Evaluation of the State Health Information Exchange Cooperative Agreement Program

Case Study Report: Experiences from Wisconsin in Enabling Health Information Exchange (HIE)

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"Wisconsin has a very strong leadership culture in the medical market… hospitals over the last decade have stepped up and done some things that they kick and scream about in other states – quality reporting, transparency about pricing, and community benefits. In addition, there is a cross-stakeholder environment… these stretch across the state and different types of stakeholders. To some extent, the culture is that 'the right thing to do' is something that gets considered. That bodes well for our opportunity in the long term." –WISHIN *implementation team member*

Report Summary	
Intervention and Setting	From February 27 to 29, 2012, the NORC State Health Information Exchange (HIE) evaluation team conducted a formal site visit of the state of Wisconsin's Program (HIE Program) and met with HIE stakeholders in Madison, Waupun, Fond du Lac, Verona, and Sauk City. The primary goals of the site visit were: ▪ To understand state implementation experiences with respect to governance and accountability, enabling services for HIE, and establishing trust and sustainability; ▪ To identify common enablers, barriers, and challenges to HIE; ▪ To understand provider perceptions and experiences with HIE; and ▪ To generate "lessons learned" around engagement with large health systems, distributed governance models, and innovative models for HIE.
Data Collection and Target Population	During the site visit, NORC held discussions about Wisconsin's HIE efforts with representatives of the following groups: ▪ State Health Information Technology Coordinator (HIT Coordinator) ▪ Wisconsin Statewide Health Information Network (WISHIN) (HIE Implementation Team) ▪ Wisconsin Division of Public Health ▪ Physician Organization (Wisconsin Medical Society) ▪ Large Health Systems (Agnesian, SSM Healthcare Wisconsin) ▪ Regional Extension Center (REC) (Wisconsin Health Information Technology Extension Center (WHITEC)) ▪ Industry Stakeholder (Epic) ▪ Vendor for Direct services (Ability) ▪ A WISHIN advisory committee member ▪ Providers using Direct (Rural Wisconsin Health Cooperative, Sunrise Family Care Clinic) NORC also conducted two provider focus groups.

Report Summary	
Key Take-Aways	Key take-aways from the Wisconsin site visit include: ▪ Wisconsin has a long history of voluntary HIE efforts involving the state, provider, and vendor communities. ▪ WISHIN's incremental and inclusive approach leverages existing investments and focuses on improving quality of care. ▪ A large proportion of providers in Wisconsin are familiar with EHRs and engaged in HIE. However, a small number of independent and/or rural providers may still rely on fax/paper to exchange health information. ▪ WISHIN markets Direct to all of its providers; however, vendors have not yet integrated Direct into their products, making provider uptake challenging. ▪ WISHIN has a unique challenge to offer valuable and unique products to a highly connected, robust market. ▪ The development of Accountable Care Organizations (ACO's) presents new opportunities for WISHIN services around data and analytics. Some stakeholders believe ACOs may present a challenge to WISHIN's value proposition. ▪ The strong presence of vendors and Integrated Delivery Networks throughout the state, coupled with the large existing proportion of connected providers suggests that a market-based solution with select services provided by the state is the optimal solution to HIE in Wisconsin.

Introduction

Efforts to establish health information exchange (HIE) to enable high quality and efficient health care in the United States (U.S.) have increased dramatically over the past 20 years. However, the constantly evolving HIE market encounters unique challenges revolving around cost, interoperability, and stakeholder engagement. Recently, a diverse range of market-based solutions for HIE have been emerging. These include hospitals allowing ambulatory providers access to electronic health records (EHRs) and provider organizations, such as independent physician associations or hospital networks, enabling exchange among providers in their network. Additionally, Integrated Delivery Networks (IDNs) and staff model health maintenance organizations are exchanging information internally and sometimes giving outside providers limited access. Finally, EHR vendors are entering into the competitive HIE market by offering a wide range of HIE solutions. According to the 2011 KLAS performance report, between 2010 and 2011, the number of live public health information organizations (HIOs) in the country grew from 37 to 67, while the number of live private information exchange initiatives increased from 52 to 160.[1]

Progress toward nationwide HIE intensified after Congress passed the American Recovery and Reinvestment Act (ARRA) and Health Information Technology for Economic and Clinical Health (HITECH) Act in February 2009. The legislation created unprecedented opportunities to encourage the adoption and use of EHRs and HIE through financial incentives.[2] In August 2009, the Office of the National Coordinator for Health Information Technology (ONC) issued a funding opportunity announcement for the State HIE Cooperative Agreement Program, announcing the agency would distribute $564 million to states and territories to enable HIE. By March 2010, 50 states and 6 territories (hereafter "states") received initial awards to plan and establish their programs. In

addition, in July 2010, the Centers for Medicare & Medicaid Services (CMS) released the final rule on Stage 1 Meaningful Use (MU) requirements. States have a great deal of flexibility regarding how they support providers in meeting the information exchange requirements for MU.[3] To ensure that all providers have at least one option to meet Stage 1 MU requirements, ONC also launched the Direct Project in 2010. Direct is a set of standards, policies, and services offering a secure solution for providers to meet MU requirements.[4] Direct employs a simple point-to-point "push" model to ultimately improve the transport of health information by ensuring it is faster, more secure, and less expensive.[5]

Eager to understand the effects and implications of the State HIE Cooperative Agreement Program, ONC has contracted with NORC at the University of Chicago (NORC) to conduct a multi-year evaluation of the program; this includes case studies of five states. Wisconsin has made significant and innovative advances developing stakeholder relationships and the necessary technical infrastructure to support HIE. In addition, Wisconsin is expanding existing investments in public health infrastructure and implementing Direct throughout the state. As such, their experiences may provide important insights for other states engaged in or planning exchange activities.

Key Factors That Influence HIE in Wisconsin

Wisconsin's unique health market and health IT history have greatly influenced the evolution of HIE throughout the state. While one-third of Wisconsin's population resides in rural areas,[6] the majority of the population lives in urban areas, with the largest cluster in the southeastern portion of the state.[7] In 2011, about 74 percent of the 13,822 practicing physicians in Wisconsin were in a group practice of 50 or more, and 67 percent were in practices of 100 or more.[8] One example is Marshfield Clinic, one of the largest private, multispecialty practices in the U.S. with 779 physicians in 54 locations around Wisconsin.[9]

Wisconsin providers' rate of EHR adoption is significantly higher than the national average. The most recent data cites 76 percent of office-based physicians using an EHR system.[10] The majority of large group practices have implemented, or are in the process of implementing, an EHR. In addition, physicians in the state have access to HIE through a diverse range of solutions. These diverse solutions include Epic's Care Everywhere network, provider organizations or hospital networks enabling exchange among providers in their network, hospitals offering ambulatory providers access to their EHR, and labs and imaging facilities sending results electronically to EHRs. Specific instances of these market-based solutions in Wisconsin include:

- ***Private HIE-enabled EHR Solution*** – Private EHR vendors are prevalent throughout Wisconsin. Epic, for example, provides an interoperability framework that enables the exchange of patient information, specifically problem, allergy, and medication lists, among and between Epic systems. Due to the high penetration of Epic EHRs in Wisconsin, HIE in the state is practically synonymous with Epic's platforms.
- ***Large Multispecialty Practices*** – Large practices, such as Marshfield Clinic, share access to a single EHR system and have the capacity to exchange information across EHR systems to hospital groups, such as Ministry Health Care. Marshfield Clinic is a strong supporter of EHRs and HIE. Their EHR was the first to receive the *Certification Commission for Healthcare Information Technology (CCHIT).*

- *HIE through Hospital Networks* – Hospital networks throughout Wisconsin enable exchange among providers in their network. For instance, SSM Health Care and Dean Clinic share a joint patient record system enabling exchange of patient data across multiple providers.

Prior to the State HIE Program, Wisconsin pursued several initiatives to promote statewide HIE. In 2005, Wisconsin Governor Jim Doyle created the eHealth Care Quality and Patient Safety Board to develop a 5-year action plan to guide legislative and regulatory actions, coordinate private and public stakeholders, and maximize federal financial opportunities. Because of these efforts, the state participated in the Health Information Security and Privacy Collaboration grant project and helped form the Wisconsin Health Information Exchange (WHIE), an HIO that oversees the exchange of health information across organizations.[11] The state also initiated several independent projects to connect state public health systems with EHRs to other clinical systems, including linking the Wisconsin Immunization Registry (WIR) system to EHRs, and electronic laboratory reporting for public health notifiable conditions.

In 2009, Wisconsin submitted its application for the State HIE Program, entitled the "Wisconsin Relay of Electronic Data (WIRED) for Health." In 2010, the Wisconsin Department of Health Services selected the Wisconsin Statewide Health Information Network (WISHIN) as the state-designated entity (SDE) to govern statewide HIE. Table 1 provides a brief overview of HIE in Wisconsin.

Table 1. Background on Wisconsin State HIE Activities

Wisconsin State HIE	
Funding Amount	$9,441,000
Population Size	5,686,986
Recipient Organization	Wisconsin Department of Health and Family Services
State Designated Entity (Lead Organization)	Wisconsin Statewide Health Information Network (WISHIN)
Strategic and Operational Plan Approval Date	12/21/2010
ONC Strategic Model Classification[12]	Elevator/Orchestrator*
Technical Model	Network-of networks architecture to connect sub-state nodes; central HIE services currently include shared services and Direct messaging. WISHIN will initiate a Master Patient Index/Record Locator Service (RLS) to support query/ retrieve in Phase 2.
Predominant EHR Vendor	Epic
Health Information Service Provider	Ability
Regional Extension Center (REC)	Wisconsin Health Information Technology Extension Center (WHITEC)

*The Elevator Model, as defined by ONC, describes states wherein the "rapid facilitation of directed exchange capabilities to support Stage 1 Meaningful Use" and the Orchestrator Model, as defined by ONC, describes states wherein the "Thin-layer state-level network to connect existing sub-state exchanges."

Wisconsin's Approach to HIE and The Role of Contextual Factors

Wisconsin's approach to HIE services is strongly influenced by the local market needs and leverages both public and private investments in HIE. Their overall strategy is to incrementally establish a multi-level statewide network, pursuing a phased implementation and a complimentary legislative strategy.

Technical Approach

WISHIN's technical approach to HIE includes a three-layer network. The base layer is composed of organizations performing HIE, i.e. local, provider, and vendor- and regional-based HIOs. The middle layer connects HIOs and provides access to state-level services, such as the WIR. The top layer facilitates intra-state and nationwide exchange.[13] While WISHIN governs the statewide exchange, WHIE is the technical manager that procures vendor and technical services.

Wisconsin's implementation plan includes two phases: Phase 1 is focused on deployment of Direct secure messaging while Phase 2 involves the implementation of robust query-based exchange. Notably, Phase 1 focuses on ensuring the relatively small number of unaffiliated providers have an option to securely exchange information with trusted providers to improve patient care and meet MU requirements. Additional information on the two phases of Wisconsin's implementation plan is detailed in Table 2 below.

Table 2. Wisconsin's Phased Approach to HIE

Phase 1: The Direct Project	Phase 2: Robust query-based exchange
▪ In 2011, the state implemented WISHIN Direct to provide Direct secure messaging to Wisconsin providers, labs, and pharmacies. ▪ Direct supports provider-to-provider exchange, as well as exchange between regional entities, and currently maintains a customized enrollment portal and webmail application. ▪ WISHIN is currently focused on expanding the number of Direct users, as well as increasing usage among existing Direct users.	▪ The second phase focuses on the development of a multi-layered and modular state-level HIE backbone through the development of infrastructure for data translation and robust query-based exchange. ▪ WISHIN intends to expand security services, and develop a master patient index, an HIE participant directory, patient consent registry, record locator service, and a gateway to federal partners via the Nationwide Health Information Network (NwHIN). ▪ WISHIN released a Request for Proposals (RFP) for HIE Solutions and Services to vendors and anticipates selecting a vendor in April 2012. ▪ WISHIN plans to conduct pilot projects in late October and to rollout the technology on a larger scale in 2013. As the vendor selection is pending, further details are to be determined.

Implementation of Direct meets the needs of independent providers. WISHIN hopes that, in offering Direct as the first of two planned phases of statewide HIE development, providers (including physicians in small practices, independent pharmacies, and labs) who could not access sophisticated systems to exchange information will acquire this capability. This option is particularly

important given the structure of the Wisconsin health care market. Since a large proportion of providers in Wisconsin belong to either an IDN or a large hospital system, stakeholders report a significant amount of pressure for independent providers to join a larger system. However, small practices are wary of affiliating with a larger organization and losing their independence. Direct offers a low cost solution to exchange information and could potentially facilitate providers' ability to exchange information while maintaining their independence. Furthermore, small independent providers in Wisconsin are less likely to be using comprehensive EHRs and are not demanding the full range of HIE services. These practices express a desire for technically simple and inexpensive options. Largely, their goal is to "survive" without joining a large health system, even though joining such a system could potentially allow them to easily meet MU requirements and participate in HIE activities. HIE stakeholders also note the cost of comprehensive EHR systems is unattainable for these practices, and vendors of such systems are not focused on the business of small or independent practices.

Wisconsin is also leveraging a legislative strategy to encourage HIE. MU legislation and subsequent incentive funding have served as essential enablers of HIE throughout Wisconsin. In addition, Wisconsin's state legislature recently passed legislation to offer tax credits to health care providers for information technology hardware and software used to maintain EHRs. The credit is equal to 50 percent of the amount the provider paid in the taxable year. Providers can carry unused tax credits forward to the next tax year for up to 15 years; the maximum amount of tax credits the state will provide is $10 million.[14] This statewide legislation encouraging the adoption of EHRs has reinforced the importance of information exchange, driving forward the development of statewide HIE.

> "HIE is retail, not wholesale."
> —WISHIN *implementation team member*

Sustainability Approach and Payment Structure

Mirroring their approach to implementation, WISHIN also developed a two-phase strategy to sustainability. As part of Phase 1, WISHIN is charging provides $200 per year for each Direct address. To garner participation for the pilot project portion of the implementation, WISHIN waived this fee for providers participating in the demonstration pilots. For Phase 2 of the project, WISHIN plans to charge a subscription fee for standard HIE services. To ensure WISHIN does not incur significant upfront costs, WISHIN is considering a model for specification services that includes setting up services with a vendor but not incurring a charge until customers sign up. A portion of the revenue will go to WISHIN while the vendors will keep the rest. This model is detailed in WISHIN's RFP to vendors for Phase 2.

WISHIN's Phase 1 payment model of a one-time $200 payment for a Direct address is insufficient to sustain HIE in the state. Therefore, they are dependent on Phase 2 as the primary source of revenue for their HIE activities in the intermediate to long term. WISHIN is considering other strategies, including collaboration with Wisconsin's Health Information Technology Extension Center (WHITEC), Wisconsin's regional extension center (REC). WHITEC plans on expanding their reach beyond primary care providers to other types of providers, including specialists, and expanding their services to provide technical assistance for HIE on behalf of WISHIN. These two expansions of WHITEC's services and close collaboration with WISHIN will contribute to the sustainability of WISHIN's efforts.

Stakeholder Engagement in Leadership

An integral part of WISHIN's approach is stakeholders' involvement in steering the strategy for statewide HIE. WISHIN consistently leverages relationships established by WHIE to bring the state, provider, and vendor communities together. Stakeholders are involved formally, via the Board of Directors, to direct WISHIN's efforts to promote HIE and informally, via existing relationships.

Stakeholders cite long-standing relationships stemming from previous voluntary HIE efforts as integral to the state's success. Stakeholders believe some of WISHIN's success stems from a relatively long history of voluntary HIE efforts in Wisconsin. Stakeholders explain that older HIE efforts, including WIRED, WHIE, and Wisconsin Health Information Organization (WHIO), initially brought the same group together. Over time, this fostered understanding and support for HIE efforts. Stakeholders note these efforts are ultimately rooted in a desire to "do the right thing."

> "The early initiatives with WIRED, and the success in Madison and Milwaukee (WHIE) – those were fantastic initiatives, that set the stage for us to get ahead. When you see that success, the executives really understood what was going on and so it was easier to get buy-in from the executive team." —*Large health system representative.*

Part of WISHIN's success derives from the Board's broad and inclusive representation of public and private stakeholders, vendor participation, and clear communication to stakeholders. WISHIN's Board of Directors consists of 15 members representing a broad swath of public and private stakeholders of HIE. Five standing committees and four additional advisory committees report to the Board. Stakeholders specifically cite the Board's inclusion of hospital CIOs and CEOs, as well as a hospital association representative, as a facilitator for involvement and buy-in from a number of Wisconsin's large health systems. Stakeholders believe participation from these large health systems is crucial to the success of statewide HIE efforts. Additionally, discussants consistently emphasize the importance of communication with vendors and involvement in promoting HIE in Wisconsin. Stakeholders consistently praise WISHIN for communicating their plans and seeking recommendations from stakeholders**.** Stakeholders believe WISHIN is open and transparent about its plans for enabling HIE; they cite this as a major contributor to stakeholder buy-in.

> "We're partners, not competitors" —*REC representative.*

Implementation and Current Progress

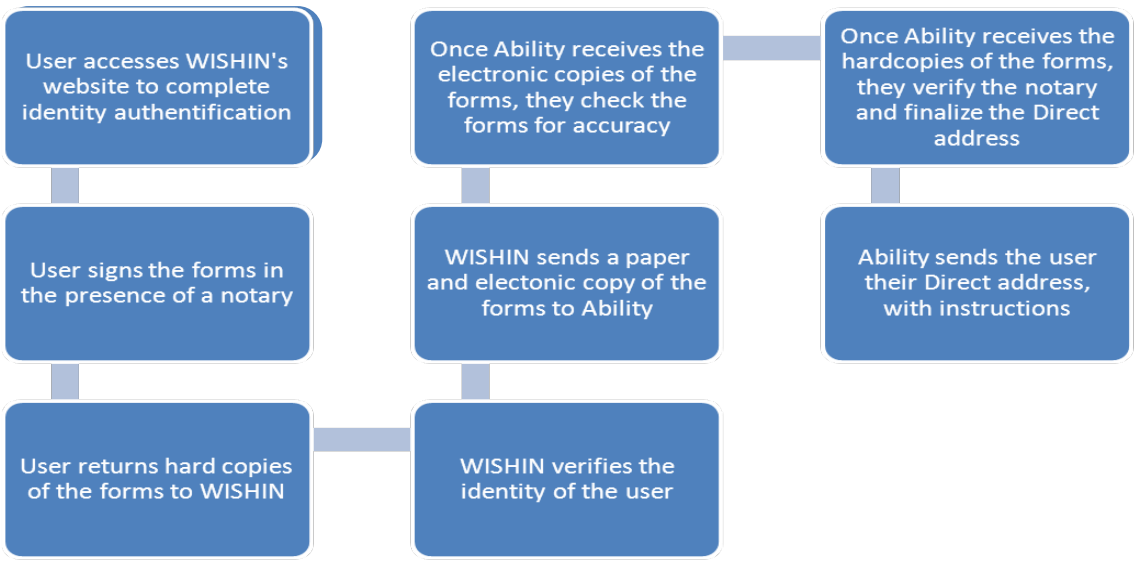
In August 2011, WISHIN selected Ability Network, Inc. (Ability) to provide Direct services under the name WISHIN Direct. Ability took four to five weeks to set up the technology to support Direct messaging. WISHIN is providing Direct users with a simple enrollment process and technical assistance. While stakeholders discussed the potential value of a provider directory, Federal guidelines and standards are currently under development, and a provider directory is complex and costly to develop. In addition, the Wisconsin Medical Society has a searchable database of all licensed, practicing providers in Wisconsin.

The logistics and process to obtain a Direct address are straightforward. The process involves both identity authentication and security verification, as Exhibit 1 details below. First, a potential

Direct user accesses WISHIN's website and completes an identity authentication form and a participation agreement The user must sign the identify verification form in the presence of a notary and then mail hard copies of both forms to WISHIN. WISHIN verifies the user's credentials and sends both paper and electronic forms to their HISP vendor, Ability. Ability then checks the forms for accuracy, verifies the notary, and finalizes the Direct address. To complete the process, Ability sends the user their Direct address and instructions. Using this process, Direct users are generally able to obtain a Direct address in one to two weeks.

In order to meet the needs of entities of different sizes and with different needs, WISHIN Direct offers two types of Direct addresses: one for individuals and one for organizations. Individual identities include one address assigned to one user, who maintains their own certificate/trust settings. Organization identities receive one address but also have access to an administrative interface. This interface allows the user of the organization identity to create as many addresses as needed. All of the addresses created by the organization identity share a common certificate and trust settings. In addition, the organization identity has the capability to activate and deactivate the associated addresses at any point in time. In general, organizations with more than one user purchase the organization identity.

Exhibit 1. Process to Register and Obtain a Direct Address



The Direct pilot projects serve as an important proof of concept and help identify important issues. Since implementing Direct, WISHIN planned and launched several Direct pilot projects. In addition, a number of providers purchased Direct licenses. Stakeholders indicate that independent providers, providers from small practices, providers without an EHR, and providers with access to a less robust HIE are most likely to gain from Direct. Direct pilot projects focus on care coordination, transmission of lab test results, electronic reporting, administrative functionalities, and interstate exchange. These projects are also assessing the feasibility of replacing paper workflows with Direct messaging. Table 3 below describes the status of Direct pilot projects to date.

Table 3. Description and Status of Direct Pilot Projects

Project	Status	Use Case
Newborn Screening	Complete	Exchange of lab results between a hospital and lab
Lab Reporting	Planned for March 2012	Sending immunization results from clinic to the immunization registry
Administrative/ business purposes	Plans under development	Coordinating claims adjudication between hospitals and payers
Emergency Department and FQHC	Plans under development	Exchanging clinical care summaries between an Emergency Department and an FQHC
Transitions in care	Plans under development	Exchanging patient information regarding care transitions between a long-term care facility and a clinic, or between two clinics
Rural Hospital to community clinic	Plans under development	Exchanging patient information between a rural hospital and a community clinic
Consent form	Cancelled	Implementation of a common consent form across multiple states

Early lessons learned from Direct implementation. WISHIN encountered major challenges in securing provider participation for the newborn screening pilot and spent four to five months recruiting providers. Prominent issues experienced during the planning and implementation of the pilot projects include:

- ***Workflow Changes.*** The pilots require workflow changes, which are typically difficult and expensive to implement. In addition, organizations must implement the pilot while simultaneously continuing with their regular processes to accurately measure project success. Providers do not typically want to invest the time and resources to make these changes, and those that have participated have strong, existing relationships with WISHIN.
- ***Large proportion of labs already use HL7.*** It is especially difficult to secure laboratory participation in the pilot project since a large proportion of these facilities have been sending messages using HL7 for over a decade. The only laboratory that agreed to participate has a long-standing relationship with the other stakeholders and a demonstrated commitment to statewide HIE.
- ***Existing lab systems "auto-dial" to fax result*s.** The current process for labs to send results to providers includes an "auto-dialing" system that automatically sends lab results to providers' fax machines. Using Direct would require labs to manually send results to a provider's Direct address, a process outside of labs' existing workflow and therefore a deterrent to their participation.
- ***Direct is "provider-centric, not patient-centric."*** Providers cite the need for robust, query-based exchange and struggle to find and verify previous medical records under the current system.
- ***Pilots do not reflect real-life workflow scalability.*** The pilots demonstrate scenarios that are significantly less complicated than what is typical for any specific workflow. For

instance, although an emergency department typically distributes referrals to multiple community health centers, and community health centers typically coordinate care with more than one emergency department, the pilot projects focus on referrals between one (or a limited number of) emergency department(s) and one (or a limited number of) community health centers. This means that the participants have to maintain multiple workflows until all of their referring partners are participating in Direct.

> "The difference today is there is no advantage to using Direct because you have to go outside of the system…it's still easier to direct a nurse to send a fax," —*Local provider*

Aside from the pilots, there are ongoing administrative burdens of enrolling providers/entities in Direct. The process requires users/entities to get the application form notarized, and discussants note the longest part of the process generally involves the user obtaining the notarization and submitting the hardcopy of the form to WISHIN.

Another challenge standing in the way of increased uptake and widespread use of Direct is workflow integration. Currently, providers must log-out of their EHR to access Direct messages which is not feasible at the point of care. This is because EHR and HISP vendors are still developing products that fully integrate Direct specifications. WISHIN's move towards Direct before vendors develop these products greatly contributes to challenges around uptake and widespread use of Direct. Furthermore, since the information cannot be integrated into the EHR, providers are not likely to realize value from the information they receive.

In order to promote the use of Direct and to combat some of the challenges affiliated with the use of Direct as detailed above, WISHIN employs a variety of strategies to drive the use of Direct, including waving Direct fees for all providers participating in a pilot. WISHIN is also working extensively with providers participating in the pilot to optimize their workflows and integrate the information received via Direct into clinical practice. In addition, WISHIN recently began using the services of a marketing firm to promote Direct and future HIE services offered by WISHIN. Finally, WISHIN has also been working very closely with WHITEC.

Wisconsin's quality improvement organization, MetaStar, operates WHITEC. MetaStar's long-standing relationships with providers and other stakeholders are helpful in building provider trust and ensuring WHITEC's success. WHITEC is reaching out to the state's relatively small proportion of providers who are not a part of a large health system. WHITEC is working to help small provider practices adopt more affordable EHRs, meet Stage 1 MU requirements, and use Direct as a jumping off point to information exchange. WISHIN is leveraging the REC's relationships with providers for outreach and communication to small provider offices. WHITEC describes their relationship with WISHIN as a partnership with frequent communication and strong collaboration. They emphasize the importance of provider outreach and education, and consistently share lessons learned.

Despite these early challenges, stakeholders cite ways Direct can streamline administrative processes and demand appears to be slowly increasing. A large health system discussed their plans to use Direct for sending supporting information for claims. The current paper processes are time consuming and inefficient. Since they do not have an encryption tool, they must print relevant information from EHRs, fill in applicable information, and send information via hardcopy or fax.

Direct will result in time savings, as well as increased privacy and security of patient information. Due to success stories like these and despite difficulties securing provider buy-in and support, some stakeholders have an increased awareness and interest in Direct. They cite the lag in uptake as typical for federal initiatives, which usually take time to gain momentum.

Stakeholders believe training is essential for the adoption of Direct. If a user experiences problems or has a question regarding Direct, WISHIN is available for assistance. If the issue is complicated and/or technical, WISHIN connects the user with Ability staff. WISHIN is also responsible for training users. Stakeholders cite training as extremely important to the potential uptake of Direct and to ensure patient privacy.

> "I've been saying for about a year, but I thought this year, 2012, was going to be a big year for… the product and for the standard, and I think we're starting to see that now." —*HISP vendor regarding Direct.*

Delays in Phase 2 of the implementation affects uptake of WISHIN services. Notably, WISHIN's Phase 2 approach of instituting robust, query-based exchange is occurring later than initially planned. This is a potential barrier moving forward, as providers and HIE stakeholders have moved forward with other means of exchange in the absence of the Phase 2 implementation. Other strategies pursued by some of the larger hospital systems during this delay include:

- Hospitals allowing ambulatory providers in the community access to their EHR systems;
- Provider organizations, including independent practice associations, provider service organizations, and hospital networks, enabling exchange among providers in their network;
- IDNs and staff model health maintenance organizations facilitating exchange by member providers and sometimes giving outside providers limited access; and
- Leveraging HIE capabilities of EHR vendors.

The delay in implementing Phase 2 has negatively impacted WISHIN's long-term sustainability. Health systems originally interested in leveraging WISHIN services have found alternative options to meet their HIE needs. One stakeholder believes sustainability cannot be achieved unless some of these large health systems collaborate and reduce the overlap of activities, explaining: "all of the health systems understand the value, but competition gets in the way." Similarly, another stakeholder cautions that statewide HIE efforts will not be sustained until more commercial payers participate and contribute to funding the exchange.

Providers continue to experience a host of issues with EHR vendors. Providers note some of the costs associated with EHR adoption, and specifically those associated with their ability to use EHRs to meet MU requirements, are "hidden." They are unaware of these costs until after they purchase an EHR and the vendor indicates additional fees are necessary. One stakeholder tells of a physician in a solo practice who purchased a "MU" version of an EHR but, after purchasing the product, realized she could not exchange data with WIR without an interface. The physician was charged $1,000 for this interface. The cost of an interface can range from $1,000 to tens of thousands of dollars. These costs are particularly an issue for small providers who struggle to afford the initial cost of an EHR system and do not anticipate these other "hidden" costs.

Wisconsin's strict privacy laws protecting sensitive health information lead to a burdensome consent process for some providers and patients seeking to share any health information. Currently, state laws governing the sharing of mental health and other sensitive health information for treatment, payment, and health care operations is more restrictive than HIPAA. As a result, some health care organizations in Wisconsin are requiring patients to provide written consent at each encounter when the provider wants to exchange information or to obtain the patient's health information electronically from another organization's EHR. This is being done just in case the health information a provider accesses inadvertently contains behavioral health and/or sensitive health information. Consequently, health care trade associations are planning to seek legislation that harmonizes state laws with HIPAA so that no additional consent is required. Providers and patients find the extra process they must undertake to guarantee compliance with state law to be cumbersome.

WISHIN's challenge is to provide something of value for a changing market. Since Wisconsin is largely connected, WISHIN must offer unique and valuable services to providers, particularly to large health systems that may already be pursuing other options such as private HIE solutions. Although some stakeholders acknowledge the importance of HIE in improving care and reducing costs, they emphasize the importance of a strong business case to compel large health care systems to use an outside entity offering HIE services. Potential business cases for WISHIN services include exchange with the state's public health department and Medicaid program.

Additionally, some stakeholders believe the evolving role of ACOs may pose challenges to WISHIN's value proposition for analytics. They predict that ACOs could lead to creation of "silos of data" where health systems choose to maintain their own patient records within their own systems in order to coordinate care. However, WISHIN sees the advent of ACOs as an opportunity for partnership. The organization believes it can offer ACOs valuable infrastructure and services for care coordination and analytics because WISHIN will have data that crosses the boundaries of health systems and EHR systems. For this reason, ACOs may find that using WISHIN's existing network is a better investment than building their own, more limited network.

Conclusion

Wisconsin's HIE program capitalizes on existing HIE investments and partnerships between state, vendor and provider organizations. WISHIN is using an incremental approach to enable its services, and is leveraging existing investments and focusing on improving quality of care. Some of WISHIN's success derives from the Board's representation of a broad and inclusive group of public and private HIE stakeholders that has fostered an environment of trust. Many of its board members also have long-standing relationships rooted in previous, voluntary efforts to foster HIE in the state.

Due to the long history of EHR use and the high rate EHR adoption in Wisconsin, many providers report familiarity with EHRs and participation in HIE. Only a small number of independent and/or rural providers may still rely on fax/paper to exchange health information. Conversations with stakeholders seem to suggest that in a highly "connected" environment like Wisconsin, Direct has a limited market. Moreover, vendors have not fully integrated Direct into their products yet, resulting in workflow issues and reluctance by providers to fully embrace this solution.

While some stakeholder believe the development of ACOs may present a challenge to WISHIN's value proposition for HIE services and analytics, WISHIN believes ACOs are an opportunity for

partnership. WISHIN hopes ACOs will leverage state-level shared HIE services for infrastructure and data analytic capabilities that cut across health systems.

The strong presence of vendors and IDNs throughout the state, coupled with the large existing proportion of connected providers, suggests that a market-based solution with a limited set of services is the optimal HIE solution to meet Wisconsin's needs.

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[1] KLAS (June 2011). Health Information Exchanges: Rapid Growth in an Evolving Market, performance report (pp. 3).
[2] Public Law 111-5, American Reinvestment and Recovery Act of 2009 (ARRA).
[3] Office of the National Coordinator of Health Information Technology (2012). HITECH programs: State health information exchange cooperative agreement program. Retrieved from: http://www.healthit.gov/policy-researchers-implementers/state-health-information-exchange
[4] The Direct Project (October 2011). The Direct Project Overview. Retrieved from: http://wiki.directproject.org/file/view/DirectProjectOverview.pdf
[5] Ibid.
[6] State of Wisconsin (2000). Number of percent of total population by urban/rural categories for Wisconsin Counties. Retrieved from: http://www.doa.state.wi.us/docs_view2.asp?docid=418
[7] Worldmark Encyclopedia of the States (2010). Wisconsin – Population. Retrieved from: http://www.city-data.com/states/Wisconsin-Population.html
[8] Data provided by the Wisconsin Medical Society.
[9] Marshfield Clinic (2012). About Us [Internet]. Retrieved from: http://www.marshfieldclinic.org/patients/?page=about_legacy
[10] Centers for Disease Control and Prevention. (November 2011). Electronic Health Record Systems and Intent to Apply for Meaningful Use Incentives Among Office-based Physician Practices: United States, 2001–2011. NCHS Brief: 79. Retrieved from http://www.cdc.gov/nchs/data/databriefs/db79.htm.
[11] National Alliance for Health Information Technology (April 2008). Defining Key Health Information Technology Terms. Retrieved from: http://www.himss.org/content/files/Code%203_Defining%20Key%20HIT%20Terms%20-%20ONC%20-%204%2028%2008.pdf
[12] Office of the National Coordinator for Health Information Technology (February 2011). State HIE Strategic and Operational Plan Emerging Models. Washington, DC: Department of Health & Human Services. Retrieved from: http://www.nationalehealth.org/sites/default/files/onc_state_hie_strategic_and_operational_plan_models_full_study-_feb_2011.pdf
[13] WISHIN. (2012). Open Procurements: WISHIN HIE Request for Proposals. Retrieved from: http://www.wishin.org/Vendors.aspx
[14] Oakleaf M, Huegel D, Schmidt B, Caruth, B. (November 2011). State Tax Incentives for Economic Development in Wisconsin. Wisconsin Department of Revenue. Retrieved from http://www.revenue.wi.gov/ra/11incent.pdf