

# A Practical Guide to Understanding Health Information Exchange, Assessing Your Readiness and Selecting Health Information Exchange Options in Minnesota

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**MINNESOTA E-HEALTH INITIATIVE & THE MINNESOTA DEPARTMENT  
OF HEALTH, OFFICE OF HEALTH INFORMATION TECHNOLOGY**



**Minnesota Department of Health, Office of Health Information Technology**  
P.O. Box 64882 85 East Seventh Place, Suite 220, St. Paul, MN. 55164-0882  
[www.health.state.mn.us/e-health/index.html](http://www.health.state.mn.us/e-health/index.html) | [MN.eHealth@state.mn.us](mailto:MN.eHealth@state.mn.us)





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## Feedback or questions?

Email  
[mn.ehealth@state.mn.us](mailto:mn.ehealth@state.mn.us)

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### **Staff and Advisors:**

Marty LaVenture, MDH Office of Health IT  
Jennifer Fritz, MDH Office of Health IT  
Priya Rajamani, MDH Office of Health IT  
Kari Guida, MDH Office of Health IT  
Donna Watz, MDH Office of Health IT  
Bob Johnson, MDH Office of Health IT  
Rebecca Johnson, MDH Office of Health IT  
Bill Brand, Public Health Informatics Institute  
Terri Conroy, Public Health Informatics Institute

### **Reviewers:**

Alan Abramson, HealthPartners, Co-Chair HIE Workgroup  
Joanne Sunquist, Hennepin County Medical Center,  
Co-Chair HIE Workgroup  
Greg Linden, Stratis Health  
Cindy Grolla, Northfield Hospitals and Clinics  
Cindy Uselman, Tri-County Hospital  
Beth Olson, Essentia Health  
Terry Tone, Affiliated Community Medical Centers  
Heidi Engle, Glacial Ridge Health System  
Kristen Flygare, St. Cloud Medical Group  
Linda Ridlehuber, REACH  
Mark Sandvick, SISU  
Mark Jurkovich, Minnesota Dental Association,  
e-Health Advisory Committee member  
Peter Schuna, Pathways Health, e-Health Advisory  
Committee member  
Marty Witrak, College of St. Scholastica, Co-Chair e-Health  
Advisory Committee  
Mark Sonneborn, Minnesota Hospital Association,  
Co-Chair Communications & Outreach Workgroup  
Becky Schierman, Minnesota Medical Association,  
Co-Chair Communications & Outreach Workgroup  
Laurie Beyer-Kropuenske, Minnesota Department of Administration,  
Co-Chair, Privacy, Legal & Policy Workgroup  
LaVonne Wieland, HealthEast, Co-Chair, Privacy,  
Legal & Policy Workgroup  
Linda Walling, HealthEast, HIE Oversight Review Panel

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# INTRODUCTION

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Throughout Minnesota and across the country, health care providers, payers, policy-makers and many other stakeholders are seeking ways to improve the quality, safety, and cost-effectiveness of health care and to increase the health status of communities. A major component of those efforts is the large-scale movement toward the use of health information technologies such as electronic health records (EHRs) and electronic health information exchange (HIE). Secure electronic movement of clinical information is becoming the standard practice in Minnesota.

If you are a health care provider, you have likely heard a lot about HIE but may not be sure of its value to your practice. Or, your interest in HIE at this point may be focused only on meeting meaningful use requirements. The reality is there is no “one-size-fits-all” answer. With the wide range of health care settings (community hospitals, clinics, long-term care facilities, dental offices, public health, etc.) and practice sizes, your options and approach may be as unique as your organization.

This guide is intended to provide an introduction to HIE and to help you better understand your choices for HIE in Minnesota. In addition, it is intended to provide you with some issues to consider as you assess your readiness to begin or expand HIE within your practice. This resource was developed by the Office of Health Information Technology at the Minnesota Department of Health, along with input from a variety of health and health care experts from across the state.

The HIE landscape in Minnesota and nationally is continually evolving and this guidance is available for you to review as needed to ensure your HIE strategies are keeping pace with your needs and available exchange options. This information will be updated as new information emerges (see <http://www.health.state.mn.us/divs/hpsc/ohit/hieguidance/index.html> for most recent version).

## What is Health Information Exchange (HIE)?

There are various definitions of HIE, but for the purposes of this guide HIE refers to the secure electronic sending and receiving of clinical health information in ways that the information can be understood by both the sender and the receiver of the information.

## What Services are Available to Securely Move Health Information Between Providers/Organizations?

Different approaches to HIE exist across the country such as EHR vendor-mediated, private-mediated (such as through a private business), or public-mediated (such as through government supported HIE services). Minnesota supports a market-based strategy for secure health information exchange that allows for private sector innovation and initiative and uses government oversight to ensure fair practices and compliance with state privacy protections. For providers in Minnesota, this means you have choices to make based on what services you need and what HIE services are offered in the Minnesota HIE market including EHR vendor or private-mediated options.

With HIE, providers and their health care partners can share relevant medical information in a uniformly-accepted way that protects the information and privacy of the patient.

## Why HIE Matters to Minnesota Providers

The following are five key benefits to consider as you evaluate the potential for implementing HIE in your organization:

### **Improved Health Outcomes Including Patient Safety**

As you know, there is a huge focus today on improving care outcomes and patient safety. HIE supports these efforts by enabling access to more accurate and up-to-date information on your patients, which can result in reduced medical errors and improved appropriateness and quality of care, especially during transitions of care.

## **Better Communication with Patients, Families, Caretakers and Third-Parties**

As a health care provider you may have heard these questions:

*“Why do I have to fill out this long medical history form? Don’t you know it already?”*

*“How does that compare to my test results three years ago?”*

*“We can’t believe our mom’s records haven’t followed her here. Do we really have to start all over with the tests?!”*

**Interoperability** is 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. Reference: <http://www.ehealthinitiative.org/>

The lack of a complete, current and accurate health record can frustrate both patients and providers. But imagine a scenario where before a patient comes into your setting, you have the patient’s health record (with appropriate consent) available electronically. This record could include the interactions with your own practice and relevant medical information including other physician visits, lab work, medications, etc. With HIE, providers and their health care partners can share relevant medical information in a uniformly-accepted way that protects the information and privacy of the patient.

### **Streamlined Practice Processes**

How much time does your staff spend locating past test results or other information, requesting and transcribing the information, deciphering handwriting, and performing duplicate tests? The cost in time and staff frustration is clear. HIE can enable you to reduce the administrative burden on your staff because tasks that are currently conducted manually—requesting results and patient summaries, sending referrals and receiving the reports, sending prescriptions, etc.—can be handled electronically. By streamlining workflow and reducing errors, practices often see a reduction in operating costs.

## Adherence to State Law

Over the last several years, Minnesota laws have helped to encourage higher rates of adoption of electronic health records and greater standardization in how information is recorded and exchanged electronically. The following are key pieces of state legislation that may affect your practice:

- *Minnesota's 2015 Interoperable Electronic Health Record (EHR) Mandate (Minnesota Stat. 62J.495)*: Requires that all hospitals and health care providers have an interoperable electronic health record (EHR) system by 2015. See <http://www.health.state.mn.us/e-health/hitimp/index.html> for "Guidance for Understanding the Minnesota 2015 Interoperable EHR Mandate."
- *HIE Oversight Law (Minnesota Stat. 62J.498-4982)*: Establishes certification requirements and oversight for organizations providing clinical meaningful use HIE transactions within Minnesota. See <http://www.health.state.mn.us/divs/hpsc/ohit/hieoversight.html> for more information on this law.

## Compliance with Meaningful Use

If your practice is seeking financial incentives for achieving "meaningful use" under the Centers for Medicare and Medicaid Services (CMS) EHR Incentive Program, it is important to know that some of the core objectives, as well as menu objective options for Stage 1 of meaningful use, involve the exchange of health information.

These include:

- e-prescribing\*
- Report clinical quality measures (eMeasures)\*
- Perform test of health information exchange\*
- Submit immunization information\*\*
- Submit reportable lab information (eligible hospitals only)\*\*
- Submit syndromic surveillance information \*\*

*\*Core: You must complete this transaction to receive the incentive payments*

*\*\* Menu: You may choose one or more of these to receive the incentive payments*

**Meaningful use** is the common name for the Medicaid and Medicare EHR Incentive Programs, which provides financial payments to eligible providers and hospitals that use certified health IT to meet specific objectives as specified by the program. The overall goals are to improve health in individuals and communities, improve the quality of care, and lower costs through the effective use of health IT.

The HIE requirements for meaningful use are likely to increase substantially in stages 2 and 3.

# ASSESS: Landscape

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In today’s complex health care environment, secure information exchange impacts all areas of your practice – from patient care to practice operations to reimbursement and more. When considering HIE you should first understand the types of information exchange that are of most value to you and who you would need to exchange information with to realize that value. This is your HIE landscape.

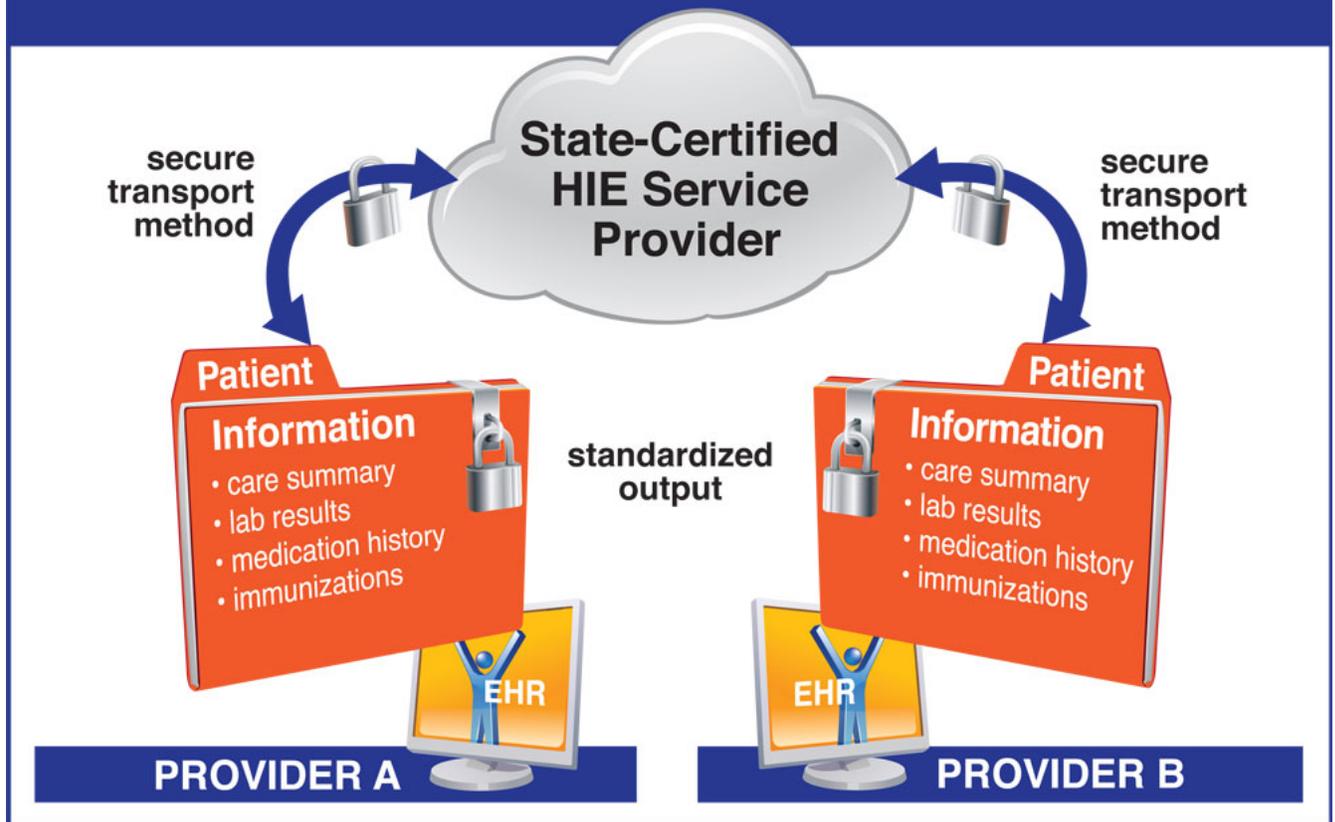
## Types of Information Exchange

Information exchange in Minnesota can generally be considered to be of two types: **push** and **pull**. Both types may involve more complex processes that occur behind the scenes of your EHR system, but the terms push and pull cover the main concepts. One key difference is *who* is initiating the exchange of information: for a push transaction the sender initiates the exchange of information, and for a pull the recipient initiates the exchange of information. You, as the provider, could be both the sender and the receiver, even in the same transaction. The definitions and scenarios below will help illustrate these concepts:

**Push:** This is a secure sending of information between two known entities with an established business relationship, such as a primary care provider and a specialist. These types of transactions typically relate to routine workflow and processes. A non-health care example of a push transaction would be sending an email.

**Pull:** This is a secure accessing of information that involves a query and a response. The query is the request for information about a patient, and the response is the retrieval of clinical information on the patient or information on where the clinical data can be found. For example, conducting a Google web search is a non-health care example of a pull transaction.

# Key Components of Health Information Exchange: Push Transactions



## Information Exchange and Your Practice

As you think about how HIE can benefit your practice, it may be helpful to first document the ways information moves into and out of your practice, whether manually (e.g., phone calls, letters, fax) or electronically (e.g., billing, e-prescribing). HIE opens up new possibilities so think about what you *want* to share, with *whom*, and what that information flow into and out of your practice might look like.

While meaningful use requirements may be the focus of your HIE planning, other types of exchange may also be very important to you. The following scenarios may help you understand the value of HIE for your practice or organization. You can find additional exchange options in the Information Exchange Priorities table

(<http://www.health.state.mn.us/divs/hpsc/ohit/hieguidance/resources.html>).



### **SCENARIO 1: Provider Sends/Pushes Immunization Record to the State Immunization Registry**

A child arrives for a routine appointment and the provider's office staff uses their EHR to determine that immunizations are due. After the vaccines are administered, the information is recorded in the EHR system, which automatically sends an update to MIIC (Minnesota Immunization Information Connection), Minnesota's immunization registry. (This is a Stage 1 and Stage 2 meaningful use example.)



### **SCENARIO 2: Laboratory Sends/Pushes Lab Results to Ordering Provider**

The contracted laboratory's LIS (laboratory information system) creates preliminary, final, and amended laboratory test results relating to a specific clinical test order. The LIS sends

each incremental lab test result to the ordering physician, which can be incorporated into that provider's EHR and flagged for review.

### **SCENARIO 3: Long-Term Care Facility Queries/Pulls for a Medication History**

A new patient arrives at a long-term care facility with only partial records and an incomplete medication history. Nursing staff at the facility obtain appropriate patient consent and submit a query through an intermediary such as a health information exchange service provider they have a contract with, which has a patient record locator service. The HIE service provider locates the patient's records, aggregates the results, and makes the results available to the long-term care facility. Results can be incorporated into the EHR either manually or automatically depending on the type of EHR used and workflow processes.



### **SCENARIO 4: Provider Queries/Pulls for Information for a New Patient**

Dr. Miller has a new dental patient, Ms. Jones. As part of the workflow for that patient, Dr. Miller needs more information about Ms. Jones' cardiac condition before scheduling dental implants. A secure message is sent to Ms. Jones's cardiology clinic requesting a summary of patient's current conditions and medications. The cardiology clinic provides (pushes) the information back to the dental clinic. (Note: this query is actually accomplished through two push transactions.)

HIE opens up new possibilities for timely and secure exchange, so think carefully about what you want to share, with whom, and what that information flow into and out of your practice might look like.

**SCENARIO 5: Provider Queries/Pulls the State Immunization Registry (compare to scenario 1)**

A child arrives for a routine appointment and the provider's office staff uses their EHR to automatically query the statewide immunization registry (the Minnesota Immunization Information Connection or MIIC). MIIC returns both a consolidated immunization history for the child and recommendations indicating that the child is due for a number of immunizations. After the vaccines are administered, the information is recorded in the EHR system, which automatically sends an update to MIIC on the vaccines that were administered.



While these information exchange transactions may sound simple, developing the EHR system capabilities to support them is complex. Rather than trying to build capabilities for every potential health information transaction, we recommend prioritizing those that will bring the most value to your practice or organization.

# ASSESS: *Readiness*

While there are many benefits to adding HIE capabilities to your practice, the process can significantly impact your staff and your operations. Before you move forward, evaluate your organization's readiness in the following key areas: organizational support and needs, workflow issues including training, privacy and security issues, technical infrastructure, and estimating costs and benefits.

## Organizational Support and Needs

Developing the organizational support for implementing and using HIE as part of the regular clinical workflow is critical. Leaders need to be able to articulate a clear picture of a single, integrated delivery system for the patient—a system that can provide all the information needed when it is needed for both the patient and the providers. Respected clinician champions can provide a vision of HIE that transcends any current problems and communicate their support. This is important because while an organization or practice will benefit from implementing HIE, not every staff person will benefit in the same way.

One way to establish a shared vision of HIE is to conduct a visioning session with staff to avoid basing your HIE requirements solely on current health information needs and uses. A visioning session removes the constraints of thinking only about what happens today and instead focus on imagining what is possible. During a visioning session, first document the current environment and then brainstorm what the environment might look like if any type of information exchange were possible. What would it look like? What information are you not sharing today that you would like to share or receive? You might uncover requirements you had not previously considered.

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Leaders need to be able to articulate a clear picture of a single, integrated delivery system for the patient—a system that can provide all the information needed when it is needed, through HIE, for both the patient and the providers.

## Workflow Issues

Implementing HIE may give you the opportunity to add new or improve existing workflows. Before you develop your business requirements, make sure you understand your organization's workflows look for ways to improve them.

- Engage a cross-functional group of staff that can identify priority information exchange scenarios, such as those found in the Information Exchange Priorities table (<http://www.health.state.mn.us/divs/hpsc/ohit/hieguidance/resources.html>). Then examine current workflows for those priority areas, looking for inefficiencies and how implementing HIE might address them. How is the health information integrated into the work setting and workflow? You may find opportunities in areas such as patient intake, patient exam, e-prescribing, and secure messaging among providers and between providers and patients.
- Look at non-clinical workflow considerations including privacy policies, staffing, training, etc. Does your staff need additional training to make HIE work? Do you have the right skills (capacity) in your staff to implement and maintain new HIE functionality? Are user roles clearly defined?



Make sure you know the difference between individual competencies and organizational capacity. This will be crucial for determining when to focus on planning and supporting staff training or when to address the changes that may occur in your practice culture and workflow.

## Privacy and Security Issues

Perhaps the most important consideration in HIE is that your patients maintain their trust in you to protect their health information and to use it to improve their care. Both Minnesota law and federal HIPAA privacy and security regulations establish the requirements and standards you must meet to maintain your patients' trust. For health information exchange, you and any intermediary you choose to move the health information, such as an HIE Service Provider, must adhere to both state and federal privacy and security laws and regulations.

The same process you use to evaluate HIE Service Providers regarding privacy and security practices can be used to evaluate your own practice's privacy and security policies and procedures. For example, patient consent will be required for you to share that patient's health information through the HIE Service Provider (as a transport intermediary). Your EHR must also be able to send a "flag" or other indicator that you have the patient's consent to share the information you are sending.

Before you make any decisions on privacy policies, procedures and practices, work with your privacy officer or legal counsel. Your EHR or other IT vendor may also be able to assist you with assess your health IT security policies, procedures and technical capabilities.

Security is the degree to which data, databases, or other assets are protected from exposure to accidental or malicious disclosure, interruption, unauthorized access, modification, removal or destruction.

### **HIPAA Privacy and Security Requirements**

You may be quite familiar with many of the federal HIPAA regulations, such as the need to have a Business Associate Agreement (BAA) with any organization or person who will have access to your patients' personal health information (PHI) other than your employees. However, moving into the world of electronic HIE requires a fresh examination of your policies and procedures in light of new ways to obtain and send PHI. *Consult with your privacy officer or legal counsel for a detailed analysis of these requirements.*

#### **Resources regarding HIPAA privacy requirements:**

<http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary/index.html%20>

<http://www.hhs.gov/ocr/privacy/hipaa/understanding/coveredentities/index.html>

[http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_privacy\\_and\\_security/1147](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_privacy_and_security/1147)

In addition to privacy protections, you must also ensure you are compliant with HIPAA Security Requirements. Security is the degree to which data, databases, or other assets are protected from exposure to accidental or malicious disclosure, interruption, unauthorized access, modification, removal or destruction (Reference: <http://www.ehealthinitiative.org/>).

There are administrative, physical, and technical safeguard components to security. Use a risk analysis and risk management process to examine your current security policies and procedures around each of these components as they relate to HIE. It is also a good idea to know what policies and procedures are in place for those organizations with which you will exchange information. You may be unintentionally exposing yourself to security risks if you are not aware of the safeguards those other organizations have, or don't have, in place.

Things to consider:

- **Administrative safeguards:** Do you have policies, procedures, and training in place, especially relating to security management processes, information access management, and workforce training? Are these evaluated in terms of effectiveness and being followed?
- **Physical safeguards:** Are effective measures being taken to protect patient health information on premises (to keep from being inadvertently seen by people not involved in the patient's care)? This includes facility access and control as well as workstation and device security.
- **Technical safeguards:** Do you have access, audit, and integrity controls, including the capability to limit access to authorized users and to audit that access? You must also be able to guard against unauthorized access to personal health information being transmitted over an electronic network. With safeguards such as authentication, encryption, firewalls, and internet security processes.

*Many of the issues can be daunting at first, so working with your IT staff and vendor(s) is essential.*

Resources regarding HIPAA security requirements:

<http://www.hhs.gov/ocr/privacy/hipaa/understanding/srsummary.html>

[http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_privacy\\_and\\_security/1147](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_privacy_and_security/1147)

A HIPAA Security Rule Toolkit is available at <http://scap.nist.gov/hipaa/>

## Minnesota Privacy Laws

While HIPAA provides a national floor for privacy protections, Minnesota law establishes a higher standard regarding patient consent for the release of health information.

For example, you must have a patient sign a consent/authorization to send the patient's health information to a third party, even for treatment, payment, or healthcare operations, except for emergency situations.

- *Note:* In some instances, you can rely on another Minnesota provider's representation that a patient has given his/her consent for you to release that person's health information to that provider. You do not need to have a paper copy of that consent, but must note the representation in your files.

While HIPAA provides a national floor for privacy protections, Minnesota law establishes a higher standard regarding patient consent for the release of health information.

Regardless of how patient information is exchanged—electronically or manually— you must comply with Minnesota privacy and consent requirements.

Resources regarding Minnesota privacy requirements:

<http://www.health.state.mn.us/e-health/privacy/index.html>



## Technical Infrastructure

Part of understanding your practice's readiness for HIE involves assessing your technical capabilities, primarily through your electronic health record (EHR). Specific considerations are listed below on EHR certification, EHR capabilities for sending, receiving and querying information, standards, and EHR vendor support. In addition, you should also refer back to the HIE scenarios to help you align what you want to do with your current or needed technical capabilities.

### EHR Certification

National EHR certification (not to be confused with Minnesota's HIE Service Provider certification, which is described in the "Plan & Select" section of this guidance) is intended to assure a provider and provider organization that their EHR system has capabilities and functionalities comparable to other EHR systems. With certification, providers can have greater confidence that the electronic health IT products and systems they use are secure, can maintain information confidentially, can work with other systems to share information, and can perform a set of well-defined functions, focused primarily on functions needed to meet meaningful use objectives. See [https://www.cms.gov/EHRIncentivePrograms/25\\_Certification.asp](https://www.cms.gov/EHRIncentivePrograms/25_Certification.asp) for more information on EHR certification and meaningful use.

The EHR certification process will continue to evolve as technological advancements are made that support clinical decision making, quality measurement and improvements in care. Certification establishes a baseline of credibility for EHR software, but if there is not a certified option available you should choose a product that has the standard functionality including, but not limited to: provide clinical decision support; support provider order entry; capture and query information relevant to health care quality, and exchange electronic health information with, and integrate such information from, other sources. Detailed EHR functionality can be found for ambulatory, inpatient, emergency department, behavioral health, and other settings at <http://onc-chpl.force.com/ehrcert>.

## EHR Capabilities for Sending, Receiving and Querying Information

To engage in HIE, you need to make sure your EHR system can:

- extract relevant information;
- package it in standardized formats;
- securely send to another organization either directly or through an intermediary such as an HIE Service Provider;
- receive information from another source, either directly or through an intermediary such as an HIE Service Provider, and
- store received information for later use or integrate the information into the EHR system/workflow.



Below are some typical capabilities your EHR should have. More specific examples of HIE transactions can be found in the Information Exchange Priorities table (<http://www.health.state.mn.us/divs/hpsc/ohit/hieguidance/resources.html>).

- *Sending*: Use your EHR to send information, including assembling or publishing the information into a standard format to be ready for exchange. This is similar to the push concept defined earlier.
- *Receiving*: Use your EHR to receive information from one of your trading partners; integrate the information into the EHR and workflow, which includes displaying and using it, storing and saving it, and translating (into other formats) if necessary. This would be an example of a “pushed” communication from another provider to your practice.
- *Querying*: Use your EHR to compile a query or message requesting information on a patient; send the query message to the HIE Service Provider or trading partner(s); receive information in response; integrate into EHR and workflow, which includes displaying and using it, sorting and saving it, and translating (into other formats) if necessary. This is similar to the pull concept defined earlier.

## EHR Vendor Support

Make sure you understand the level of support you have from your EHR vendor as they can help you assess your EHR system’s technical capabilities as it relates to HIE.

The following are some questions to consider:

- Does your EHR vendor have the skills and capacity to build, test and implement interfaces to HIE at a reasonable cost?
- Do they have experience in working with intermediaries such as an HIE Service Provider?
- Can they map data kept in proprietary formats into standard formats for exchange?

- Do they have a clear business plan for evolving their software to keep pace with national certification requirements?
- Does your EHR system/product support the current national standards for HIE?

You should also consider whether your EHR can publish relevant data to a patient portal or personal health record (PHR), which is an area expected to grow in the next few years as more standardized approaches to such tools emerge and consumer/patient demand increases.

## STANDARDS

Standards support interoperability, which is the successful exchange of information across health care settings. It is characterized by three areas: technical, semantic and process.

**Technical** (transmitting the data): Technical interoperability refers to hardware, software, networks, data transmission, and closely related functions like access and security management. Technical interoperability includes connectivity and messaging across the network and across disparate applications/systems. Technical interoperability in health care reduces the effect of distance between clinicians, whether in the same building or across the country.

**Semantic** (communicating the meaning of the data): Semantic interoperability means that information is communicated in a way that is understood by both the sender and receiver. Semantic interoperability requires standard representation of data and information using data content terminologies such as ICD-9, SNOMED CT® and LOINC®.

**Process** (best practices on the use of data): Process interoperability refers to the coordination of work processes, user role specifications, and the presentation of data and information within the context of workflows.

## Estimating Costs and Benefits

Adding HIE capabilities can streamline your practice operations, reduce administrative costs and improve the quality of care.

However, to develop an accurate return on investment (ROI) projection, or value on investment (VOI), make sure to correctly factor in all related expenses.



### Considerations:

- Determine whether you need to purchase an additional EHR module to support HIE. Once you know what information you need, consult with your EHR vendor to find out what options are available. The vendor may suggest adding a module or additional custom interface work.
- Make sure that work plans are properly scoped so you can develop a reliable budget. Ask what it will cost to support maintenance, hardware, upgrades or other infrastructure purchases.
- Factor in the staff-related expenses related to implementation, training, and ongoing support.
- Evaluate the best way for your practice to purchase HIE services. Some intermediaries such as HIE Service Providers may have a subscription model for charges, while others may charge per transaction. There may also be one-time, upfront charges in addition to recurring charges. Be sure to consider total costs, including the ongoing charges and not just the initial set-up fees, as this will be an important aspect of contract negotiations.
- Know whether the HIE service provider plans to offer the services you need in the future if they do not offer them now.

Adding HIE capabilities can streamline your practice operations, reduce administrative costs and improve the quality of care.

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## Minnesota's Approach to HIE

Minnesota's approach to health information exchange is to support a market-based strategy for secure HIE that allows for private sector innovation and initiative, yet uses government oversight to ensure fair practices and compliance with state privacy protections. One role the Minnesota Department of Health (MDH) specifically has in supporting HIE is facilitating the development of technical infrastructure called shared services, which provide the services and functionality to support and promote the seamless connections between health and health care providers. These services will include provider directory solutions, consumer preference and consent repositories and record locator services. More information will be provided as these services are developed.

Another role the Minnesota Department of Health has is to certify HIE Service Providers operating in Minnesota (providing clinical meaningful use HIE transactions or services). The certification process is intended to also promote seamless connections - providers or provider organizations using any of the State-Certified HIE Service Providers could exchange health information because the certification process requires the HIE Service Provider comply with specific requirements such as: ENHAC certification; establish data sharing agreements between the State-Certified HIE Service Providers, and compliance with national standards for exchange. The statewide shared services described above will also support the secure exchange of health information and interoperability between the State-Certified HIE Service Providers.

## **More about the State Certification of HIE Service Providers**

In 2010, Minnesota passed a law requiring any HIE service provider offering HIE services for clinical meaningful transactions to obtain a Certificate of Authority from the Minnesota Department of Health to operate in Minnesota. As part of this process, applicants submit a comprehensive application, participate in a public hearing, and respond to questions and/or concerns from stakeholders, including consumers, before becoming certified to operate in the state.

The intent of the oversight process is so that:

- Fragmentation of health information is prevented and information can follow the patient across the full continuum of care.
- HIE Service Providers properly protect patient privacy and security.
- HIE Service Providers adhere to nationally recognized standards.
- Minnesota has a reliable health information exchange infrastructure in place to allow Minnesota providers and hospitals to achieve meaningful use incentives and Minnesota's 2015 mandate for interoperable electronic health records.

## **Do I have to use a State-Certified HIE Service Provider?**

Using a State-Certified HIE Service Provider is recommended, but it is not required for meaningful use. However, using one does provide certain benefits not available from a non-certified organization including:

- Transparent knowledge of services offered and that the services are in accordance with national standards.
- The ability, over time, to exchange health information with other State-Certified HIE Service Providers, providing greater interoperability statewide.
- The HIE Service Provider has attested its policies and procedures are in compliance with both federal and Minnesota privacy laws, and it has confirmed it has privacy and security policies and procedures in place for protecting PHI (personal health information).

The most important thing you can do is choose an HIE Service Provider, or other type of intermediary, that best suits your needs and matches your HIE priorities.

## What are the State-Certified HIE Service Provider Options in Minnesota?

In Minnesota, two types of HIE Service Providers are being certified:

- **Health Information Organization (HIO)** is an organization that oversees, governs, and facilitates health information exchange among health care providers that are not related health care entities as defined in section 144.291, subdivision 2, paragraph (U), to improve coordination of patient care and the efficiency of health care delivery.

Reference: Minnesota Statute 62J.498, Subdivision 1, paragraph (h)

- **Health Data Intermediary (HDI)** is an entity that provides the technical capabilities or related products and services to enable health information exchange among health care providers that are not related health care entities as defined in section 144.291, subdivision 2, paragraph (U). This includes but is not limited to: health information service providers (HISP), electronic health record vendors, and pharmaceutical electronic data intermediaries as defined in section 62J.495.

Reference: Minnesota Statute 62J.498, Subdivision 1, paragraph (e)

One of the best ways to learn about the different State-Certified HIE Service Providers is to talk to other provider organizations that are already using them. You can also contact them to request more information and pricing information. For contact information and application details on all current State-Certified HIE Service Providers, visit

<http://www.health.state.mn.us/divs/hpsc/ohit/certified.html>.

Both types of HIE Service Providers typically offer nationally recommended services available throughout many parts of the country including:

- *Nationwide Health Information Network (NwHIN)*: A set of standards, services and policies to support the nationwide exchange of health information. These specifications were developed into an open-source software, called *CONNECT*, that organizations can use to securely link their existing health IT systems into health information exchanges. Many HIE vendors (or HIE service providers) have adapted the *CONNECT* software for their own needs and offer it as a service that is compatible with the federal specifications for robust HIE.

Minnesota has a unique approach to health information exchange: it supports a market-based strategy for secure HIE that allows for private sector innovation and initiative, yet uses government oversight to ensure fair practices and compliance with state privacy protections.

- *Direct secure messaging:* Direct secure messaging refers to using a set of protocols, known as the Direct Protocols, to securely push health information to a known receiver. It is commonly described as a type of secure email between two known entities; information is exchanged by way of the actual message or an attachment to the message. This is a more simple form of HIE that is useful for providers who do not yet need the more robust options such as the ability to query for patient records from unknown locations.

The following is an example of how a provider might utilize one type of HIE service provider, an HIO, that offers more robust HIE options such as query.

### **HIO Scenario: Patient Arrives at Emergency Room without Critical Medical Information**

A critically injured patient arrives at the emergency room without bringing essential medical information. To locate the information, the provider may send a query (through the HIO they have contracted with for HIE services) to local hospitals, pharmacies and doctors' offices who are also connected to that same HIO. These organizations' EHRs would identify records belonging to this patient and send information back to the HIO. The HIO may respond to the provider's initial query with a response noting which other providers in the HIO network have records for this patient, or it may send a response with the aggregated patient medical information. The provider can then review the patient's information and provide necessary lifesaving treatment.

The following example shows how a provider might utilize another type of HIE service provider, an HDI, that offers direct secure messaging services, a more simple form of HIE.

### **HDI Scenario: Patient Discharged from Hospital and Sent to a Rehabilitation Center**

A patient at a hospital is being discharged and sent to a rehabilitation center. The nurse identifies the care center the patient is being sent to, confirms that the care center can receive direct messages, and compiles a secure message using the direct protocols (that can be embedded in the hospital's EHR system) attaching the patient care summary in standardized or PDF format. The rehabilitation center receives the message and incorporates the care summary information into their EHR (or other patient record system).



## **What other options do I have for exchanging health information?**

In addition to using State-Certified HIE Service Providers to meet HIE needs, some providers are finding other standards-based ways to exchange health information directly with other providers/organizations. Alternative options might include EHR-vendor facilitated exchange, or other technology-facilitated exchange, that allow for point-to-point secure messaging within a network or affiliation of provider organizations using the same EHR system or technology. Some limitations of this type of health information exchange option are that it may be difficult to exchange information outside that system or affiliation for referrals, for instance. And, as the number of potential providers/organizations to exchange with grows, it can become cumbersome to set up unique connections each time. Being connected to a State-Certified HIE Service Provider can allow providers and provider organizations to move the clinical health information where it needs to go regardless of EHR system or affiliation and ensures greater interoperability statewide.

## Mapping HIE Priorities to Services Offered/Available

If you are interested in comparing the State-Certified HIE Service Providers, make sure you understand the services they each offer.

Below are a few of the scenarios presented earlier in this guide, as well as a few new examples. You will see that there are explicit HIE transactions listed within the scenarios to demonstrate what is occurring at different stages related to HIE. You can use this as a way to start matching what you have identified as your HIE priorities with what the State-Certified HIE Service Providers offer. Having this information will help you when you contact the service providers for more detailed information about their offerings including rates.

### **SCENARIO: Provider Sends/Pushes Immunization Record to the State Immunization Registry**

A child arrives for a routine appointment and through the EHR, and the State-Certified HIE Service Provider, the provider's office staff *determines that immunizations are due* (see "State-Certified HIE Service Provider HIE Transactions Offered" table for **ELECTRONIC REPORTING OF IMMUNIZATIONS**). After the vaccines are administered, the information is recorded in the EHR system, which, through the State-Certified HIE Service Provider, *automatically sends an update to Minnesota Immunization Information Connection (MIIC)*, Minnesota's immunization registry (**ELECTRONIC REPORTING OF IMMUNIZATIONS**).

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## **SCENARIO: Sending/Pushing Reportable Lab Conditions to the Minnesota**

### **Department of Health**

The laboratory creates a standard message, such as an HL7 message, containing reportable lab results to submit to the state public health agency - the Minnesota Department of Health. The lab *sends the reportable lab results* directly, through the State-Certified HIE Service Provider, to the Minnesota Department of Health's electronic laboratory reporting system and it sends the results to the ordering provider. As required, the provider may then use the clinic or hospital's EHR system, and the State-Certified HIE Service Provider, to *send the reportable lab results* to the Minnesota Department of Health's electronic laboratory reporting system (**ELECTRONIC SUBMISSION OF REPORTABLE LAB RESULTS TO PUBLIC HEALTH**).

## **SCENARIO: Provider Queries/Pulls for Information for a New Patient**

Dr. Miller has a new dental patient, Ms. Jones. As part of the workflow for that patient, Dr. Miller needs more information about Ms. Jones' cardiac condition before scheduling dental implants. A secure message, through the State-Certified HIE Service Provider, is sent to Ms. Jones's cardiology clinic requesting a summary of patient's current conditions and medications. The cardiology clinic, through the State-Certified HIE Service Provider, *provides (pushes) the information* back to the dental clinic. Depending on the format of the clinical care summary received, it may be incorporated into that patient's record at the dental clinic (**SUMMARY OF CARE RECORD EXCHANGE – E.G. CONSOLIDATED CDA OR CCD/CCR DOCUMENT**).

## **More Information on the Exchange of a Summary of Care (e.g. Consolidated CDA or CCD/CCR document)**

A summary of care record (sometimes also referred to as a Consolidated CDA or Continuity of Care Document/CCD or Continuity of Care Record/CCR document), is a patient health summary that providers eligible for meaningful use are required to exchange. However, providers not eligible for meaningful use often find this information useful to be able to exchange.

The summary of care record provides a means for one health care provider, system or setting to aggregate pertinent data about a patient and forward it to another provider, system or setting to support the continuity of care. Its primary use is to provide a snapshot in time containing the pertinent clinical, demographic and administrative information for a specific patient. For example, it can include: patient name, referring or transitioning provider's name and contact information, procedures, relevant past diagnoses, lab test results, vital signs, demographic information, care plan, and active medication list and allergy list. These types of information could be particularly useful in situations like those described in scenarios 3 and 4 earlier in the guidance ([hyperlink to the scenarios](#)) where the provider needs more detailed or complete patient health information.

The care summary provides a means for one health care provider, system or setting to aggregate all of the pertinent data about a patient and forward it to another provider, system or setting to support the continuity of care.

Most EHRs can produce, and all certified EHRs must have the ability to produce, a summary of care record that is machine-readable, meaning it is in a format such as XML that can be read by and incorporated directly into another EHR system. Often, a human-readable format, such as in PDF, can be produced as well. Both types can be exchanged between providers or settings.

### **Examples of each of these types of formats:**

XML format example

<http://www.health.state.mn.us/divs/hpsc/ohit/hieguidance/xmlccr.pdf>

PDF format example

<http://www.health.state.mn.us/divs/hpsc/ohit/hieguidance/pdfccd.pdf>

### **Things to consider:**

Questions for your EHR vendor:

- What formats of a summary of care record (Consolidated CDA or CCD/CCR document) can your EHR generate?
- How does your EHR incorporate the summary of care record (Consolidated CDA or CCD/CCR document) when you receive one?

Question for the HIE service provider you may sign up with as an intermediary:

- Do you need to determine what format your trading partners can accept/prefer before sending a summary of care record (Consolidated CDA or CCD/CCR document)?

# IMPLEMENTATION, MAINTENANCE, MEASUREMENT AND ONGOING IMPROVEMENT

At the state level, the Minnesota e-Health Initiative monitors and makes recommendations for statewide adoption of specific standards. See the “Recommended Standards” guide (<http://www.health.state.mn.us/e-health/reports.html>) for more information.

Once you have selected a method for implementing HIE, such as a State-Certified HIE Service Provider, you must plan for the implementation, determine how you will maintain and measure the system, as well as plan for ongoing improvements.

## Implementation

Create an implementation plan that meets your organization's needs. This plan might involve taking a phased approach that allows you to focus on certain clinical functions first and then adding other functions as the staff grows more comfortable. You should include within this plan:

**Issues tracking:** Identify problems or concerns so you can track their resolution or plan for workarounds.

**Testing and go-live plan:** Document how you will test the system prior to go-live. Testing should include technical, workflow and security functions. The go-live plan should include adequate support to immediately address any questions or issues.

## Maintenance

Make sure to monitor workflows and related policies to ensure staff has adequate support, including ongoing training. Pay close attention to the following:

**Security:** Carefully monitor security issues, especially when there are staff changes in your organization or your HIE trading partners change.

**Business and technical relationships:** Maintain strong relationships with your business (HIE trading partners) and technical (EHR and HIE vendors) partners. As the HIE landscape evolves and new HIE services are offered, you will need to evaluate what you need from both your business and technical partners.

**Standards.** Keep current on national standards to ensure your HIE technology and infrastructure are keeping pace with the industry. At the state level, the Minnesota e-Health Initiative monitors and makes recommendations for statewide adoption of specific standards. See the “[Recommended Standards](#)” guide for more information; this resource is updated annually.

## Measurement

You should measure or evaluate the impact of your HIE on a regular basis. The following are some questions to consider:

- Are you sending or receiving the right information?
- Is the information being used effectively both in your practice and that of your HIE trading partners?
- Are you managing the information you receive effectively, i.e. incorporating the information into the EHR and using in clinical practice?
- If you are reporting/sending information to external partners such as described in some of the earlier scenarios, i.e. sending immunization information to MIIC, are you getting back the information you need to continue to enhance patient care and improve your clinical/workflow processes?

## Ongoing Improvements

Initially, you may only use HIE for high value/priority areas, but over time you may want to add more functionality (HIE transactions). As you do, you may need to consider whether your existing HIE intermediary or service provider is adequate, or if you need to find another one. Use this guide as a resource for helping you evaluate those options.

# RESOURCES

## Information Exchange Priorities table

<http://www.health.state.mn.us/divs/hpsc/ohit/hieguidance/resources.html>

## Glossary of Terms and Acronyms Related to e-Health

<http://www.health.state.mn.us/e-health/glossary.html>

## For more information or questions

### **Minnesota Department of Health/Minnesota e-Health Initiative**

[MN.ehealth@state.mn.us](mailto:MN.ehealth@state.mn.us)

<http://www.health.state.mn.us/e-health>

### **REACH** (Regional Extension Assistance Center for Health IT)

[info@khareach.org](mailto:info@khareach.org)

<http://www.khareach.org>

### **ONC** (Office of the National Coordinator)

<http://healthit.hhs.gov>

[www.healthit.gov](http://www.healthit.gov)

*(Portions of this guidance were adapted from the 2011 CHIME publication*

*[“The HIE Guide for CIOs”](#))*

## Table 1: Information Exchange Priorities

Use this table to help clarify what specific types of health information currently move into and out of your practice, and to identify priorities as well as other considerations such as impact on workflow.

What information do you want to exchange?	Priority (i.e. high, medium, low or N/A)	Other considerations
<b>Electronic Prescribing (Meaningful Use)</b>		
Generate and transmit		
Exchange of eligibility details		
Drug formulary checks		
<b>Public Health Transactions (Meaningful Use)</b>		
Electronic reporting of immunizations to MN Immunization Information Connection (MIIC)		
Electronic submission of reportable lab results to MN Electronic Disease Surveillance System (MEDSS)		
<b>Laboratory- Related Transactions</b>		
Electronic clinical laboratory test ordering		
Electronic laboratory results delivery		
<b>Quality Reporting (Meaningful Use)</b>		
Reporting of clinical quality measures (ambulatory or hospital)		
<b>Summary of Care Record (Consolidated CDA, CCD, CCR) (Meaningful Use)</b>		
Summary of care record exchange		
<b>Radiology Transactions</b>		
Radiology results (reports)		