits and Challenges of Key HIE Revenue Streams

In February of 2011 Thomson Reuters and the eHealth Initiative released a special report on determining the path to HIE sustainability. As part of the analysis, a breakdown of the benefits and challenges that exist for key revenue streams was highlighted. In Figure 2 you will find funding opportunities that exist and how value-added services will play a vital role in HIE adoption.^{xii}

FIGURE 2: HIE REVENUE STREAMS

	Benefits	Challenges
Grants – Public	<ul style="list-style-type: none"> Multiple grant options today Significant dollars are currently available 	<ul style="list-style-type: none"> Matching fund requirements Provide limited sustainability timeframes
Grants – Private	<ul style="list-style-type: none"> Multiple grant options today Significant dollars are currently available 	<ul style="list-style-type: none"> Provide limited sustainability timeframes May come with payer-specific “strings attached”
Usage Fees - Subscription	<ul style="list-style-type: none"> Low administrative overhead Predictable revenue stream 	<ul style="list-style-type: none"> Value-add services often required to achieve sustainability post grants
Usage Fees - Transaction	<ul style="list-style-type: none"> Revenue generation based on activity can mirror variable costs 	<ul style="list-style-type: none"> Value-add services often required to achieve sustainability post grants “By the drink” pricing may impede provider adoption Fluctuating revenue source Requires higher administrative support than other revenue sources
Utility Model/Levies	<ul style="list-style-type: none"> States can match revenue to stakeholders Low collection default rates 	<ul style="list-style-type: none"> Unpopular in current economic and political environment Administrative costs consume a portion of revenue
Shared Revenue Brokerage Model	<ul style="list-style-type: none"> Recurring revenue requiring minimal support Competitive offerings may drive 	<ul style="list-style-type: none"> Requires active partner management May require more flexible data agreements
Clinical	<ul style="list-style-type: none"> Viewed as high value providers Support HIE’s core value of clinical interoperability May all HIEs in competitive markets to differentiate 	<ul style="list-style-type: none"> May require adjustments to achieve right mix between core and value-added May overlap/compete with other EHR/HIT provider systems
Administrative Services	<ul style="list-style-type: none"> May eliminate the burden on providers and payers to support separate administrative systems 	<ul style="list-style-type: none"> May require nonclinical patient consent May raise privacy concerns Commodity pricing by existing players may make profitable price points difficult to achieve
Payer Value-Add Services	<ul style="list-style-type: none"> Viewed as high value by payers 	<ul style="list-style-type: none"> May require nonclinical patient consent May raise privacy concerns May cause provider and patient participation concerns
Provider Value-Add Services	<ul style="list-style-type: none"> May allow HIEs in competitive markets to differentiate 	<ul style="list-style-type: none"> May overlap/compete with other HER/HIT provider systems

State Readiness and CIO Reflection-

As state CIOs continue to consider innovative ways of providing viability to state-run HIEs, there are several questions that should be considered:

- How long will grant funding last and what are key revenue streams that will augment associated costs?
- How will the HIE integrate into the existing state architecture?
- Will your states privacy policies become a hindrance to participation?
- Would an opt-in vs. an opt-out model limit possible revenue?
- As the HIE market becomes more competitive, what added services could be offered that complement the core services?
- What technical requirements will need to meet and what costs will be associated with providing those services?
- Will your state consider multi-state collaboration as a way to cut costs and provide further value?
- What staff augmentation will be need to have the proper workforce in place to plan, implement and sustain a state-run HIE?
- What services do competing HIE's offer that the state could leverage?
- Have you reached out to non-health entities for financial support? For example, states may establish agreements with agencies or departments about using a master person index for the HIE, as well as the index for all state transactions.

States have been given an unprecedented opportunity to make substantial leeway in developing a sustainable model for a HIE. The Federal funds granted to the states are generous, but the funds are not feasible for sustaining state-run HIEs. State CIOs and state policy makers will need to be diligent in allocating public funds for planning and implementation costs, but ultimately a well thought out business plan and innovative services for building revenue will promote success. While states have progressed at different rates, sustainability will be paramount for a state-run HIE to flourish.

Appendix I

Below are the major public grants currently available to HIEs, their eligibility requirements, and their expiration dates.^{xiii}

- State Health Information Exchange Cooperative Agreement Program
 - Funds totaling \$547,703,438.
 - Fifty states, the District of Columbia, and five territories received awards.
 - Matching requirements for the states are as follows:
 - FY 2010 – October 1, 2009 - September 30, 2010
There is no match requirement.
 - FY2011 – October 1, 2010 - September 30, 2011
One match dollar is required for every 10 federal dollars.
Divide the amount budgeted for the above time period by 10 to obtain the required amount of match for FY2011.
 - FY2012 – October 1, 2011 - September 30, 2012
One match dollar is required for every 7 federal dollars.
Divide the amount budgeted for the above time period by 7 to obtain the required amount of match for FY2012.
 - FY2013 – October 1, 2012 - September 30, 2013
One match dollar is required for every 3 federal dollars.
Divide the amount budgeted for the above time period by 3 to obtain the required amount of match for FY2013.
 - Program expires FY2014.
 - **All funding has been awarded.**
- Beacon Community Program
 - Funds totaling \$233,907,442.
 - Currently seventeen awards with the potential for additional awards.
 - The awards are to support specific and measurable improvement goals in the three vital areas for health systems improvement: quality, cost-efficiency, and population health; and to demonstrate the ability of health IT to transform local health care systems.
 - Currently five of the Beacon Communities are focusing on implementing, increasing, or improving HIE.
 - The project period is thirty-six months.
- Challenge Program
 - Funds totaling \$16,296,562.
 - Ten potential awards to participants in the State HIE Cooperative Agreement program.
 - Award encourages breakthrough progress for nationwide health information exchange in five challenge areas. The identified challenge areas were established by Federal and State governments, since implementation of the HITECH Act.
 - The project period coincides with the State HIE Cooperative Agreement project period.
 - **All funding has been awarded.**

- CMS Medicaid Transformation Grants: Health Information Technology
 - Funds totaling \$150 million have been issued. Funds can be used for electronic health records, e-prescribing, clinical decision support and health information exchange.
 - Thirty-five states, the District of Columbia, and one territory were awarded grants in 2007.
- Medicaid EHR Incentive Program Funds
 - Provides 90 percent administrative matching funds to State Medicaid Agencies.
 - States applying for the 90 percent matching funds must meet stringent criteria including non-duplication of work under a separate federal grant such as the State HIE Cooperative Agreement.

ⁱ www.informationweek.com/news/healthcare/interoperability/231001868

ⁱⁱ Health Information Exchange Economic Sustainability Panel: Final Report, NORC at the University of Chicago. April 2009.
www.healthit.hhs.gov/portal/server.pt?open=512&objID=1239&parentname=CommunityPage&parentid=22&mode=2&in_hi_userid=11113&cached=true

ⁱⁱⁱ www.statehieresources.org

^{iv} New Trend in Sustainable HIEs: Fair Share Financial Support, iHealthBeat, August 2011.
www.ihealthbeat.org/features/2011/new-trend-in-sustainable-hies-fair-share-financial-support.aspx

^v Health Information Exchange Toolkit, eHealth Initiative. Updated July 2011.
www.ehealthinitiative.org/about-us/press/press-releases/541-ehi-releases-updated-health-information-exchange-toolkit.html

^{vi} A Special Report from Thomson Reuters and eHealth Initiative: Determining The Path to HIE Sustainability, February 2011.
www.ehealthinitiative.org/reports.html

^{vii} NASCIO 2011 Advocacy Priorities, February 2011.
www.nascio.org/advocacy/current/

^{viii} NASCIO 2011 Advocacy Priorities, February 2011.
www.nascio.org/advocacy/current/

^{ix} www.healthit.hhs.gov/portal/server.pt?open=512&objID=1488&mode=2

^x Delaware Health Information Network.
www.dhin.org/ForPolicyMakers/tabid/57/Default.aspx

^{xi} A Special Report from Thomson Reuters and eHealth Initiative: Determining The Path to HIE Sustainability, February 2011.

www.ehealthinitiative.org/reports.html

^{xii} A Special Report from Thomson Reuters and eHealth Initiative: Determining The Path to HIE Sustainability, February 2011.

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^{xiii} A Special Report from Thomson Reuters and eHealth Initiative: Determining The Path to HIE Sustainability, February 2011.

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