

STATES BOLSTER HEALTH INFORMATION EXCHANGE FOR MCH SYSTEMS

A confluence of factors—including advances in health information technology, public and private sector engagement, state and local success stories, and unprecedented federal funding—is setting the stage for unprecedented gains in healthcare quality and outcomes. At the center of the transformation: Widespread adoption, use, and sharing of electronic health records (EHRs) among providers, hospitals, data systems, laboratories, payers, and public health agencies. According to a 2011 report by Health Management Associates, “The electronic exchange of health information is integral to any healthcare transformation, both because of its potential to improve efficiency and quality and as a tool for monitoring system performance.”¹

As a result of federal funding, states are expanding their health information exchange (HIE) capacity with the goal of improving efficiency, affordability, safety, and quality of health systems. In a system of many moving parts, state immunization information systems play an early and pivotal role by helping providers and public health agencies achieve meaningful use of EHRs. Beyond the role that immunization systems play in helping providers achieve federal meaningful use requirements, states are expanding the HIE capacity of other maternal and child health (MCH) systems to achieve long-term public health benefits, including improved healthcare for children and more comprehensive population data for public health and providers. In addition to helping providers move along the continuum of EHR adoption, these MCH systems represent powerful tools for ensuring and monitoring public health. This brief provides an overview of federal and state HIE challenges and opportunities and highlights several states’ strategies for accelerating EHR adoption and electronic health information exchange.

ADDRESSING HEALTH IT ISSUES AND CHALLENGES

Public health agencies and MCH programs encounter a wide range of technical, legal, organizational, and funding challenges, such as those listed below.

- ❖ Achieving interoperability between EHRs and public health data systems and between MCH and other public health systems.
- ❖ Linking data stored in various MCH systems (see box on right).

Defining Terms. Appendix A defines the common terms used in this brief, including interoperability, health information exchange, and electronic health records.

Examples of MCH Data Systems

- Programs that screen MCH populations, such as Newborn Metabolic Disorder Screening, Newborn Hearing Screening, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and Home Visiting.
- Programs for infants and children with special healthcare needs, including genetic services and early intervention programs.
- Registry and data programs, such as vital registration, immunization, birth defects registration, and blood lead registries.

¹ M. Renee Bostick, Gary Crayton, Eliot Fishman, Elaine Peters and Vern Smith (Health Management Associates, Inc. for the National Governors Association Center for Best Practices State Alliance for e-Health). “Sustaining State Health Information Exchange: A State Toolkit,” March 2011. Available from <http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-health-publications/col2-content/main-content-list/sustaining-state-health-informat.html>. Accessed on April 4, 2012.



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- ❖ Ensuring patient confidentiality and data security.
- ❖ Ensuring that the healthcare workforce has the training and education to meaningfully use EHRs.
- ❖ Ensuring that public health and eligible providers meet key federal timelines and meaningful use requirements.
- ❖ Ensuring sustainability through long-term funding sources.

While many exchanges have a broader focus than children's health, MCH participation in statewide HIE initiatives provides important opportunities to embed public health data needs and tools into state strategies, as well as to ensure that MCH systems take part in statewide HIE reforms.

PROMISING PRACTICES IN MATERNAL AND CHILD HEALTH SYSTEMS

The combination of federal funds, emerging communities of practice, and rapidly developing science around standards and information technology has paved the way for HIE innovation. As providers and public health agencies integrate health information technology and exchange into children's health practices, they will benefit from the experiences and lessons learned in early adopter states.

Promising Practices in State Immunization Information Systems. Public health agencies have a powerful tool in immunization registries and systems. As a result of new federal guidelines, public health agencies can use registries to engage providers, facilitate their adoption and use of EHRs, and demonstrate early successes. In addition to engaging providers and facilitating meaningful use through immunizations, these systems can link to newborn screening and other MCH systems. The examples that follow provide options for advancing public health outcomes through changes to the immunization infrastructure.

Incorporating Registries and EHRs. Many states are moving away from a manual system—in which providers enter immunization data and submit it to the state—toward automatic, real-time submission of information through the EHR. The **Missouri Department of Health and Senior Services (DHSS)** is developing its system to enable providers to exchange immunization information directly with the state immunization system, rather than through manual data entry of immunization records. With federal health reform funds to support its efforts, DHSS is enabling providers to meet meaningful use requirements for submission of immunization data and laying the groundwork for a comprehensive statewide immunization system.² The new system is expected to increase the number of facilities that provide updated and standardized information to DHSS, resulting in a more comprehensive and current immunization registry. In addition to improving data flow to public health agencies, the move to comprehensive EHRs also benefits healthcare providers who will have more comprehensive patient information at the point of care, as well as decision support and other tools, such as automated immunization reminders.

As a result of **New York's** 2006 immunization registry law,³ the state developed a statewide, mandatory, web-based immunization system to replace a system of regional registries. The law requires providers to

² Missouri Department of Health and Senior Services. "Missouri IIS Update." Available from <http://health.mo.gov/living/families/ruralhealth/blog/?p=626>. Accessed on April 4, 2012.

³ New York Public Health Law Article 21, Title 6, Section 2168. Available from http://www.health.ny.gov/regulations/public_health_law/section/2168/index.htm. Accessed on April 4, 2012.



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report immunizations within 14 days of administration, as well as past immunization history if not already reported by another provider. Based on the Wisconsin Immunization Registry platform,⁴ the New York State Immunization Information System (NYSIIS) now contains immunization data for 86 percent of children under the age of six who do not live in New York City. To facilitate real-time information exchange, the state is taking steps to replace manual data submission processes in favor of bi-directional data exchange between state departments of health and local health information exchanges across the state.

The NYSIIS provides a platform for integrating immunization records with other child health data. New York's Child Health Information Integration Project—CHI2—integrates child health data from various programs and data systems, including vital records, blood lead poisoning prevention, and early hearing detection and intervention. According to a summary of the proceedings at the 2010 ASTHO Immunization Summit, "The benefit of incorporating the immunization data with child health information is that it creates one system for integration with EHRs, it is a better use of limited funds and provides more comprehensive population data for both public health and providers."⁵

Exchanging Registry Data Across State Lines. Ensuring public health functions for an increasingly mobile society calls for information exchange within and across state lines. The **Wisconsin Department of Health Services** shared its immunization registry platform with about 16 states. With similar systems and capabilities, these states move closer to exchanging data across state lines; however, although technical issues have been resolved, legal barriers persist. Immunization data is regulated by different state laws that may bar exchange of certain records. In response, some states have developed data sharing agreements that enable interstate exchange of immunization data. The Health Information Security and Privacy Collaboration's "Action and Implementation Manual" provides policy options for harmonizing state privacy laws and developing interstate consent policies.

Leveraging Existing Resources to Support and Sustain Immunization Strategies. With time-limited federal funding, states are identifying ways to leverage public and private resources to sustain HIE initiatives. The **Michigan** Care Improvement Registry integrates immunization records with other child health data, including well-child visits, newborn screenings, and early hearing, as well as vital records and clinical information from the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). In addition to pulling together data from disparate sources, Michigan's strategy also supports sustainability by providing various funding sources, including state registry funding, tobacco tax revenue, Medicaid match funds, and MCH Block Grant funding.

Promising Practices in Other MCH Systems. Like immunization registries, state MCH systems offer significant opportunities for advancing health information exchange among providers, public health, insurers, and other stakeholders. Although MCH systems offer rich sources of data, "data silos" and lack of interoperability between data systems often impede electronic exchange between different

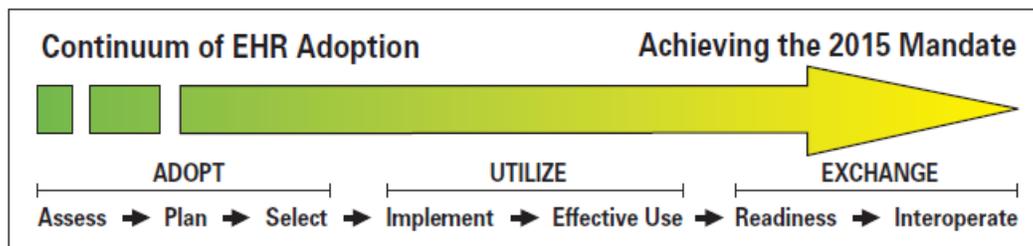
⁴ New York State Department of Health. "New York State's Experience Implementing a Statewide Immunization System," presented on July 18, 2011.

⁵ Association of State and Territorial Health Officials. "Summary: ASTHO Immunization Registries Summit." Available from: <http://www.astho.org/Programs/Immunization/Immunization-Registries-Summit-Summary/>. Accessed on April 4, 2012.

stakeholders and systems. Some promising state practices aimed at strengthening exchange are highlighted below.

Achieving Interoperability in Stages. **Minnesota's** legislature required hospitals and providers to have an interoperable EHR system in place by 2015. Achieving the mandate requires stakeholders to move through a continuum of stages, as depicted in Figure 1.

Figure 1. Minnesota Model for Adopting Interoperable Electronic Health Records



Source: Minnesota Department of Health, March 2011,
<http://www.health.state.mn.us/e-health/ehealthfactsheet11.pdf>.

To facilitate this transformation, the legislature appropriated \$14 million in grants and no-interest loans to support adoption in rural and underserved areas. In addition, the legislature required uniform data standards, nationally-certified EHR systems, and creation of a statewide implementation plan.

- As a linkage point with other systems, as well as between state and local public health, the Minnesota Immunization Information Connection offers important opportunities to bridge systems and facilitate data exchange. Department of Health staff are coordinating efforts with the state's largest health systems to exchange data from their electronic medical records through a real-time HL7 interface.
- The Minnesota Electronic Disease Surveillance System is consolidating and linking files, datasets and systems related to infectious disease surveillance, birth defects, trauma and injury, and lead screening. The integration effort is expected to improve data flow between the state health department and local health departments.

Bridging MCH Systems. States struggle with the technical, legal, and political issues that impede interoperability among various MCH systems. **Rhode Island** has taken the lead in bridging these systems through the creation of an electronic Child Health Profile. The Rhode Island Department of Health's (RIDOH) KIDSNET database links data from 10 programs, including immunizations, newborn development, vital records, lead poisoning, early intervention, home visiting, WIC, Newborn Bloodspot, and birth defects. Individual users and groups access KIDSNET through a secure web application according to their user agreement or data sharing agreement.⁶ Although the flow of data currently moves in one direction—from the healthcare provider to KIDSNET—RIDOH is moving toward a bi-

⁶ Rhode Island Department of Health. "KIDSNET: HL7 Implementation Guide for Immunization Transactions." Available from <http://health.ri.gov/publications/guidelines/KIDSNETHL7ImplementationGuide.pdf>. Accessed on April 4, 2012.



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directional data flow. As a result, KIDSNET will be able to populate and update external systems, an important step in the path to meaningful use.

Several states have focused on developing information exchange within state newborn screening (NBS) programs. The federal Maternal and Child Health Bureau's Effective Follow Up Program has supported the use of HIE in state NBS systems.

- ❖ **Indiana's** Department of Health maintains the Newborn Screening Tracking and Education Program (INSTEP)—a web-based application for collecting, managing, and sharing newborn health information. INSTEP enables providers, birthing facilities, and public health agencies to access integrated, population-based, real-time data on newborn screening results.
- ❖ **Utah's** Newborn Screening Clinical Health Information Exchange supports the integration and exchange of information across various public health systems, including the Department of Health's Immunization Registry and the Early Hearing Detection and Intervention Database.
- ❖ **New York's** CHI2 project is in the process of integrating data from various systems, including newborn bloodspot screening, early hearing detection and intervention (EHDI), vital statistics, and prenatal and neonatal intensive care services.

INSIGHTS FROM STATE PRACTICES

Moving forward, MCH systems offer an important key to a state's HIE success: With mature data infrastructure—capable of expanding to meet emerging HIE needs and requirements—MCH systems provide the technology to enable HIE reform, while also providing the tools to help states achieve important public health goals. As the states highlighted here demonstrate, public health agencies and MCH programs in particular have an important role in the state's overarching HIE strategy and implementation. Drawing from these examples, public health and MCH programs demonstrate the following insights.

First Things First: Focus on What's Required. Given the immediate need to help providers meet Stage 1 meaningful use requirements, states play an important role in facilitating exchange of information between the provider and the immunization registry. In addition, among the other meaningful use clinical quality measures, two refer to well-child care: childhood immunization status and weight assessment and counseling for children and adolescents. MCH programs therefore play an important role: In addition to facilitating EHR adoption among providers, an MCH perspective ensures that EHRs and HIE development address important public health data needs.

Start Small and Build Momentum. Review of best practices in statewide HIE efforts suggests that states should start small and build momentum through quick successes. According to a recent brief from Health Management Associates, "incremental progress builds momentum for long-term reform."⁷ Immunization registries offer powerful platforms for testing and innovation. Not only does this approach

⁷ M. Renee Bostick, Gary Crayton, Eliot Fishman, Elaine Peters and Vern Smith (Health Management Associates, Inc. for the National Governors Association Center for Best Practices State Alliance for e-Health). "Sustaining State Health Information Exchange: A State Toolkit," March 2011. Available from <http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-health-publications/col2-content/main-content-list/sustaining-state-health-informat.html>. Accessed on April 4, 2012.



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advance the state's HIE goals (by demonstrating success to providers and other stakeholders), but it offers significant public health opportunities to improve physician decision-making and improve healthcare quality.

Leverage Federal Resources to Achieve MCH Goals. Federal funds to support meaningful use of EHRs and patient-centered medical homes offer opportunities for states to advance important MCH public health goals. The Health Information Technology for Economic and Clinical Health (HITECH) Act, part of the American Recovery and Reinvestment Act of 2009, provided substantial incentives for health care providers who demonstrate meaningful use of certified electronic health records. States that consider medical home projects part of their Medicaid health information technology (HIT) strategies are allowed to use favorable Medicaid matching rates. HITECH funding phases out over time, however, so states will need to identify continued opportunities to leverage Medicaid and other federal funding sources for HIE/HIT activities.

Ensure MCH Participation in Statewide HIE Governance and Policy. Public health and MCH programs play an important role in a state's overarching HIE strategy. Immunization registries and other data systems offer important lessons that can inform other state data systems. In addition, MCH participation ensures that statewide HIE strategies and policies address public health needs and incorporate public health perspectives and tools.

Engage Partners Early and Often. Successful HIE initiatives rely on strategic and long-term partnerships between providers, payers, public health, and other stakeholders. E-health advisory committees and work groups can bring stakeholders together and develop a shared plan for moving forward. In addition, partnerships can provide an important funding mechanism for e-health initiatives.



APPENDIX A. GLOSSARY OF TERMS

Term	Definition
Electronic Health Records (EHR)	A real-time patient health record with access to evidence-based decision support tools that can be used to aid clinicians in decision making. The EHR can automate and streamline a clinician's workflow, ensuring that all clinical information is communicated. It can also prevent delays in response that result in gaps in care. The EHR can also support the collection of data for uses other than clinical care, such as billing, quality management, outcome reporting, and public health disease surveillance and reporting. ⁸
Health Information Exchange (HIE)	The electronic movement of health-related information among organizations according to nationally recognized standards. HIE supports the sharing of health-related information to facilitate coordinated care through the utilization of EHRs.
Health Information Technology (HIT)	The application of information processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of healthcare information, data, and knowledge for communication and decisionmaking. ⁹ Examples of health information technology include electronic medical records and e-prescribing tools.
Interoperability	The ability of two or more systems or components to exchange information and to use the information that has been exchanged accurately, securely, and verifiably, when and where needed. ¹⁰
Personal Health Record (PHR)	An electronic application through which individuals can maintain and manage their health information (and that of others for whom they are authorized) in a private, secure, and confidential environment. ¹¹

RESOURCES

ASTHO HITECH Act and Meaningful Use Resources

<http://www.astho.org/Programs/e-Health/HITECH-Act-and-Meaningful-Use/Main/>

Office of the National Coordinator for Health Information Technology

<Http://healthit.hhs.gov>

Centers for Medicare and Medicaid Services (CMS), Meaningful Use Overview

https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Meaningful_Use.html

CDC Meaningful Use Resources (timeline, fact sheets, funding, and tools)

<http://www.cdc.gov/EHRmeaningfuluse/resources.html>

⁸ *Ibid.*

⁹ Office of the National Coordinator for Health Information Technology. "Health IT Terms." Available from http://healthit.hhs.gov/portal/server.pt?open=512&objID=1256&parentname=CommunityPage&parentid=25&mode=2&in_hi_userid=11113&cached=true. Accessed on April 4, 2012.

¹⁰ E-health Initiative. Available from <http://www.ehealthinitiative.org/>. Accessed on April 4, 2012.

¹¹ *Ibid.*



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U.S. Department of Health and Human Services, Health Information Security and Privacy Collaboration, "Action and Implementation Manual"

<http://healthit.hhs.gov/html/hispc/AIMReport.pdf>

eHealth Initiative, "The State of Health Information Exchange in 2010: Connecting the Nation to Achieve Meaningful Use"

http://www.thcc2.org/PDFs/ehealth_meaningfull_use.pdf

State Alliance for e-Health, "Preparing to Implement HITECH: A State Guide for Electronic Health Information Exchange"

<http://www.nga.org/files/live/sites/NGA/files/pdf/0908EHEALTHHITECH.PDF>

California Healthcare Foundation, "Meaningful Use: Lessons Learned on the Path to EHR Excellence in Ambulatory Care"

<http://www.chcf.org/~media/MEDIA%20LIBRARY%20Files/PDF/M/PDF%20MeaningfulUseLessonsLearnedPathEHRExcellenceAmbCare.pdf>