
Nebraska Strategic eHealth Plan

August 2012

Version 6

This edition of Nebraska's Strategic eHealth Plan lays out the state's vision, goals, and objectives, and strategies for implementing statewide health information exchange and supporting the meaningful use of health information technology. The plan focuses on the domains of adoption, governance, finance, technical infrastructure, business and technical operations. Key considerations and recommendations are also included. As the eHealth Council continues to address the development of health information exchange and the adoption of health IT, the plan will be updated. Frequent revisions are anticipated due the quickly changing health IT environment. Please check the Nebraska Information Technology Commission's website (www.nitc.nebraska.gov) for the most recent edition.

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Executive Summary

This strategic plan addresses the vision, goals, objectives and strategies for continued statewide health information exchange implementation and adoption in Nebraska. This plan has been designed with explicit recognition that it will be updated frequently in order to be responsive to the dynamic healthcare and HIT environment, consumer health care interests, and emerging improvements in health information management. Coordination of eHealth activities in the state is facilitated by the Nebraska Information Technology Commission's eHealth Council. The eHealth Council has taken the lead in developing the state's eHealth Plan.

On March 15, 2010, the State of Nebraska received \$6.8 million in funding from the Office of the National Coordinator's State Health Information Exchange Cooperative Agreement Program. Funding from this program presents a unique opportunity to expand health information exchange in Nebraska. This version of Nebraska's strategic eHealth plan addresses the most recent ONC requirements released between Feb. 8 and March 23, 2012. A companion operational eHealth plan addresses Nebraska's privacy and security framework, sustainability of health information exchange services, project management, evaluation, and tracking program progress.

Nebraska is, in many measures, a leader in health information exchange. Using a public utility model, Nebraska has leveraged private sector investments in health information exchange. The Nebraska Health Information Initiative (NeHII) serves as Nebraska's lead health information exchange, statewide integrator, and health information service provider (HISP). Utilizing a query model, NeHII has been operational since the spring of 2009 and now connects over 2,000 users in Nebraska and Iowa. By the end of 2012, NeHII expects to cover approximately two-thirds of the state's hospital beds. Legislation in 2011 authorized the Nebraska Department of Health and Human Services to work with NeHII to develop a Prescription Drug Monitoring Program. This functionality is now available. NeHII is working with the Nebraska Department of Health and Human Services to support the electronic exchange of public health information. NeHII is also piloting the use of Direct to deliver lab results to ordering physicians.

Nebraska also has one of the nation's only health information network exclusively serving behavioral health information exchange providers and clients. The Electronic Behavioral Health Information Network went live with its electronic health record and electronic practice management systems in Southeast Nebraska in the summer of 2011 and in the Panhandle region in the winter of 2011/2012. Health information exchange functionality is expected to go live in the spring and summer of 2012. NeHII and eBHIN have developed an innovative approach to managing consent which will allow for the exchange of behavioral health information with patient consent. NeHII and eBHIN also plan to pilot the use of Direct to exchange behavioral health information with patient consent between providers in each system.

Vision and Goals

The eHealth Council articulated the following vision and goals for eHealth in Nebraska in 2009.

Vision

Stakeholders in Nebraska will cooperatively improve the quality and efficiency of patient-centered health care and population health through a statewide, seamless, integrated consumer-centered system of connected health information exchanges. Nebraska will build upon the investments made in the state's health information exchanges and other initiatives which promote the adoption of health IT.

Goals

These goals will be achieved while ensuring the privacy and security of health information, which is an essential requirement in successfully implementing health information technology and exchanging health information:

- Using information technology to continuously improve health care quality and efficiency through the authorized and secure electronic exchange and use of health information.
- Improve patient care and consumer safety;
- Encourage greater consumer involvement in personal health care decisions;
- Enhance public health and disease surveillance efforts;
- Improve consumer access to health care;
- Improve consumer outcomes using evidence-based practices.

Health IT Adoption

The adoption of health IT, including electronic health records (EHRs), is a key building block for health information exchange. Adoption of electronic health records is growing, spurred by Medicaid and Medicare incentives as well as assistance from Wide River Technology Extension Center. The 2010 National Ambulatory Medical Care Survey found that 27% of office-based physicians in Nebraska had adopted a basic electronic health record system, compared to 25% of office-based physicians in the United States. Forty-four percent of office based physicians in Nebraska intended to apply for Meaningful Use incentive payments in 2011, compared to 41% of physicians nationally. As of July 2012, Wide River Technology Extension Center had signed up 1,058 primary care providers, with 771 providers at go-live and 175 providers attesting to Meaningful Use of electronic health records. Wide River Technology Extension Center ranked in the top 15 of regional extension centers nationally in the percent of primary care providers attesting to Meaningful Use. The Nebraska Medicaid program launched its EHR Incentive Program in May 2012. As of mid-July 2012, payments had been made to 18 Eligible Hospitals and 58 Eligible Providers, totaling almost \$8 million.

Objectives

- Encourage and support health IT in order to achieve meaningful use by providers.
- Build an appropriately-trained, skilled health information technology workforce.
- Encourage and support the adoption of personal health records.
- Improve health literacy in the general population.

Governance

Using a public utility model, Nebraska has leveraged private sector investments in health information exchange. The State of Nebraska is the prime recipient and fiscal agent for the State Health Information Exchange Cooperative Agreement Program. The state's eHealth advisory group, the NITC eHealth Council, is directly involved in addressing and making recommendations regarding privacy and security, interoperability, fiscal integrity, and business and technical operations for Nebraska's statewide health information exchange.

As the lead health information exchange, statewide integrator and health information service provider (HISP), NeHII is assuming the primary responsibility for implementing health information exchange in Nebraska through the State Health Information Exchange Cooperative Agreement program. NeHII has developed a governance structure which includes representatives of key stakeholders. Nebraska's behavioral health specialty exchange, eBHIN, has also developed a governance structure which represents key stakeholders.

As the State HIT Coordinator, Lieutenant Governor Rick Sheehy coordinates health information exchange efforts within the State of Nebraska and works with the eHealth Council to facilitate health information exchange efforts across the state. The roles and responsibilities of NeHII as the statewide integrator, the Health IT Coordinator, and the NITC eHealth Council have been defined in a Memorandum of Understanding.

Objectives

- Address issues related to governance, oversight, and financing of health information exchange.
- Ensure transparency, accountability, and privacy.

Finance

The development of health information exchange in Nebraska will require financing to both build and sustain the infrastructure to support eHealth at state, regional, and local levels. Business models for health information exchange will need to deliver value to a wide variety of stakeholders. Both NeHIE and eBHIN are developing business models to sustain operations after State HIE Cooperative Agreement funding ends.

Objectives

- Support the development of a sustainable business model for building and maintaining health information exchange in Nebraska.
- Leverage the state's role as a payer to support health information exchange.

Technical Infrastructure

Nebraska's technical architecture is based upon a federation of health information exchanges and other providers, following national standards. NeHIE is serving as the lead health information exchange, statewide integrator, and health information service provider for Nebraska, providing the technical architecture and creating a statewide health information exchange. NeHIE is a hybrid federated model in which providers send data to unique Edge Servers in standard transaction formats through VPN. Providers access the interoperability hub through the Internet to access information using a master patient index and record locator service. This type of architecture is simple and encourages innovation.

eBHIN is using a hybrid federated model, also known as a blended model. The Central Data Repository (CDR) will contain data which is common and relevant to all behavioral healthcare providers in the HIE. The Document Locator Service will be used to share other data and documents among providers for those consumers who have consented to participate. It is an index of the location of documentation held by participating organizations. The CDR proposed for this HIE system will include a centralized data base with the additional capability of maintaining wait list/referral management coordination functionality, easy access to longitudinal consumer data, e-prescribing, medication reconciliation, and lab results .

Objectives

- Support the development and expansion of health information exchanges to improve the quality and efficiency of care.
- Support the development of interconnections among health information exchanges in the state and nationwide.
- Promote the development of a robust telecommunications infrastructure.
- Ensure the security of health information exchange.

Business and Technical Operations

The following services are available or under development through NeHII:

- **Virtual Health Record.** NeHII's Virtual Health Record (VHR) provides a comprehensive electronic health record, including patients' patients' laboratory, radiology, reports, including history and physicals, consults, discharge summaries, visit records, medication history, problem lists, allergies, up-to-date eligibility information, and exams ordered by clinicians, and any encounter notes and referrals.
- **Electronic Medical Record.** NeHII offers a full EMR product which provides access to patient data from the NeHII exchange, , including patients' patients' laboratory, radiology, reports, including history and physicals, consults, discharge summaries, visit records, medication history, problem lists, allergies, up-to-date eligibility information, and exams ordered by clinicians, and any encounter notes and referrals.
- **E-Prescribing.** Prescribers have the ability to view patients' eligibility, prescription history, formularies, and generic and therapeutic alternatives, which are displayed when prescribing. Prescriptions are automatically checked for dangerous interactions and allergies and are delivered to the patient's pharmacy. Refills are approved with a few clicks from any computer
- **Interoperability HUB/Physician Connection.** EMR users can interface with NeHII through the Interoperability HUB/Physician Connection.
- **Immunization Reporting (In Development).** Users of NeHII's EMR can now send immunization records to the State's immunization registry, NESIIS. Later phases will allow users of NeHII's VHR to query the immunization registry and to send records to the immunization registry
- **PDMP Functionality.** Legislation in 2011 authorized the Nebraska Department of Health and Human Services to work with NeHII to develop a Prescription Drug Monitoring Program. This functionality is now available. Alert functionality may also be added, pending funding availability.
- **Secure Clinical Messaging Using Direct.** NeHII is piloting the use of Direct to deliver lab results to ordering physicians and is working with eBHIN to pilot the exchange of behavioral health information with patient consent through Direct. Other use cases are being explored.
- **Patient Access.** NeHII is working with SimplyWell to pilot patient access to health information.
- **Disease and Syndromic Surveillance (In Development).** NeHII is working with the DHHS Division of Public Health to implement disease and syndromic surveillance reporting functionality.

Additionally, the following services are/will be offered to behavioral health providers by eBHIN:

- Single point of data entry for Administrative Services Organization (ASO) documentation and EMR/EPM applications;
- E-Prescribing;
- Lab results;
- Clinical decision support;
- Aggregate database reporting capability;
- Standardized patient summary documents;
- Wait list, capacity reporting, and referral management;
- Payment capabilities.

Objectives

- Support meaningful use.
- Encourage the electronic exchange of public health data.
- Encourage the integration of health information exchange with telehealth delivery.

Legal/Policy

Privacy and security is paramount to the successful exchange of health information. The Health Insurance Portability and Accountability Act of 1996, known as “HIPAA,” provides federal protections for health information. The health information exchange privacy and security policies of NeHII and eBHIN have been developed to be in compliance with HIPAA. NeHII’s Privacy and Security Committee is charged with periodically reviewing and updating NeHII’s policies to address issues such as the exchange of public health data. eBHIN’s policies are also compliant with 42 CFR Part 2. eBHIN has developed an innovative consent process which is compliant with 42 CFR Part 2 and will allow for the exchange of behavioral health information across multiple treatment settings in the eBHIN HIE..

Efforts have also been undertaken to ensure that Nebraska’s laws do not present a barrier to the exchange of health information. In 2010 and 2011, four laws were passed which included provisions which would facilitate the exchange of health information, including legislation which authorizes the Nebraska Department of Health and Human Services to work with NeHII to develop a Prescription Drug Monitoring Program.

Consideration of consumer needs and concerns is essential for widespread adoption of health information exchange. Research indicates that Nebraskans have positive views about sharing health information electronically, but do have some privacy and security concerns. The widespread consumer support for health information exchange by Nebraskans is evidenced by NeHII’s opt-out rate of less than three percent. Consumer outreach materials are being developed by NeHII and eBHIN to provide consumers with information on these initiatives.

On March 22, 2012, ONC released a program information notice describing requirements for the privacy and security framework section of the plan updates. A corrected version was released on March 23, 2012. The program information notice addresses the core domains

of the *Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information*:

1. Individual access
2. Correction
3. Openness and transparency
4. Individual choice
5. Collection, use and disclosure limitation
6. Data quality and integrity
7. Safeguards
8. Accountability

The privacy and security framework section of the operational plan addresses these domains.

Objectives

- Continue to address health information security and privacy concerns of providers and consumers.
- Build awareness and trust of health information technology.

Introduction

Promise of Health IT. Health information technology (Health IT), often referred to as eHealth, promises to improve the quality of patient care and consumer safety as well as enhance public health efforts. The push for improving the quality of health care began over ten years ago. In 1999, a report on medical errors by the Institute of Medicine found that more Americans died from preventable medical errors in hospitals than from automobile accidents, breast cancer or AIDs. Health IT promises to:

- **Improve health care quality and efficiency.** Health care providers can better make clinical decisions and manage consumer care at the point of care with more complete consumer information. The need for duplicate tests will be reduced.
- **Improve patient care and consumer safety.** Medication and other errors may be reduced by the implementation of health IT because providers have timely and complete information.
- **Improve consumer outcomes using evidence-based practices.** Electronic medical record systems can provide evidence-based knowledge to clinical decision makers quickly and accurately at the point of care.
- **Encourage greater consumer involvement in personal health care decisions.** Personal health records can help consumers track their progress, record observations of daily living, manage their health care, and improve their quality of life.
- **Enhance public health and disease surveillance efforts.** Public health reporting is often done manually, rather than electronically. Electronic reporting can provide more timely information to public health officials and reduce the reporting burden of providers, increasing the prospects for timely and accurate reporting.
- **Improve consumer access to health care.** Many of Nebraska's rural counties lack access to specialists. Two-way videoconferencing and other telehealth technologies can make specialist services (including consultation, consumer counseling, and diagnostic services) available to residents of rural areas.

National Initiatives. The importance of electronic health records in improving the quality of care was officially recognized in 2004 by President Bush when he called for Americans to have electronic health records by 2014. The Office of the National Coordinator for Health IT has provided leadership for health IT efforts since its creation in 2004. Under President Obama, the push to adopt health IT and to reform health care has intensified. The American Recovery and Reinvestment Act established several programs to support the meaningful use of health information technology. Meaningful use of health information technology includes the use of electronic health records, e-prescribing, and connectivity to a health information exchange. A detailed definition of Meaningful Use has been developed by the Centers for Medicare and Medicaid Services.

Health IT Adoption and Barriers. Health IT adoption is growing, spurred by Medicaid and Medicare incentives as well as assistance from Wide River Technology Extension Center., The 2010 National Ambulatory Medical Care Survey found that 27% of office-based physicians in Nebraska had adopted a basic electronic health records, compared to 25% of office-based physicians in the U.S. Forty-four percent of office based physicians intended to apply for Meaningful Use incentive payments in 2011, compared to 41% of physicians

nationally. As of July 2012, Wide River Technology Extension Center had signed up 1,058 primary care providers, with 771 providers at go-live and 175 providers attesting to Meaningful Use of electronic health records. Wide River Technology Extension Center ranked in the top 15 of regional extension centers nationally in the percent of primary care providers attesting to Meaningful Use. The Nebraska Medicaid program launched its EHR Incentive Program in May 2012. As of mid-July 2012, payments had been made to 18 Eligible Hospitals and 58 Eligible Providers, totaling almost \$8 million.

Progress and Opportunities. On March 15, 2010, the State of Nebraska received \$6.8 million in funding from the Office of the National Coordinator's State Health Information Exchange Cooperative Agreement Program. Funding from this program presents a unique opportunity to expand health information exchange in Nebraska.

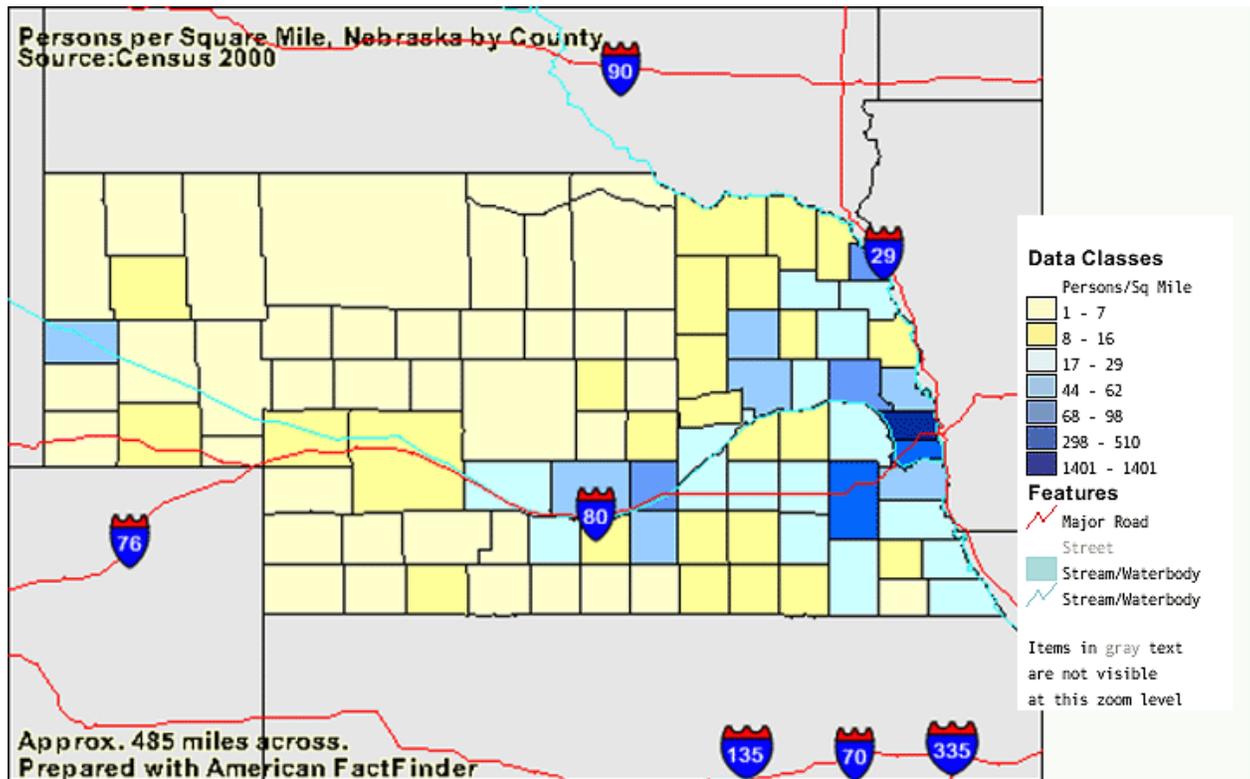
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Nebraska also has one of the nation's only health information network exclusively serving behavioral health information exchange providers and clients. The Electronic Behavioral Health Information Network went live with its electronic health record and electronic practice management systems in Southeast Nebraska in the summer of 2012 and in the Panhandle region in the winter of 2011/2012. Health information exchange functionality is expected to go live in the spring and summer of 2012. eBHIN has developed an innovative approach to managing consent which will allow for the exchange of behavioral health information with patient consent across treatment settings. NeHII and eBHIN are working on the specifications and procedures for the exchange of behavioral health information via Direct secure messaging.

Environmental Scan

Nebraska Overview

With a population of 1.8 million, Nebraska ranks 38th in population among the states. The state's relatively small population is spread over 77,421 square miles, giving Nebraska an average population density of 23 persons per square mile. This puts Nebraska 43rd in terms of population density. Much of Nebraska's population is concentrated in the eastern third of the state and along Interstate 80. Omaha and Lincoln are the state's largest metropolitan areas. The Omaha metropolitan area has a population of 838,855, and the Lincoln metropolitan area has a population of 298,012. Nebraskans joke that the third largest city in the state is the University of Nebraska's Memorial Stadium (which averaged 85,888 fans per game in 2009) on a football Saturday. Using a more traditional definition of city, the state's third largest city (outside of the Omaha and Lincoln metropolitan areas) is Grand Island with a population of 44,632. The population density of Nebraska's 93 counties is shown in the map below.



Source: Nebraska Department of Economic Development

Nebraska has received national recognition as a good place in which to live and do business. Nebraska ranked 9th in the 2010 *Forbes* listing of the Best States for Business and Careers. *Business Facilities* ranked Nebraska 2nd in employment leaders, 4th in quality of life, and 5th in education climate in 2010. Over 85% of Nebraskans aged 25 and older have at least a high school diploma, and 24% have a bachelor's degree or higher.

Both of Nebraska's medical schools, the University of Nebraska Medical Center and Creighton University, are located in Omaha. The Nebraska Medical Center which is affiliated with the University of Nebraska is the state's largest hospital with 635 beds. Nebraska has 102 hospitals with a total of 7,146 licensed beds. Nebraska also has a large number of critical access hospitals. Currently 65 hospitals in Nebraska are certified as critical access hospitals.

The Nebraska Health Information Project 2005 Data book provides the following counts of health care facilities in Nebraska:

Facility Type	Number
Acute Behavioral Health Care Units/ Hospitals	13
Long-term Care Facilities	232
Ambulatory Surgical Centers	37
Assisted Living Facilities	270
Home Health Agencies	123
Rural Health Clinics	111
Community Health Centers	5
Federally Qualified Health Centers	6
Indian Health Service Sites	6
Migrant Health Center	1

The Nebraska Health Information Project 2005 Data book provides the following counts of health care providers in Nebraska:

Provider Type	Number
All Physicians	3,202
Primary Care Physicians	1,254
Physician Assistants	569
APRN Practitioners	455
Certified Nurse Midwives	25
Registered Nurses	18,680
Certified Licensed Practical Nurses	779
Licensed Practical Nurses	6,520
Physical Therapists	1,017
Occupational Therapists	557
Chiropractors	383
Pharmacists	1,882
Psychiatrists	128

Psychologists	343
Master Social Workers	634
Certified Professional Counselors	806
Licensed Mental Health Practitioners	1,943
Certified Marriage and Family Therapists	75
Dentists	1,110
Dental Hygienists	804

On average, there are 70 primary care physicians per 100,000 individuals in Nebraska. In rural areas of the state, the average is 63 primary care physicians per 100,000 individuals.

	# of Primary Care Physicians/100,000 Population--2007
Rural	63
Urban	76
Nebraska	70

Source: Nebraska Department of Health and Human Services Office of Rural Health

Many counties in Nebraska outside the Omaha and Lincoln metropolitan areas face shortages of physicians. Depending upon the specialty, between 58 and 90 counties out of Nebraska's 93 counties have been designated in full or in part as state shortage areas. The number of counties in state designated shortage areas by specialty can be found in the following table:

State Designated Shortage Areas by Specialty	Number of Counties Eligible in Whole or Part	% of Counties in Shortage Area
Family Practice	58	62%
General Internal Medicine	87	94%
General Pediatrics	84	90%
OB/GYN	84	90%
General Surgery	71	76%
Psychiatry and Mental Health	90	97%

Source: Nebraska Department of Health and Human Services Office of Rural Health

Assessment of Current HIE Capacities

Nebraska is well-positioned to implement statewide health information exchange with NeHII serving as the lead health information exchange. Much of the ground work has already been laid. The following table summarizes the state's current status regarding governance, finance, technical infrastructure, business and technical operations, and legal/policy issues.

Domain	Status
Governance	Coordination of eHealth activities in the state is facilitated by the Nebraska Information Technology Commission's eHealth Council. NeHII and eBHIN have governance structures in place which include representation by key stakeholders.
Finance	NeHII and eBHIN are developing sustainable business models. Grant funding will accelerate and expand the development health information exchange. Expanded participation of providers in health information exchange will improve financial sustainability and should be encouraged.
Technical Infrastructure	<p>Utilizing a hybrid federated model in which providers send data to unique edge servers in standard transaction format through VPN, NeHII is providing the technical infrastructure for query exchange in Nebraska. NeHII has been live since 2009. NeHII has formed a separate organization, HIO Shared Services, to provide secure messaging via Direct and to provide services to other states and HIEs.</p> <p>eBHIN is going live with HIE query functionality in two regions of the state in the spring of 2012, and additional region by the summer of 2012, and will expand to other regions as time and resources allow. eBHIN uses a hybrid federated model. eBHIN's central data repository contains data which is common and in use by all behavioral healthcare providers in the HIE.</p>
Business and Technical Operations	<p>The following services are available or currently under development through NeHII:</p> <ul style="list-style-type: none"> • Virtual Health Record; • Electronic Medical Record; • E-Prescribing ; • Interoperability HUB/Physician Connection; • Immunization reporting (in development); • PDMP functionality; • Secure clinical messaging using Direct (through HIO Shared Services); • Patient access (in development); • Disease and syndromic surveillance reporting (in development). <p>Additionally, the following services are/will be offered to behavioral</p>

	<p>health providers by eBHIN:</p> <ul style="list-style-type: none"> • Single point of data entry for ASO documentation and EMR/EPM applications; • Standard care summaries; • E-Prescribing; • Medication reconciliation • Lab results; • Clinical decision support; • Aggregate database reporting capability; • Wait list and referral management; • Payment capabilities.
Legal/Policy	<p>Legal and policy issues are being addressed. In 2010 and 2011, four laws facilitating the exchange of health information were passed. NeHII and eBHIN have developed privacy and security policies and the necessary agreements. eBHIN has also developed an innovative approach to managing consent which will allow for the exchange of behavioral health information with patient consent across treatment settings..</p> <p>On March 22, 2012, ONC released a program information notice describing requirements for the privacy and security framework section of the plan updates on March 22, 2012. A corrected version was released on March 23, 2012. The program information notice addresses the core domains of the <i>Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information</i>:</p> <ol style="list-style-type: none"> 1. Individual access 2. Correction 3. Openness and transparency 4. Individual choice 5. Collection, use and disclosure limitation 6. Data quality and integrity 7. Safeguards 8. Accountability <p>The privacy and security framework section of the operational plan addresses these domains.</p>

Later sections of the plan address each of these domains in more detail.

The following table summarizes the status of priority areas, including EHR adoption, HIE development and adoption, Direct, e-prescribing, structured lab results delivery, summary care exchange, public health data exchange, and consumer participation.

Priority Area	Status
EHR Adoption	EHR adoption is growing. As of July 2012, Wide River Technology Extension Center had signed up 1,058 primary care providers, with 771 providers at go-live and 175 providers attesting to Meaningful Use of electronic health records.

	<p>Wide River Technology Extension Center ranked in the top 15 of regional extension centers nationally in the percent of primary care providers attesting to Meaningful Use. The launch of the Nebraska Medicaid EHR Incentive Program in May 2012 will likely further encourage EHR adoption. As of mid-July 2012, payments had been made to 18 Eligible Hospitals and 58 Eligible Providers, totaling almost \$8 million.</p>
HIE Development and Adoption	<p>Utilizing a query model, NeHII has been operational since the spring of 2009 and now connects over 2,000 users in Nebraska and Iowa. By the end of 2012, NeHII expects to cover approximately two-thirds of the state's hospital beds.</p> <p>Nebraska also has one of the nation's only health information network exclusively serving behavioral health information exchange providers and clients. The Electronic Behavioral Health Information Network is going live with its health information exchange functionality in the spring and summer of 2012.</p>
Direct	<p>NeHII began piloting the use of Direct to deliver lab results from Pathology Services, Inc. in 2012. Other use cases are also being explored, including the exchange of care summary information from eBHIN to NeHII providers.</p>
E-Prescribing	<p>The use of e-prescribing in Nebraska grew exponentially between 2007 and 2011. In 2007, just 34 physicians in Nebraska were e-prescribing. As of December, 2011, 1,962 physicians in Nebraska were e-prescribing. The number of total prescriptions routed has grown from 44,060 in 2007 to over 3 million in 2011. The percent of community pharmacies activated for e-prescribing has increased from 53% in 2007 to 90% in 2011.</p>
Structured Lab Results Delivery	<p>There are several options in Nebraska for eligible providers to send laboratory orders and to receive results electronically. These options include:</p> <ul style="list-style-type: none"> • NeHII; • Direct; and • Proprietary networks set up by independent reference labs. <p>As of the end of 2011, NeHII was receiving structured lab results from labs affiliated with 17 hospitals. Regional West Medical Center began sending structured lab results to NeHII in the spring of 2012. In 2012 and early 2013, 16 Critical Access Hospitals, 2 regional hospitals,</p>

	<p>and 1 research hospital are expected to join NeHII and will also begin sending structured lab results through NeHII. As of March 23, 2012, NeHII had over 21,358,125 unique lab results stored within the exchange. NeHII began piloting the use of Direct to send lab results from Pathology Services, Inc. in the winter of 2011/2012.</p>
<p>Summary Care Record Exchange</p>	<p>Health care providers in Nebraska have several options for exchanging summary care records, including:</p> <ul style="list-style-type: none"> • Summary care record exchange using query. As of March 2012, NeHII has over 700 physician users of the query model exchange. Inquiries to the NeHII system for January 2012 rose to 182,263 compared to 103,215 in January 2011 and 26,294 in January 2010. • Summary care record exchange using query functionality through eBHIN. The eBHIN HIE is going live in three regions of Nebraska in 2012-2013 and will be expanding to other regions as time and resources allow. • Summary care record exchange using Direct services with NeHII/HIO Shared Services as the statewide HISP. Physicians participating in NeHII can also send directed care summary exchange through NeHII and can use our HISP offering to send via Direct.
<p>Public Health Data Exchange</p>	<p>The number of providers submitting data to the immunization registry (NESIIS), the number of labs submitting data to the Nebraska Electronic Disease Surveillance System (NEDSS), and the number of hospitals submitting data to the State's syndromic surveillance system saw a significant increase in 2011. At the end of 2011, 450 providers were submitting to the state's immunization registry, up from 238 at the end of 2010. The number of labs submitting data to NEDSS increased from 12 in 2010 to 16 at the end of 2011, and the number of hospitals submitting data to the syndromic surveillance system increased from 6 in 2010 to 16 by the end of 2011.</p> <p>NeHII is working with the Nebraska Department of Health and Human Services Division of Public Health to transmit immunization records. Phase I (submission of immunization records from NeHII EHR users to NESIIS) of the three-phase project</p>

	<p>had been completed and testing was underway on Phase II (submission of immunization records to NESIIS via NeHII exchange) as of June 2012. Future developments may include disease and syndromic surveillance reporting through NeHII.</p> <p>In 2011, legislation (LB 591) was enacted which facilitates the electronic exchange of syndromic surveillance and immunization information in Nebraska and across state lines.</p>
Consumer Participation	<p>Consumers are supportive of health information exchange. Currently, over two million individuals have health information available through NeHII. Less than 3% of consumers have opted out. Both NeHII and eBHIN are developing consumer awareness materials. NeHII is also developing a pilot project to make health information available through SimplyWell.</p>

HIE Landscape

Nebraska's Approach

Delivering HIE capabilities affordably to a population broadly dispersed in rural areas has required a strategic approach to delivery. Nebraskans have responded to the challenges of providing services to a relatively small population over a large geographic area by leveraging existing resources, facilitating cooperation among various entities in the state, and by carefully allocating financial resources. Nebraska is applying these same principles to the development of health information exchange in the state.

The Nebraska Information Technology Commission created the eHealth Council in 2007 to facilitate coordination among these efforts and to make recommendations on how the State should support health information exchange efforts.

This is reflected in the State's vision for eHealth:

Stakeholders in Nebraska will cooperatively improve the quality and efficiency of patient-centered health care and population health through a statewide, seamless, integrated consumer-centered system of connected health information exchanges. Nebraska will build upon the investments made in the state's health information exchanges and other initiatives which promote the adoption of health IT.

The eHealth Council feels strongly that it is important to respect and leverage existing investments in health information exchange. During the development of the state's first strategic eHealth Plan in 2009, the Health Council invited all health information exchange initiatives to participate in planning efforts. Each participating exchange would receive funding based on rurality and population served. Two health information exchanges, NeHII and eBHIN, agreed to participate in State HIE Cooperative Agreement activities.

The eHealth Council also recognizes that financial resources for health information exchange in the state are limited and that health information exchanges would need to develop sustainable business plans. Data on health information exchange sustainability is limited. However, it is generally recognized that a health information exchange may need to serve a population of 1 million or more to be sustainable. With a population of 1.8 million, it is clear that Nebraska most likely cannot support more than two health information exchanges.

Successful health information exchanges need to offer value in order to get health care providers to participate. The eHealth Council feels that health information exchange efforts led by health care providers and insurers would be more responsive to the needs of health care providers and private industry and better able to develop value propositions than a state-run health information exchange. Query model exchange offers the greatest value to providers, payers, and consumers.

The eHealth Council also recognizes the importance of achieving a critical mass of users. Networks become more valuable as more users participate. Achieving a critical mass of users will also support efforts to build sustainability.

Participation in health information exchange is voluntary. Both providers and consumers can choose whether or not to participate in health information exchange. Health care providers also have a choice in how to participate in health information exchange. Health

care providers can participate through NeHII or develop the capacity for other options such as Direct. At this time, Nebraska is not considering any policy, regulatory or legislative actions to make participation in NeHII mandatory. The State of Nebraska feels strongly that the best way to encourage participation is to offer and demonstrate value.

These principles are reflected in the guiding principles included in Nebraska's Strategic eHealth Plan:

Statewide health information exchange in Nebraska will:

- *Utilize national standards and certification to facilitate meaningful use and interoperability.*
- *Utilize solutions which are cost-effective and provide the greatest return on investment.*
- *Utilize a sustainable business model for both the development of infrastructure and operations.*
- *Leverage existing eHealth initiatives and investments in Nebraska.*
- *Support the work processes of providers.*
- *Encourage ongoing stakeholder engagement and participation in development of the state plan and throughout all stages of implementation.*
- *Support consumer engagement and ensure the privacy of health information.*
- *Encourage transparency and accountability.*
- *Measure and report goal- and consumer-centered outcomes of investments of public dollars.*

Nebraska's plan for health information exchange incorporates and balances all of these principles.

Health Information Exchange Initiatives

Significant progress is being made in the development of health information exchange in the state. NeHII is serving as the lead health information exchange, statewide integrator, and health information service provider (HISP). Nebraska also has one of the nation's only health information exchanges focused on behavioral health providers and consumers. The Electronic Behavioral Health Information Network and NeHII are working to develop the policies, procedures, and technical infrastructure to exchange information utilizing Direct secure messaging capability.

NeHII

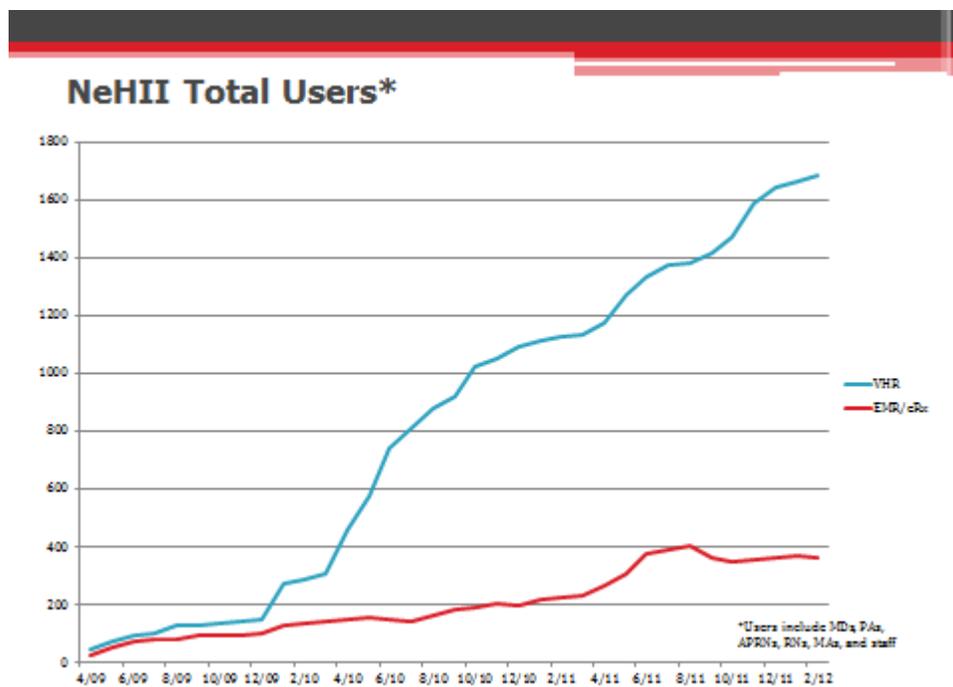
Utilizing a query model, NeHII now connects over 2,000 users in Nebraska and Iowa. By the end of 2012, NeHII expects to cover approximately two-thirds of the state's hospital beds. Legislation in 2011 authorized the Nebraska Department of Health and Human Services to work with NeHII to develop a Prescription Drug Monitoring Program. This functionality is now available. NeHII is also working with the Nebraska Department of Health and Human Services to support the electronic exchange of public health information. NeHII

(through HIO Shared Services) is piloting the use of Direct to deliver lab results to ordering physicians and is looking at other use cases.

NeHII was chosen to be the statewide integrator for several reasons:

- NeHII is the only health information exchange in Nebraska with a statewide focus on all types of providers and consumers.
- NeHII has successfully exchanged health information beginning with a pilot project in the Omaha area in the spring of 2009.
- NeHII is scalable and has the capability to serve any health care provider in Nebraska.

NeHII offers users the options of using either an EHR or a viewer called a Virtual Health Record (VHR). The Virtual Health Record is the most popular option with over 1600 users. The following graphs show the growth in NeHII users. As of March 2, 2012 over 2,000 users were participating in NeHII.



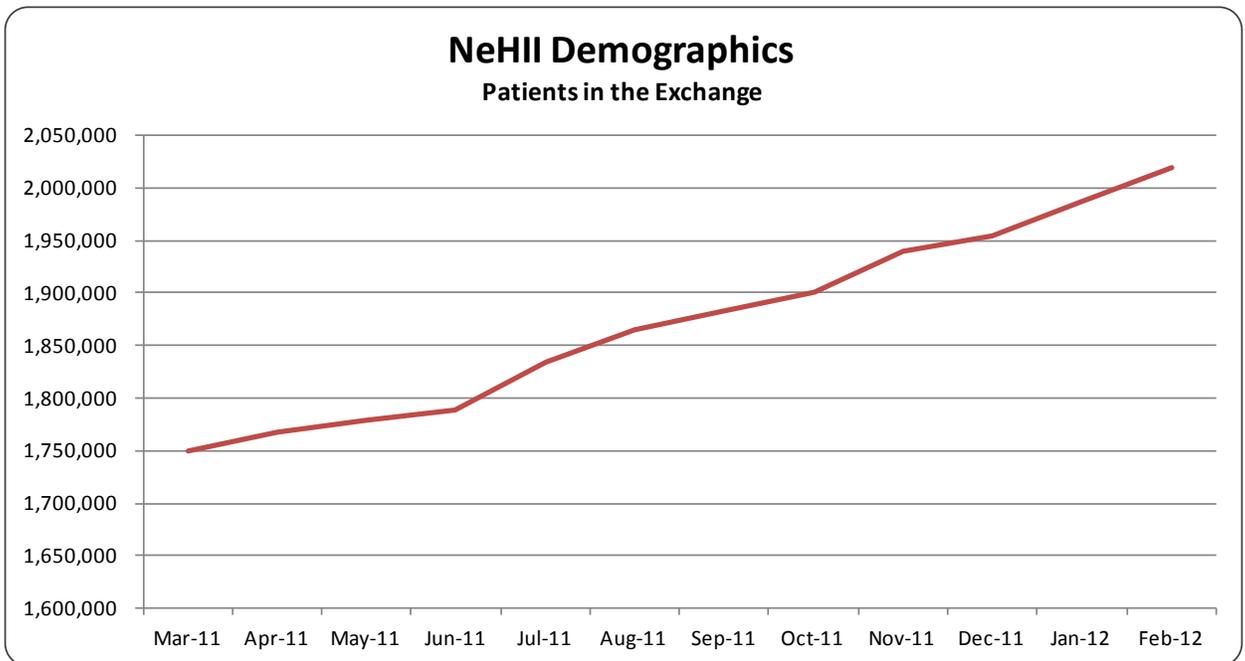
As of March 2012, eighteen hospitals in Nebraska and Iowa are participating in NeHII. NeHII participants include:

- Bellevue Medical Center - Bellevue, NE
- Bergan Mercy Hospital - Omaha, NE
- Children's Hospital and Medical Center - Omaha, NE
- Creighton University and Medical Center, Omaha, NE
- Great Plains Regional Medical Center –North Platte, NE

- Lakeside Hospital - Omaha, NE
- Immanuel Hospital - Omaha, NE
- Mary Lanning Memorial Hospital - Hastings, NE
- Memorial Hospital -Schuyler, NE
- Methodist Hospital - Omaha, NE
- Methodist Women's Hospital – Omaha, NE
- Midlands Hospital -Papillion, NE
- Nebraska Spine Hospital - Omaha, NE
- The Nebraska Medical Center - Omaha, NE
- Regional West Medical Center—Scottsbluff, NE
- Community Memorial Hospital - Missouri Valley, IA
- Mercy Hospital - Corning, IA
- Mercy Hospital - Council Bluffs, IA

Nineteen hospitals, including 15 Critical Access Hospitals, Boys Town National Research Hospital, Columbus Community Hospital, BryanLGH West and BryanLGH East have signed participation agreements.

The number of consumers included in NeHII's Master Patient Index has increased from over 20,000 in April 2009 to over 2,000,000 by March 2012. The graph below shows the growth in consumers with demographic data in NeHII.



NeHII is exchanging laboratory, radiology, medication history and clinical documentation information between hospitals throughout the state. In addition, insurance eligibility information is being sent and will be used to create a comprehensive patient summary. NeHII is providing e-prescribing functionality, linking hospitals and provider with pharmacy services. The following table illustrates the types of health data and the sources of health data currently available through NeHII.

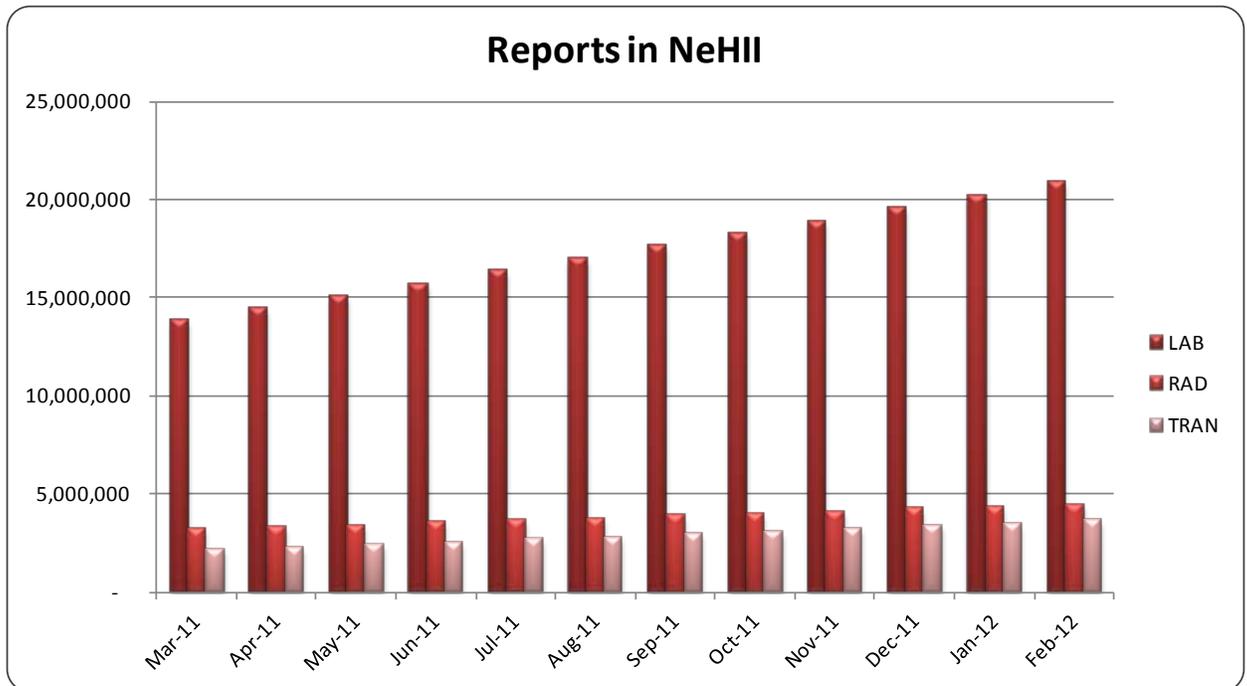
Data Sources

Sources of Data	ADT	Laboratory Results	Radiology Reports	Transcription Reports	Medication History
Hospitals					
Bellevue Medical Hospital	7/1/10	7/1/10	7/1/10	7/1/10	
Bergan Mercy Hospital	3/30/09	3/30/09	3/30/09	3/30/09	
Creighton University Medical Center	5/6/2011	5/6/2011	5/6/2011	5/6/2011	
Great Plains Regional Medical Center	6/7/10	6/9/10	6/9/10	6/9/10	
Immanuel Hospital	3/30/09	3/30/09	3/30/09	3/30/09	
Lakeside Hospital	3/30/09	3/30/09	3/30/09	3/30/09	
Mary Lanning Memorial Hospital	1/25/10	1/28/10	1/28/10	1/28/10	
Mercy Hospital	3/30/09	3/30/09	3/30/09	3/30/09	
Methodist Health	5/4/09	5/4/09	5/4/09	5/4/09	
Methodist Women's Health	6/15/10	6/15/10	6/15/10	6/15/10	
Midlands Hospital	3/30/09	3/30/09	3/30/09	3/30/09	
The Nebraska Medical Center	3/30/09	3/30/09	3/30/09	3/30/09	
Regional West Medical Center	1/30/09	03/27/2012	Q2	Q2	
Other Sources					
Surescripts					3/30/09
Rx Hub					3/30/09

Over 29.1M total results available through NeHII
871K new results available each month



Reports available through NeHII include laboratory, radiology, and transcription reports. The graph below shows the breakdown of reports in NeHII.



Users like having more complete patient information at the point of care, as evidenced by the following testimonials:

NeHII Testimonials

"I use it frequently and have come to depend on it. I typically see 2-4 new patients a day, and love being able to see what I can learn about them from NeHII."

When the patient arrived in the ER, I looked them up in our system (a 3 hospital system). The patient had 3 ER visits in 12 months. I then looked the patient up in NeHII and found the patient had 33 ER visits in 12 months. The treatment plan is much different for 3 ER visits versus 33 ER visits.

-Nurse Practitioner at large metro Omaha hospital ER

A patient was admitted to this ER and placed in room 3. Following the intake process and patient interview, I left the patient room and looked up the patient in NeHII. Much to my surprise, the patient in room 3 had been just discharged from another metro area ER only 30 minutes prior. When I re-entered the patient room and advised the patient I had information indicating s/he had been discharged from another ER earlier today, their comment was, "oh yeah, that's right".

-Physician Assistant at major trauma center in Omaha

A patient registered providing his name, date of birth and provided his son's medical insurance card. He was treated. Unfortunately he gave the registrar his former wife's mailing address where the bill was sent. The next time he came to the ER, he presented himself however he gave his name but his birth date was off by one month, one day and one year. The patient was treated in the ER and released. Using NeHII the system, the billing office was able to see the patient's actual birth date and correct mailing address. Having not had NeHII, our office would not have been able to locate the accurate mailing address and bill this patient for services.

-Medical provider at multi hospital system in Omaha

Implementation funding or seed capital for NeHII has been obtained through membership fees to the NeHII Collaborative, a grant from the Nebraska Information Technology Commission, and through Nebraska's State HIE Cooperative Agreement with the U.S. Department of Health and Human Services Office of the National Coordinator for Health IT.

eBHIN

The Electronic Behavioral Health Information Network (eBHIN) is currently developing an eHealth network to exchange behavioral health information among behavioral health providers in the Region 5 in Southeast Nebraska and Region I in the Panhandle. Regions 2, 3 & 4 have received a HRSA planning grant to determine the resources needed to

participate. Region 6 in Omaha is also planning to join the HIE Network. Phase I participants in Region 5 include Blue Valley Behavioral Health Center, Bryan Health Systems, CenterPointe, Child Guidance Center, Community Mental Health Center, Cornhusker Place, Family Services, Houses of Hope, Lincoln Medical Education Partnership, Lutheran Family Services, Mental Health Association, Region V Systems, and St. Monica's Home. The Region I deployment has begun with EPM deployment at Panhandle Mental Health Center and will continue to the following seven additional sites: Box Butte General Hospital, Cirrus House, CrossRoads Resources, Human Services, Inc., North East Panhandle Substance Abuse Center, Regional West Medical Center, and Western Community Health Resources. eBHIN partners have received several grants including a planning grant from the U.S. Department of Health and Human Services Agency for Healthcare Research and Quality (AHRQ) in 2004, an AHRQ Ambulatory Care Grant in 2008, a three-year Rural Health Network Development Grant from the U.S. Department of Health and Human Services' Health Resources and Services Administration in 2008, Region V Systems, and a grant from the Nebraska Information Technology Commission, a HRSA – Rural Health Information Technology Network Development Grant for the Region I expansion, ONC – RTI Grant for participation in the Behavioral Health Consortium and most recently, a HRSA Planning Grant for HIE Deployment in Regions 2,3 & 4 of the State.

eBHIN will utilize Direct secure messaging to exchange patient information with consent outside of the eBHIN exchange. eBHIN is utilizing the NextGen EMR application to order lab results and e-prescribe.

Nebraska Statewide Telehealth Network

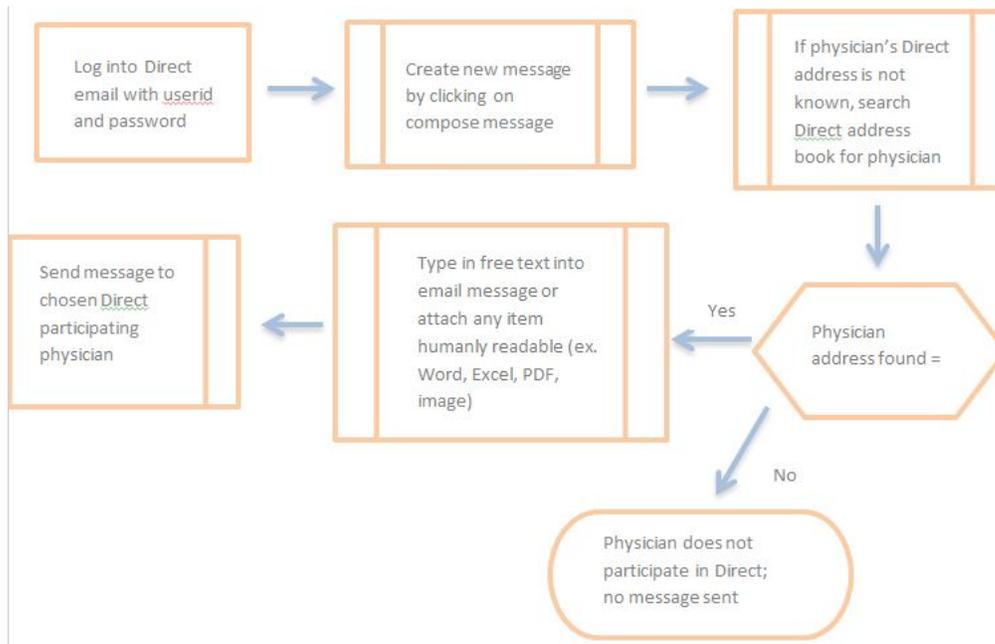
With 117 members, the Nebraska Statewide Telehealth Network (NSTN) connects nearly all of the state's hospitals and all of the state's public health departments. The Nebraska Statewide Telehealth Network is used for patient consultations, teletrauma, teleradiology, continuing medical education, and other applications.

The NSTN has implemented a centralized infrastructure to allow for expansion to mobile and desktop technologies, enabling physicians and others to benefit from more adaptable, cost-efficient and on-the-spot telehealth applications. The system, called Vidyo, provides a HIPAA compliant methodology for telehealth delivery via desktop and laptop computers, tablets and android technologies, that adapts to low bandwidth and still delivers a high definition picture for accurate diagnoses utilizing traditional internet connectivity. The NSTN is utilizing a combination of State HIE Cooperative funding and US Department of Health and Human Services, Health Resources and Services Administration, Telehealth Network Grant Program (CFDA: 93.211; Grant No. H2AIT16619) funding to develop and pilot this program with hospitals, physician offices, nursing homes, public health departments and other provider and patient sites. Mobile technologies also include the use of high definition handheld video cameras to be used in clinical consultation, both routine and emergent. This will allow for up-close examination of wounds and burns as well as other uses.

Direct

Direct enables a healthcare provider to electronically and securely push specific health information, such as discharge summaries, clinical summaries from primary care providers and specialists, lab results to ordering providers, or referrals over the internet to another healthcare provider(s) who is a known and trusted recipient. The key difference between regular e-mail and Direct is that messages are encrypted and digitally signed by the sender in compliance with the Standards and Interoperability Framework. Direct does not provide for search and discovery functions such as searching for health records for an unconscious patient in an emergency room.

NeHII (through HIO Shared Services) is acting as Nebraska's Health Information Services Provider and is offering Direct services. NeHII is also developing a provider directory which will contain demographic, digital certification, and routing information for every health care provider in Nebraska. Direct is a standalone product that is not connected to the NeHII VHR or EMR at this time. Physicians need a Direct e-mail address in order to receive or send a Direct message. The following diagram illustrates the Direct workflow:



NeHII is working with Pathology Services, P.C. in North Platte to pilot the use of Direct to deliver lab results to ordering providers. NeHII's primary use cases for Direct include:

- Independent labs sending lab data to providers or entities;
- Referrals between NeHII participants and the VA Hospital in Omaha;
- Patient information sharing of 42CFR Part 2 ePHI between eBHIN provider and NeHII provider;
- Patient information sharing between provider and patient via personal health record providers such as SimplyWell and Microsoft HealthVault;
- Patient information sharing across state lines.

Nationwide Health Information Network

Connectivity among state and regional health information exchanges and other entities will be provided through the Nationwide Health Information Network. The Nationwide Health Information Network will provide the standards, services, and policies to enable the development of a secure, nationwide, interoperable health information infrastructure. NeHII plans to connect to Nationwide Health Information Network when the Nationwide Health Information Network reaches a critical mass of users.

Options for Health Information Exchange

Providers in Nebraska have several options for exchanging health information and meeting meaningful use requirements: NeHII, eBHIN, and Direct. Wide River Technology Extension Center will provide information to critical access hospitals and eligible providers about connectivity options, including NeHII and Direct.

EHR Adoption

Increasing numbers of physicians and hospitals in Nebraska and nationwide are adopting electronic health records.

Physicians. The 2010 National Ambulatory Medical Care Survey found that 27% of office-based physicians in Nebraska had adopted a basic electronic health records, compared to 25% of office-based physicians in the U.S. Forty-four percent of office based physicians intended to apply for Meaningful Use incentive payments in 2011, compared to 41% of physicians nationally. As of July 2012, Wide River Technology Extension Center had signed up 1,058 primary care providers, with 771 providers at go-live and 175 providers attesting to Meaningful Use of electronic health records. Wide River Technology Extension Center ranked in the top 15 of regional extension centers nationally in the percent of primary care providers attesting to Meaningful Use.

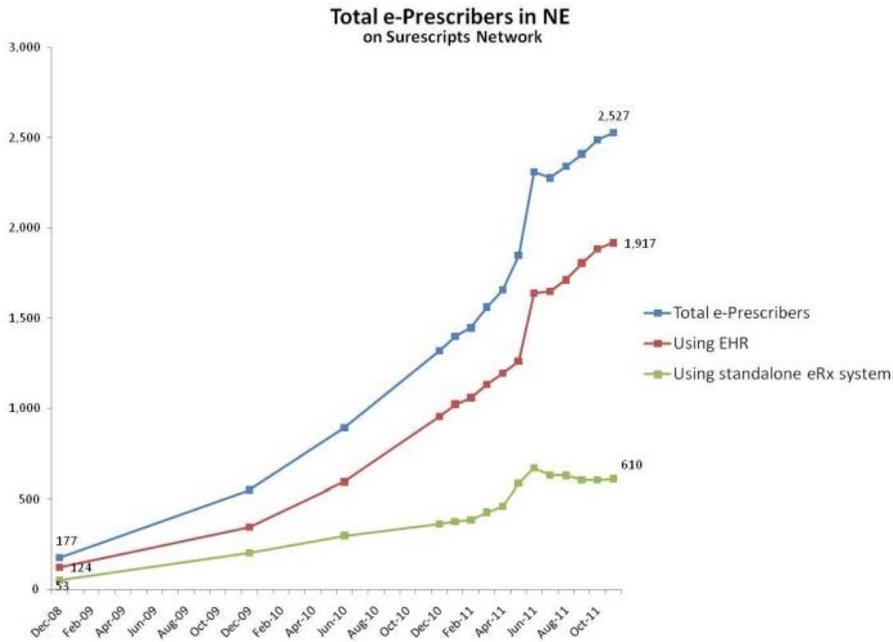
Critical Access and PPS Hospitals. According to a 2010 Hospital Association survey, 19% of hospitals had adopted basic electronic health records. In comparison, only 10% of Nebraska hospitals had adopted basic electronic health records. Fifty-eight percent of Nebraska hospitals intend to apply for Meaningful Use incentives in 2011. Fifty-three out of 65 Critical Access Hospitals in Nebraska are also working with Wide River Technology Extension Center.

E-Prescribing

Current Status

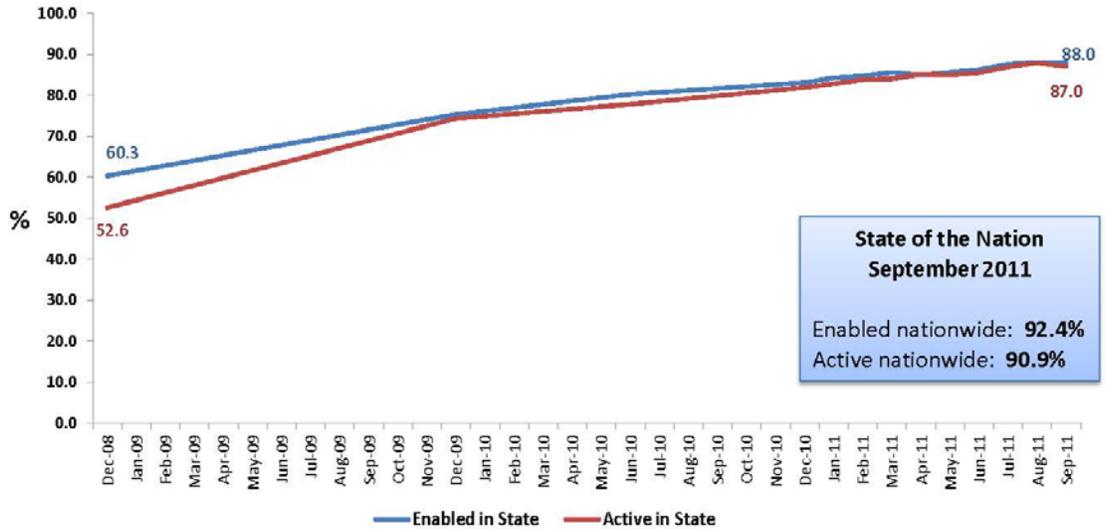
The use of e-prescribing in Nebraska grew exponentially between 2007 and 2011. In 2007, just 34 physicians in Nebraska were e-prescribing. As of December, 2011, 1,962 physicians in Nebraska were e-prescribing. The number of total prescriptions routed has grown from 44,060 in 2007 to over 3 million in 2011. The percent of community pharmacies activated for e-prescribing has increased from 53% in 2007 to 89% in 2011.¹ More recent data from Surescripts (April 2012) indicates that 409 Nebraska community pharmacies (97%) are on the Surescripts network; and 2,056 physicians are e-prescribing.

The growth in Nebraska prescribers and in the percent of community pharmacies participating in e-prescribing from December 2008 until October 2011 is shown in the following graphs.



¹ 2007-2010 Data from the 2010 and 2009 Nebraska Progress Report on E-Prescribing available from www.surescripts.com. 2011 data is from Surescripts data provided by ONC to State HIE grantees as of Nov. 2011.

Percent of Retail Community Pharmacies Enabled to e-Prescribe and Actively e-Prescribing on the Surescripts Network in Nebraska



Data Source: Surescripts

Additional e-prescribing statistics for Nebraska are presented in the following tables.

E-Prescribing 2011				
	% of physicians actively using an electronic health record to e-prescribe via SS network (SS)	% of physicians actively e-prescribing via SS network (SS)	% of new and renewal prescriptions e-prescribed (SS)	% of pharmacies participating in e-prescribing (Surescripts)
Nebraska	42.90%	56.10%	31.82%	88.80%
National avg.	44.30%	54.70%	31.89%	89.58%

Source: 2011 ONC State HIE Performance Data

Nebraska E-Prescribing Statistics 2007-2011

Measures	2007	2008	2009	2010	2011
Total prescriptions routed electronically ¹	44,060	171,541	650,069	1,581,140	3,064,510
% of eligible prescriptions routed electronically	0%	2%	7%	16%	-
Prescription benefit requests	13,525	67,206	798,022	2,537,148	-
Rate of response to benefit requests at year-end	30.4%	47.5%	76.98%	95.15%	-
% of total prescriptions represented by renewal response	9.38%	15.58%	22.36%	21.67%	-
Total estimated responses to medication history requests	--	--	213,443	996,254	
Physicians routing prescriptions at year end	34	148	296	999	1934
% of physicians routing prescriptions electronically	1%	6%	11%	28%	60%
Community pharmacies activated for e-prescribing at year-end	220	260	321	334	394
% of community pharmacies activated for e-prescribing	53%	60%	78%	82%	89%
% of patients with available prescription benefit/history information	46%	76%	87%	79%	

2007-2010 Data from the 2009 and 2010 Nebraska Progress Report on E-Prescribing available from www.surescripts.com. 2011 data from Surescripts data provided to State HIE grantees from ONC.

Between 2007 and 2011, Nebraska lagged the United States in most e-prescribing measures, including the percent of eligible prescriptions sent electronically, the percent of community pharmacies connected, and the percent of physicians routing prescriptions. However, Nebraska is closing the gap on many of these measures. The table below compares figures for Nebraska and the United States for 2009-2011.

Nebraska and US Measures (2009-2011)

Measure	Nebraska 2009	U.S. 2009	Nebraska 2010	U.S. 2010	Nebraska 2011	U.S. 2011
% of eligible prescriptions sent electronically	7%	12%	16%	20%	32%	32%
% of community pharmacies connected	78%	85%	82%	91%	89%	90%
% of physicians routing prescriptions	11%	25%	28%	36%	56%	55%

Data from the 2009 and 2010 National Progress Report on E-Prescribing available from www.surescripts.com. 2011 data is from ONC State HIE Performance Data.

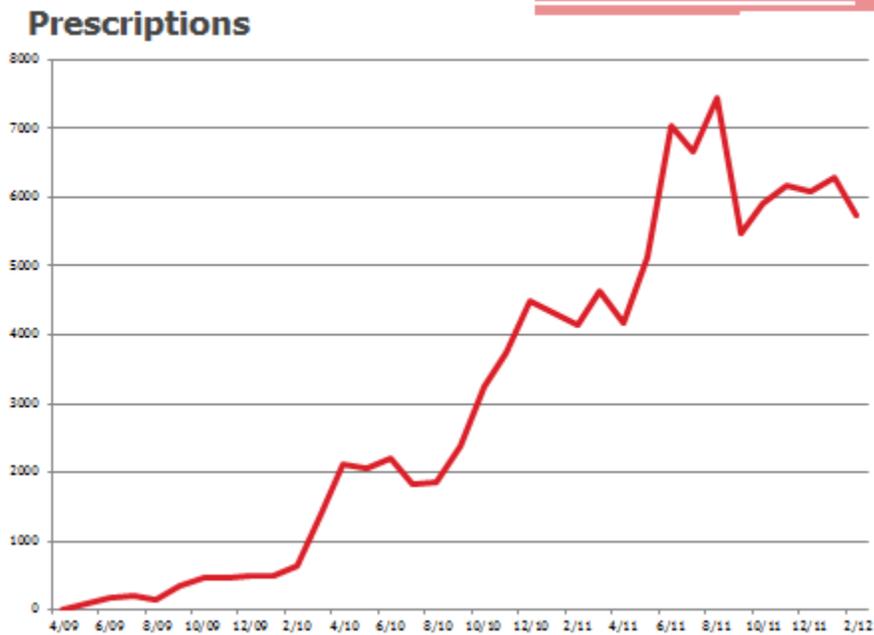
E-Prescribing Controlled Substances in Nebraska

The DEA currently allows electronic transmission of controlled substances if all security requirements are met. E-prescribing controlled substances has been piloted in a small number of states and is expected to become more widely used in 2013. Nebraska's statutes and regulations permit e-prescribing controlled substances. This will not present a barrier whenever e-prescribing controlled substances is available in Nebraska. The eHealth Council's E-Prescribing Work Group will continue to discuss this topic and make recommendations if necessary.

E-Prescribing through NeHII

NeHII began offering e-prescribing to physician participants in 2009. The number of electronic prescriptions routed through NeHII has increased from less than 500 prescriptions per month in 2009 to over 5,000 a month by February 2012. The following graph provides more detailed information.

E-Prescriptions through NeHII



In 2011, NeHII began offering services to six pharmacies. Pharmacies find NeHII facilitates the delivery of safe and efficient prescription services, the administration of immunizations, and durable medical equipment billing. Although the number of pharmacies participating in NeHII remains small, this service provides another potential value for pharmacies to utilize e-prescribing and health information exchange. Testimonials from pharmacists can be found below.

Pharmacy Testimonials—NeHII

“Amber Pharmacy was the first retail pharmacy in Nebraska to join the Nebraska Health Information Initiative (NeHII). Amber Pharmacy has been at the forefront of providing prescription services for chronic conditions for almost 15 years. As part of the NeHII network, we have enhanced the services provided to patients and healthcare providers and are able to deliver critical medications even sooner. Operationally, NeHII has been vital to the delivery of safer and more efficient services.”

-Michael R. Agostino, R.Ph , President

“Managed care clients are always looking for ways to control costs and improve the level of service they offer members. Using NeHII allows access to member prescription information and enables us to perform a comprehensive Drug Utilization Review. As a result, oftentimes we are able to eliminate unneeded medications, resulting in cost savings for members and managed care clients.”

-Terri Dill, Corporate Account Executive, Amber Pharmacy

“The Enrollment Department at Amber Pharmacy now has easy access to vital patient information. The availability of the information allows us to minimize the number of phone calls and faxes to healthcare

providers requesting patient information. Nebraska Health Information Initiative (NeHII) has reduced our administrative workload and increased data integrity.”

-Lana Starkey, Director Enrollment, Amber Pharmacy

“NeHII has been most useful in expediting our DME billing. Insurance companies are requiring chart notes to support the need for the patient's medical equipment. In the past we would fax the medical record department for this information and then wait 2-3 weeks to get them. Now we can access NeHII and have them within 2-3 days. This enables us to bill sooner and has made our whole process more efficient.”

-Laura Kilborn, Manager of the Durable Medical Equipment, Elmwood Pharmacy

“Using NeHII has improved our billing turnaround time immensely. Not having to wait for medical records means quicker billing and quicker payments.”

-Connie Buss, Elmwood Pharmacy

“Using NeHII, we are able to see patient medications, doses and method of administration so as to counsel patients. NeHII provides us the ability to enter immunizations we administer at the pharmacy. We have also begun a new process to update patient allergy information and enter it into NeHII. We can indicate the type of allergic reaction i.e. diarrhea, rash, difficulty breathing etc and have permanent record of this information and viewable by other NeHII users taking care of the patient.”

“NeHII is user friendly. It has been a fast valuable tool helping us to take excellent care of our customers.”

-Karen Neubauer, Pharmacy Administrator, Kubat Pharmacy

“NeHII is especially important for independent pharmacy/HME business owners. NeHII has eliminated the excessive time my staff spent tracking down vital information/documentation via phone calls, faxes etc. Issues we had previously with illegible provider signatures is made simple as NeHII enables us to determine, based on documentation, the name of the provider with the click of the mouse. Using NeHII as a resource has enabled us and other pharmacies to increase and grow business through improved turn around via instant access to data we need to care for our customers.”

-Matt Kubat, R.Ph., President/Pharmacist In Charge, Kubat Pharmacy

Prescription Drug Monitoring Program through NeHII

In 2011, Governor Heineman signed LB 237 which authorized the Nebraska Department of Health and Human Services to collaborate with NeHII to establish a prescription drug monitoring program. NeHII's functionality allows physicians to view a patient's medication history and other clinical information through NeHII's Virtual Health Record, enabling physicians to more safely prescribe controlled substances. Nebraska's approach to establishing a Prescription Drug Monitoring Program reflects Nebraska's relatively low drug overdose death rate. Nebraska's drug overdose age-related death rate per 100,000 people in 2008 was 5.5, the lowest rate in the country compared to the highest at 27. Nebraska also ranks lowest in rate of non medical use of prescription pain killers and 3rd lowest in the

kilograms of prescription pain killers sold. Only Illinois and the District of Columbia had lower rates in amounts sold.² Nebraska's Prescription Drug Monitoring Program is focused on improving patient care and **is not** accessible by law enforcement officials. Participation by physicians and other health care providers is voluntary.

The process for accessing medication history information through NeHII's Virtual Health Record is described below:

NeHII Prescription Drug Monitoring Program

Nebraska's Prescription Drug Monitoring Program uses the medication history information found on NeHII's Virtual Health Record (VHR). NeHII can only be accessed by providers (law enforcement does not have access) and the process is as follows:

- Physician logs into VHR with username and password.
- Physician searches for patient by entering first name, last name, and date of birth on the PT Index Page.
- Physician clicks on patient summary tab and scrolls down to medication history.
- Physician clicks on the query button to display all prescriptions that have been filled as provided by the PBM (pharmacy benefit manager).
- Benefit of NeHII is near real time and includes all medications, not just narcotics.
- The physician also has access to the complete medical history in order to make critical decisions regarding the use of pain relievers.

Testimonials from physicians using NeHII's PDMP functionality follow:

Physician Testimonials—NeHII Prescription Drug Monitoring Program

"When the patient arrived in the ER, I looked them up in our system (a 3 hospital system). The patient had 3 ER visits in 12 months. I then looked the patient up in NeHII and found the patient had 33 ER visits in 12 months. The treatment plan is much different for 3 ER visits versus 33 ER visits."

-Nurse Practitioner at large metro Omaha hospital ER

"A patient was admitted to this ER and placed in room 3. Following the intake process and patient interview, I left the patient room and looked up the patient in NeHII. Much to my surprise, the patient in room 3 had been just discharged from another metro area ER only 30 minutes prior. When I re-entered the patient room and advised the patient I had information indicating s/he had been discharged from another ER earlier today, their comment was, 'oh yeah, that's right.'"

² See <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6043a4.htm#tab2>.

-Physician Assistant at major trauma center in Omaha

“Now that providers are able to access NeHII for the statewide PDMP, they have access to not only the PDMP medication fill history but patient lab, radiology, transcribed reports, allergies, immunizations and much more. Being able to access medication history has been valuable in assisting me in managing the care of patients under my care providing continuity to care regardless of where the patient is served. It will be even more valuable when even more medical facilities participate in sharing data.”

-Medical Provider in medium sized Nebraska city.

“NeHII is a great tool for me to use, as an emergency department physician, to see what has been going on with the patient and their previous care prior to coming the emergency department. However, when a patient opts out of NeHII, I feel their choice to opt out adversely affects their care. NeHII is fluid, easy to use and straight forward.”

-Medical provider from multi-hospital system in Omaha

E-Prescribing through eBHIN

eBHIN will also be offering e-prescribing services for those who adopt the full EHR application. Medication reconciliation is available through both the HER and HIE applications. Behavioral Health providers may also obtain behavioral health EHR applications that are fully integrated with the eBHIN HIE.

Barriers

The NITC eHealth Council’s E-Prescribing Work Group identified the following barriers in a report submitted to the eHealth Council in the summer of 2009:

- Costs;
- Changes to work processes;
- Restrictions on e-prescribing controlled substances;
- Lack of education and training;
- Prior negative experiences;
- Need for continued standards development.

Costs

For both pharmacies and physicians, costs are a significant barrier to e-prescribing.

Pharmacies

- **Transaction fees (\$0.20 - \$0.35 per transaction).** Refills are free, so the transaction cost for prescriptions with multiple refills can be amortized over multiple dispensings. As the number of e-prescriptions grows, the cost per transaction may eventually be reduced. Transaction fees are charged by the pharmacy's software vendor. However, pharmacists argue that traditional methods of prescription generation and delivery have zero transaction fees for initial prescription fills and refill. Approximately half of the transaction fee goes to SureScripts, the intermediary e-prescribing network developed by the National Association of Chain Drug Stores (NACDS) and the National Community Pharmacists Association (NCPA). SureScripts merged with RxHub, a network founded by the nation's three largest PBMs.
- **Software fees.** Costs incurred by pharmacies include one time start-up fees to software vendor (~ \$500) and monthly charges to software vendor (\$30+ per month). SureScripts reports there are 35 – 40 e-prescribing packages available for pharmacies.
- **Additional optional fees.** Viewing patient information through NeHII or another health information exchange may involve additional fees.
- Fees mentioned above that are charged to pharmacies do not include costs incurred for pharmacy management software systems.

Physicians

E-prescribing software. SureScripts reports there are approximately 350 e-prescribing systems available for physicians. Examples include:

- A free stand-alone e-prescribing system is available through the National e-Prescribing Patient Safety Initiative (NEPSI).
- Through NeHII, physicians can subscribe to a bundle of services which include e-prescribing, an EHR lite, virtual health record, and the ability to push information to other providers for just over \$50 a month. Lower cost options are also available through NeHII.
- Full electronic medical record systems which integrate e-prescribing can cost from \$25,000 to over \$100,000 per physician.
- Sam's Club has begun offering electronic medical record systems for \$25,000 per physician, and \$10,000 per additional physician.

Medicare Incentives. Costs for many physicians may be partially offset by Medicare incentives for e-prescribing.

-
- Physicians may be eligible to receive incentive payments on office fees charged for their Medicare Part B who are also enrolled in a Medicare Part D Prescription Drug Plan.
 - Bonus incentives for Medicare Part B patients only are:
 - 2009 – 2010: 2%
 - 2011 – 2012: 1%
 - Penalties for not adopting e-prescribing (Medicare Part B patients only):
 - 2012: -1%
 - 2013: -1.5%
 - 2014 and beyond: -2%
 - Estimates of incentive payments resulting from e-prescribing for Medicare Part B patients are in the \$1,500-\$1,600 range per physician per year during 2009 – 2010.
 - Additional incentives of up to \$44,000 will be available to qualifying physicians for “meaningful use” of full electronic medical record systems beginning in 2011.

Changes to Work Processes

E-prescribing requires both physicians and pharmacists to make changes in their work processes, which can temporarily reduce productivity for some, cause others to return to traditional means of prescribing, and prevent others from adopting the technology.

Restrictions on Controlled Substances

The DEA currently allows electronic transmission of controlled substances if all security requirements are met. E-prescribing controlled substances has been piloted in a small number of states and is expected to become more widely used in 2013. Until e-prescribing systems which integrate the security requirements required for e-prescribing controlled substances are adopted by a majority of prescribers and pharmacies, physicians and pharmacies will need to maintain dual processes.

Lack of Education and Training

Another barrier is a lack of education, training, and knowledge of the e-prescribing process. Adequate training can reduce errors and frustration. Discussions between pharmacists, physicians, and physician staff can improve understanding of the e-prescribing process and identify ways to improve the process.

Prior Negative Experiences

Past negative experiences with e-prescribing can also be a barrier.

Need for Continued Development of Standards

Although much progress has been made in developing standards for e-prescribing and certifying e-prescribing systems, further development is needed in order to reduce e-prescribing errors and improve the e-prescribing process. A recent area of focus has been the development of standards for electronic prior authorization for prescription drugs. In October 2011, The National Council on Prescription Drug Programs (NCPDP) reactivated its Prior Authorization Workflow—to-Transactions task group. Industry pilots have also been initiated.

Errors

E-prescribing is reducing some types of medication errors, but may not eliminate all sources of errors. E-prescribing errors include but are not limited to: 1) wrong patient; 2) wrong drug; 3) wrong strength; and 4) wrong directions. These errors have resulted in some pharmacists turning off the e-prescribing software function. An informal survey of Nebraska pharmacists conducted by the Nebraska Pharmacists Association found that 75% of those responding currently use e-prescribing in some form, and that 65% of those responding that use e-prescribing experienced errors. Sources of errors identified included software functionality, untrained personnel in physician offices using the system, input errors by physicians, not being able to request refills via e-prescribing software, and system communication errors. A 2008 report from the Creighton Health Services Research Program funded through a Dyke Anderson Patient Safety Grant from the Nebraska State Board of Pharmacy (available at <http://chrp.creighton.edu/>) found that pharmacists reported both a reduction in some types of errors and new sources of errors due to e-prescribing. Pharmacists reported that e-prescribing reduced legibility problems and provided more accurate and complete information. New sources of errors included inaccurate information provided, system incompatibilities, and errors due to wrong drop down menu selections. It is believed that some of these new types of errors are due to incompatibilities that exist between physician e-prescribing software and pharmacy dispensing software.

Recommendations

The E-Prescribing Work Group made recommendations to the eHealth Council in 2009. The recommendations also included the following cautionary statement: The eHealth Council recognizes that patient safety is complex. While e-prescribing is an essential tool, it does not guarantee patient safety.

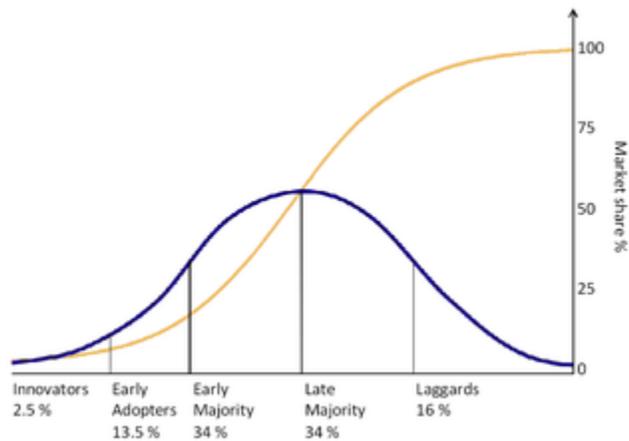
The Work Group's recommendations are listed below:

- Pharmacists, physicians, and the general public should be educated about the potential impact of e-prescribing with regard to:
 - Patient Safety – both recognized safety improvements and the newly emerging errors associated with the adoption of this technology;
 - Workplace efficiency in the pharmacy and physician's office – both improved efficiencies realized and new inefficiencies introduced in the local workplace context;
 - Workflow issues related to the migration of e-prescribing;

-
- Costs to pharmacists and physicians of implementing e-prescribing.
 - Training and education of physicians and pharmacists by professional associations, institutes of higher education and other venues about the proper use of e-prescribing technologies and processes in daily practice in order to reduce e-prescribing errors and optimize patient care quality should be encouraged.
 - Pharmacist access to patient information should be encouraged either through NeHII or other health information exchanges.
 - A forum to initiate a dialog among physicians, physician staff, pharmacists, vendors, and intermediaries on the e-prescribing process, costs involved, potential sources of errors, and best practices should be convened.
 - The State of Nebraska should seek ways to provide resource support for participation in e-prescribing to independent pharmacies.
 - Physicians should be provided information on incentive programs which support participation in e-prescribing and/or the implementation of EHRs.
 - The integration of e-prescribing with the use of EHRs in physician offices should be encouraged. Although stand-alone e-prescribing systems can be used effectively, research has shown that integration of e-prescribing with an EHR system often leads to greater improvements in quality of care.
 - The eHealth Council should establish a sustainable mechanism to identify and disseminate best practices related to patient safety and quality improvement in e-prescribing.
 - The eHealth Council and other stakeholders should work together to identify sources of e-prescribing errors and to address those sources.
 - The State of Nebraska and other stakeholders should support efforts to remove obstacles related to the e-prescribing of controlled substances.
 - Stakeholders in Nebraska and in the United States should encourage further development of e-prescribing standards to reduce errors. This should include standards that require compatibility between prescribing software and pharmacy dispensing software.
 - The State of Nebraska should explore connecting Nebraska's Medicaid program through its pharmacy benefit manager to Surescripts to provide benefit and prescription history information.

Encouraging Pharmacist Participation

In late 2011, 90% of community pharmacists accepted e-prescriptions. More recent data indicates that 97% of community pharmacies in Nebraska accept e-prescribing (April 2012), placing Nebraska pharmacies well into the diffusion curve. See the following adoption curve:



Source: Wikipedia

A 2012 study of Nebraska pharmacies which were identified by Surescripts as not accepting e-prescriptions by UNMC researchers provided valuable insights into barriers to e-prescribing and probable drivers.³ Forty-eight pharmacies were listed as not accepting e-prescriptions (Nov. 2011). Eighteen of these pharmacies were either not community pharmacies or were closed. Of the remaining thirty pharmacies identified as not accepting e-prescription, twenty-three participated in the survey. Ten pharmacies (43%) reported planning to implement e-prescribing. Nine pharmacies (39%) reported having no intention to e-prescribe in the future. Four pharmacies (17%) were already e-prescribing. The barriers to e-prescribing identified by both late adopters and those not willing to accept e-prescriptions were similar and were mainly initial costs and transaction fees associated with each new prescription. The research also indicates that local competition and physician demand are likely important drivers for pharmacies to begin accepting e-prescriptions, regardless of financial or other concerns.

As physician adoption in Nebraska grows, more pressure will be exerted on pharmacies to e-prescribe. Additionally, the long-awaited and highly anticipated certification of e-prescribing systems which will meet the DEA's requirements for e-prescribing schedule II drugs will also make e-prescribing more beneficial to both pharmacists and physicians, exerting even more market pressure on pharmacies.

The eHealth Council's E-Prescribing Work Group has recommended engaging physicians and pharmacists in community discussions. These discussions will hopefully lead to a better understanding of the e-prescribing process. The E-Prescribing Work Group studied e-prescribing data from Surescripts and ascertained that nearly all communities with e-prescribers also had pharmacies which accept e-prescriptions. The E-Prescribing Work Group felt that community discussions were the most effective way to deal with the rare instance in which a physician is unable to e-prescribe because the local pharmacy does not accept e-prescribing.

³ Lander, L., Klepser, D., Cochran, G., Lomelin, D., & Morien, M., (April 26, 2012). Barriers to Electronic Prescribing: Nebraska Pharmacists' Perspective. Available from <http://nitc.nebraska.gov/eHC/plan/reports/UNMCReportPharmacyParticipationApril2012.pdf>

Strategies

The eHealth Council reactivated the E-Prescribing work group in late 2010 to prioritize and flesh out strategies for encouraging the effective and efficient use of e-prescribing and for encouraging pharmacies to accept e-prescriptions.

The E-Prescribing Work Group's recommendations include:

- **Engaging prescribers and pharmacists in discussions in order to foster a better understanding of the e-prescribing process.** Several sessions were held as part of Wide River Technology Extension Center summits.
- **Conducting a survey or focus group of pharmacies which are currently not activated to accept e-prescriptions to better understand barriers to participating in e-prescribing.** This study was completed in the spring of 2012. The report is available at <http://nitc.nebraska.gov/eHC/plan/reports/UNMCRReportPharmacyParticipationApril2012.pdf>.
- **Conducting a study of e-prescribing errors to better understand the sources and prevalence of errors.** The study is scheduled to commence in the summer of 2012.

Additionally, NeHII is expanding its Professional Network to include pharmacists, dentists, and chiropractors in addition to physicians, nurse practitioners and midwives. Expanding the network should facilitate dialog with pharmacists on issues related to e-prescribing and medication management. The e-Prescribing Work Group will coordinate and leverage efforts with the NeHII Professional Network.

Goals and Tracking

We will monitor our progress by tracking:

- % of community pharmacies connected to the Surescripts network
- % of physicians routing prescriptions electronically

Structured Laboratory Results

Current State and Gap Analysis

As part of their plan updates due to the Office of the National Coordinator (ONC) in the late spring of 2012, all State Health Information Exchange were required to conduct a census of the hospital and independent laboratories within their respective states. The primary objective of the census was to determine the number of labs sending electronic lab results to ambulatory providers outside of their organization in a structured format in calendar year 2011. In addition, the ONC required that each lab be asked if they were following the Logical Observation Identifiers Names and Codes (LOINC) standards.

The ONC released the PIN (program information notice) with this requirement on February 8, 2012. While the ONC did not mandate a particular instrument or methodology, NORC did provide two brief instruments for the hospital and independent lab census nearly a month later on March 2, 2012. NORC recommended a standard mail survey using a modified Dillman approach to maximize response rate. They estimated a window of 30-60 days to complete such a process. At the time the recommendation was made, the due data for the report was 67 days out, which made it impractical to use the prescribed methodology. The UNMC research team (Donald Klepser, Gary Cochran, Lina Lander, and Marsha Morien) chose to conduct a telephone census. Using a singled trained caller and a script that incorporated the NORC surveys, it was expected that the majority of labs in the state could be contacted within 5 business days.

The following summarizes the results of our census:

116 hospital labs were identified using the CMS OSCAR system:

- 4 hospitals reported that they did not have a lab;
- 3 labs had disconnected phones;
- 16 of the identified labs were duplicates (had same phone number) or reported be serviced by another lab in the listing.

93 unique, operating, hospital laboratories were contacted:

- 9 labs (9.7%) were considered non-responders;
- 84 labs (90.3%) completed the survey.

Of the 84 completed responses:

Labs sending results to ambulatory providers outside of their organization electronically in a structure format in calendar year 2011:

Yes - 17 (20.23%)

No - 66 (78.57%)

Did not know - 2 (2.38%)

Of those submitting structured electronic results (n = 17), the proportion of results being sent to EHRs and web portals were:

	EHR	Web Portal
0%	1 (5.88%)	3 (17.65%)
1-24%	2 (11.76%)	2 (11.76%)
25-49%	2 (11.76%)	1 (5.88%)
50-74%	5 (29.41%)	3 (17.65%)
75-99%	5 (29.41%)	3 (17.65%)
100%	0 (0%)	0 (0%)
Do not know	2 (11.76%)	5 (29.41%)

Labs following LOINC standards for test results send to ambulatory providers outside of their organization in calendar year 2011:

Yes – 13 (15.48%)

No – 63 (75%)

Did not know – 8 (9.52%)

Of those submitting structure electronic results, 5 out of 17 (29.41%) followed the LOINC standards on at least some of the results sent during 2011.

Three of the four labs (75%) with more than 500,000 billable tests were sending results in a structured electronic format compared to 7 out of 21 labs (33.3%) billing for between 100,000 and 499,999 labs, and 7 out of 54 labs (12.96%) billing for fewer than 100,000 labs.

None of the lab managers, directors, and supervisors surveyed could confirm that their lab had implemented the LRI guide. (8 did not know and 76 responded no)

Similarly, no respondent could indicate which of the HL7 standards they were using.

42 Independent labs were identified using the CMS OSCAR system:

- 3 reported that they were not a lab;
- 1 reported that they did not send out lab results (research lab);
- 1 lab was closed.

37 Independent laboratories were contacted:

- 2 labs (5.41%) refused to participate;
- 2 labs (5.41%) did not respond to repeated contacts;
- 33 labs (89.19%) completed the survey.

Two corporations accounted for 18 unique lab sites. Results are presented for all 33 labs.

Of the 33 completed responses:

Labs sending results to ambulatory providers outside of their organization electronically in a structure format in calendar year 2011:

Yes - 25 (75.76%)

No - 8 (24.24%)

Did not know - 0 (0%)

Of those submitting structured electronic results (n = 25), the proportion of results being sent to EHRs and web portals were:

	EHR	Web Portal
0%	0 (0%)	0 (0%)
1-24%	1 (4%)	2 (8%)
25-49%	1 (4%)	1 (4%)
50-74%	9 (36%)	9 (36%)
75-99%	12 (48%)	11 (44%)
100%	2 (8%)	2 (8%)
Do not know	0 (0%)	1 (4%)

Labs following LOINC standards for test results send to ambulatory providers outside of their organization in calendar year 2011

Yes – 1 (3.03%)

No – 15 (45.45%)

Did not know – 17 (51.52%)

Of those submitting structure electronic results, 12 out of 25 (48%) reported that they did not know if they followed the LOINC standards on at least some of the results sent during 2011. Of the remaining 13 labs, 12 (48%) indicated that they did not follow the LOINC standards on any results.

One of the lab managers, directors, and supervisors surveyed could confirm that their lab had implemented the LRI guide. (13 did not know and 19 responded no)

Twelve labs, eleven from the same corporation, could indicate which of the HL7 standards they were using (HL7 2.3.1).

Laboratory Tests

In order to estimate the total number of laboratory tests done in Nebraska, Blue Cross Blue Shield of Nebraska and Nebraska's Medicaid program were asked to provide information on the number of claims for laboratory tests processed in 2009. According to its website, Blue Cross and Blue Shield of Nebraska insures or provides benefit administration for nearly 717,000 people. In fiscal year 2009, the Nebraska Medicaid program covered a monthly

average of 207,080 individuals. Combined these two payers cover approximately 924,080 individuals which is roughly 51% of Nebraska's population of 1,796,619 according to the U.S. Census Bureau's 2009 estimate. The total number of claims for laboratory tests processed by Blue Cross Blue Shield of Nebraska and Nebraska's Medicaid program was over 3,500,000. The table below summarizes the information from Blue Cross Blue Shield of Nebraska and Nebraska's Medicaid program.

Payer	# of Individuals	% of Total Population	# of Claims for Laboratory Tests
Blue Cross Blue Shield of Nebraska	717,000	39.9%	2,377,584
Nebraska Medicaid*	207,080	11.5%	1,200,000
Total	924,080	51.4%	3,577,584

*Does not include hospital lab test or those provided through full-risk managed care

Based on this figure, one can estimate that approximately 6,941,000 lab tests were performed in Nebraska in 2009.

Options

There are several options in Nebraska for eligible providers to send laboratory orders and to receive results electronically. These options include:

- NeHII;
- Direct; and
- Proprietary networks set up by independent reference labs.

Electronic Lab Results Delivery through NeHII

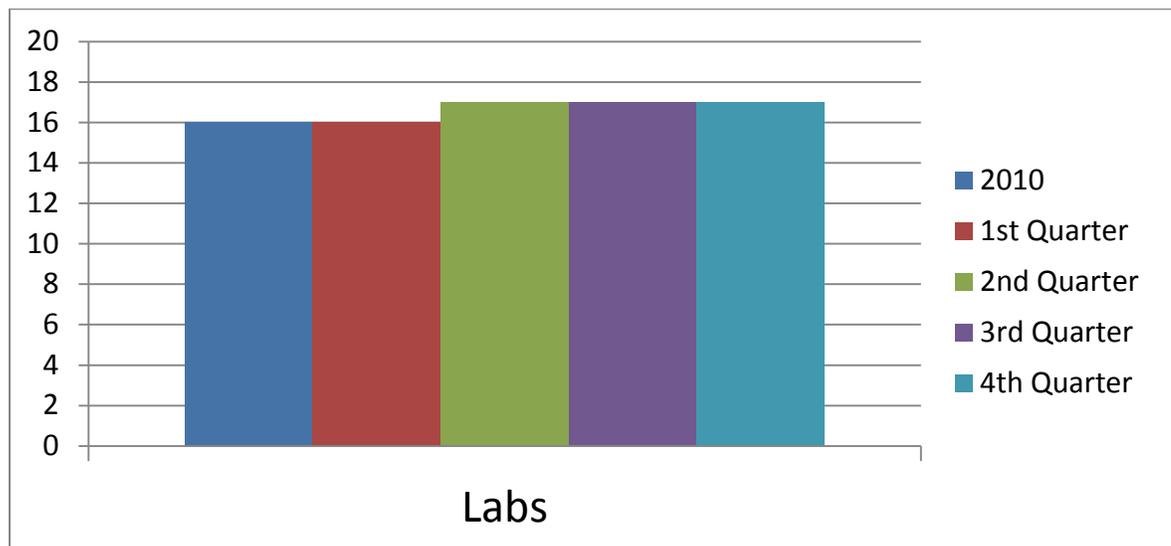
As of the end of 2011, NeHII was receiving structured lab results from labs affiliated with the following 17 hospitals:

- Bellevue Medical Center - Bellevue NE
- Bergan Mercy Hospital - Omaha, NE
- Children's Hospital and Medical Center - Omaha, NE
- Creighton University and Medical Center, Omaha, NE
- Great Plains Regional Medical Center - Omaha, NE
- Lakeside Hospital - Omaha, NE
- Immanuel Hospital - Omaha, NE
- Mary Lanning Memorial Hospital - Hastings, NE
- Memorial Hospital -Schuyler, NE
- Methodist Hospital - Omaha, NE
- Methodist Women's Hospital – Omaha, NE
- Midlands Hospital -Papillion, NE
- Nebraska Spine Hospital - Omaha, NE
- The Nebraska Medical Center - Omaha, NE

-
- Community Memorial Hospital - Missouri Valley, IA
 - Mercy Hospital - Corning, IA
 - Mercy Hospital - Council Bluffs, IA

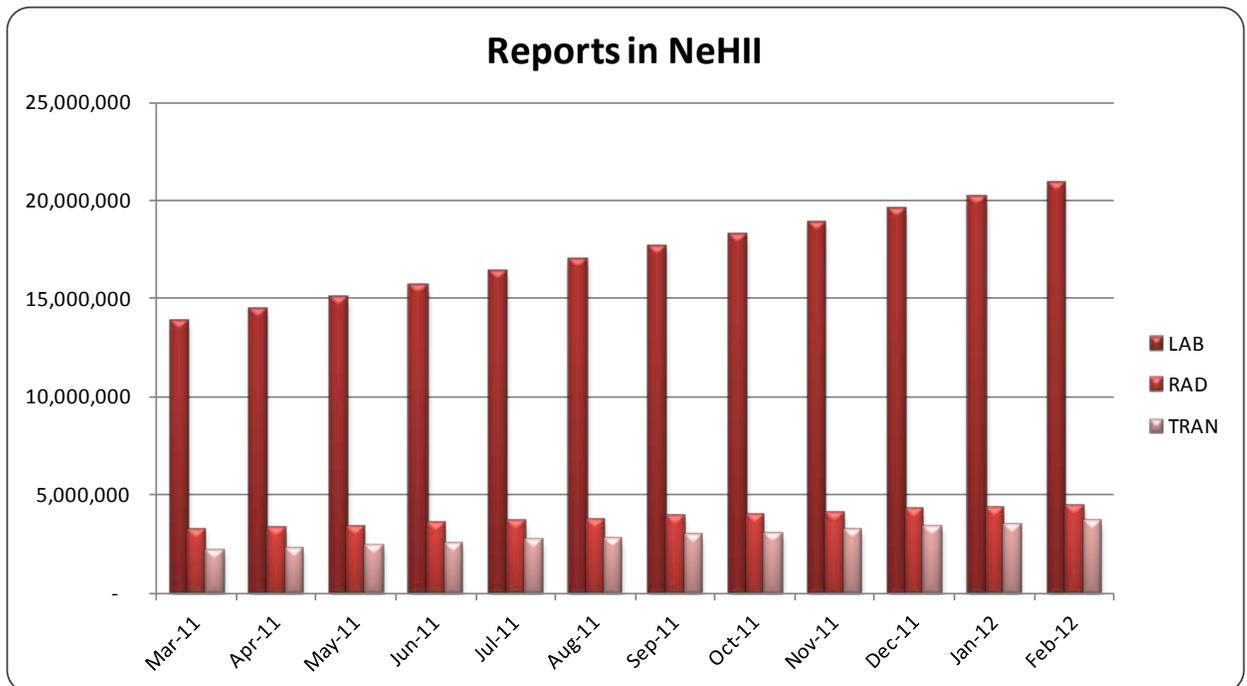
The graph below shows the growth in laboratory participation in NeHII in 2011.

Laboratory Participation in NeHII 2011



Regional West Medical Center began sending structured lab results to NeHII in the spring of 2012. In 2012 and early 2013, 15 Critical Access Hospitals, 2 regional hospitals, and 1 research hospital are expected to join NeHII and will also begin sending structured lab results through NeHII.

As of March 23, 2012, NeHII has **over 21,358,125** unique lab results stored within the exchange. The following graph summarizes NeHII's progress in delivering electronic lab results in Nebraska:



NeHII Implementation Process

The process of adding labs to NeHII is well defined, straight-forward, and has been executed multiple times throughout the project. The time to complete this process is 7 weeks with multiple labs able to connect simultaneously. The implementation process is as follows:

- 1) Execution of Participation Agreements and Business Associate Agreements
- 2) Execution of LOINC Code Crosswalk
 - a. LOINC coding is available for 140 tests. The LOINC coding allows for test results to be graphed for trend analysis.
 - b. This process ensures that local codes at each individual facility are translated to LOINC standards. NeHII will also support SNOMED as required.
- 3) Vendor-specific HL7 coding is completed as needed
- 4) Network connections, including secure VPN communications, are completed
- 5) Data is loaded to the EdgeServer
- 6) Lab director and personnel test the exchange of data by comparing data on NeHII with data on their Laboratory Information System (LIS)
- 7) Upon approval, test data is deleted and production data flows begin

This implementation process is independent of rural or urban settings. Any laboratory that has an operational LIS system, regardless of size, can connect to NeHII through the execution of the above process.

eBHIN

For those behavioral health providers adopting the eBHIN full electronic medical record, lab tests can be securely ordered and results delivered via the NextGen interface. Lab tests are an important component of both medication compliance, but, also to monitor for appropriate dosing of medications. The medications utilized in a behavioral health setting oftentimes lose efficacy or may be toxic, so close monitoring is important for patient safety. It is anticipated that 100 providers will gain this capacity.

Strategies for Encouraging Laboratory Participation

Nebraska's strategies to include:

- Adding hospital labs as hospitals join NeHII
- Convening stakeholder meetings with laboratories to encourage laboratory participation in NeHII or other methods of exchange;
- Piloting the delivery of laboratory results using Direct;
- Evaluating metrics related to electronic delivery of lab results.

Encouraging Laboratory Participation in NeHII

NeHII is addressing both the technical issues related to LOINC coding and the concerns of laboratories regarding NeHII's pricing model. These are the issues that present the greatest barriers to laboratory participation in NeHII.

LOINC Crosswalking. NeHII's process of taking internal lab codes and crosswalking them to LOINC enables labs not using LOINC to exchange lab data electronically. Since all or nearly all labs in Nebraska are using HL7, there are no technical barriers to exchanging lab data electronically.

Pricing Models. NeHII is working to address the concerns of independent reference labs regarding NeHII's pricing model. Many independent labs in Nebraska already have proprietary electronic connections to physicians in Nebraska that are proprietary in nature. As more physicians join NeHII, they will lose that competitive advantage, hence the labs are not eager to be an early adopter and contribute to the success of NeHII. NeHII continues to review and adopt its connection and pricing strategies to address the concerns of Nebraska-based labs, and as a result has considered allowing these proprietary exchanges to connect to NeHII on a transaction-based model as opposed to annual license fees. Additional details will be provided following conversations with the independent labs.

Convening Stakeholder Meetings with Laboratories

NeHII regularly contacts and meets with representatives of the major independent reference labs in Nebraska to discuss issues related to their participation in NeHII.

Piloting the Delivery of Laboratory Results Using Direct

NeHII began piloting the use of Direct to deliver lab results from Pathology Services, Inc. in 2012.

Evaluating Metrics

The eHealth Council and the eHealth implementation team will evaluate metrics and methods being used by other states to provide statewide data on the number of lab tests done in the state and the number of lab results reported electronically.

Goals and Tracking

We will monitor our progress by tracking:

- # of labs connected to NeHII;
- # of lab results sent to NeHII;
- Other metrics identified by the eHealth Council which will help Nebraska evaluate progress in this area.

Summary Care Record Exchange

Current State and Gap Analysis

There are many options for exchanging patient care summary information. Patient care information can be shared through a Continuity of Care Document (CCD) or a Continuity of Care Record (CCR). The Continuity of Care Record (CCR) specifications were developed jointly by ASTM International, the Massachusetts Medical Society (MMS), the Healthcare Information and Management Systems Society (HIMSS), the American Academy of Family Physicians (AAFP), the American Academy of Pediatrics (AAP), and other health informatics vendors. The Continuity of Care Document (CCD) was developed by HL7 with consultation from ASTM E31. Advocates of the CCD believe that it combines the benefits of ASTM's CCR and the HL7 Clinical Document Architecture specifications.

A CCD, CCR, or similar document can be sent from one provider to another using Direct. Four of Direct's priority use cases address the exchange of summary records:

- Primary care provider refers patient to specialist including summary care record;
- Primary care provider refers patient to hospital including summary care record;
- Provider sends a clinical summary of an office visit to the patient; and
- Hospital sends a clinical summary at discharge to the patient.

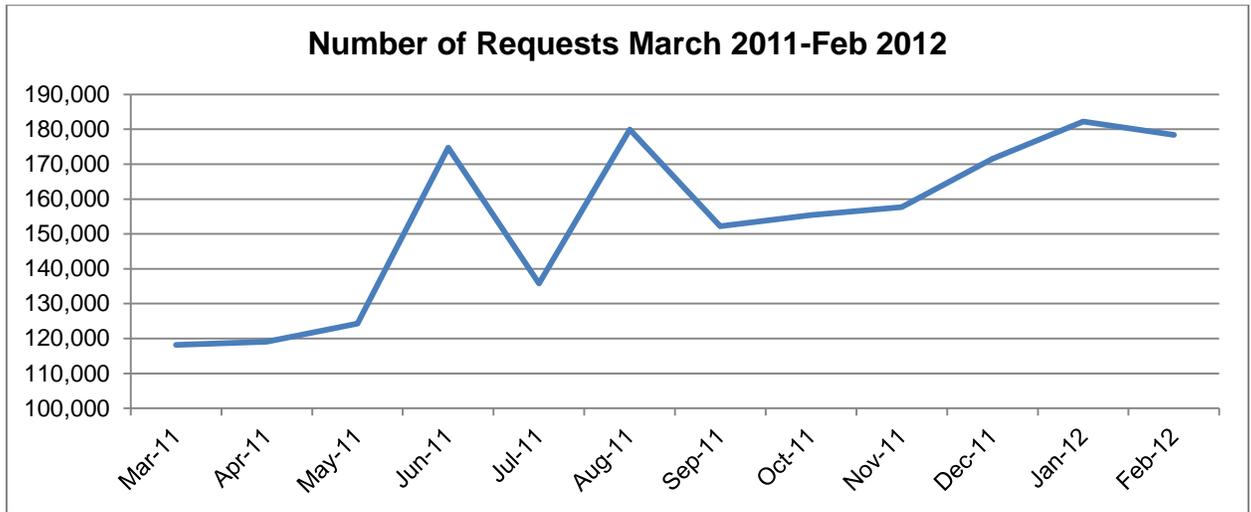
Care summary information can also be exchanged using a query-based HIE. This model includes care information from multiple sources and may provide more complete patient information than a CCD or a CCR from a single provider.

Health care providers in Nebraska have several options for exchanging summary care records, including:

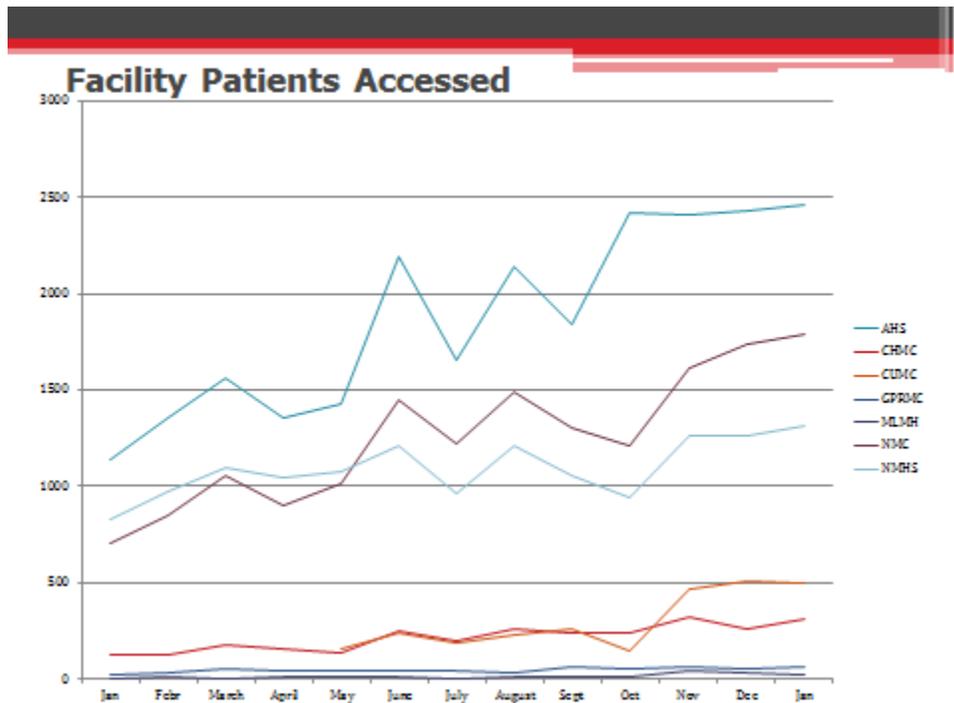
- **Summary care record exchange using a query model with the functionality provided by NeHII.** As of March 2012, NeHII has over 700 physician users of the query model exchange. This is the model predominately used in Nebraska.
- **Summary care record exchange using Direct services with NeHII/HIO Shared Services as the statewide HISP.** Physicians can also send care summary exchange documents using Direct secure messaging through NeHII/HIO Shared Services. NeHII and eBHIN are planning a pilot to exchange care summary documents using Direct.
- **Summary Care Exchange within eBHIN.** A standard care record can be shared among behavioral health providers participating in the eBHIN network.

Summary Care Queries through NeHII

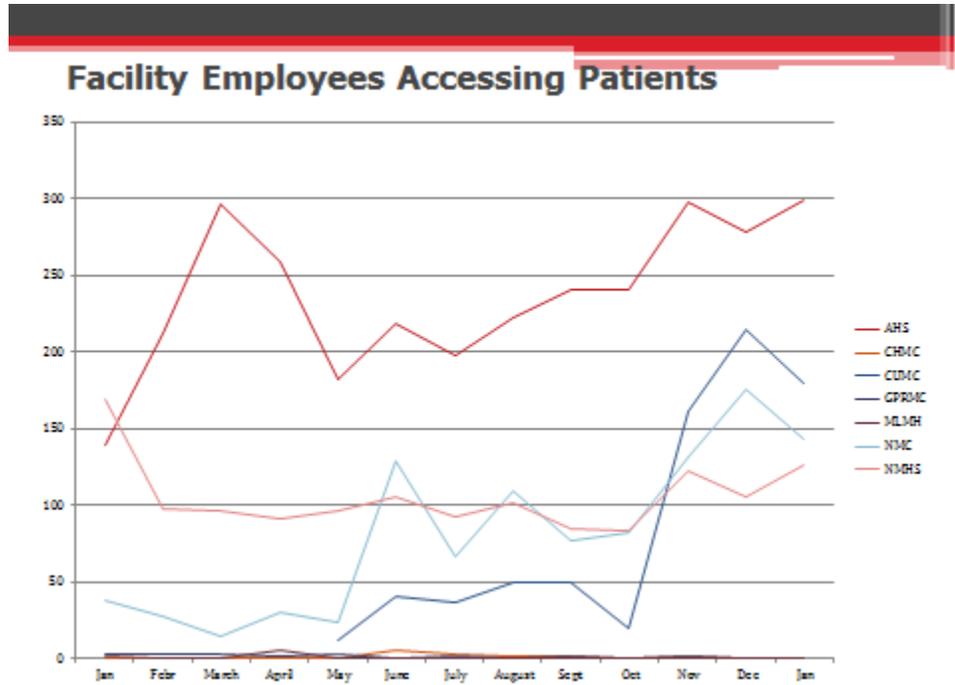
Inquiries to the NeHII system for January 2012 rose to 182,263 compared to 103,215 in January 2011 and 26,294 in January 2010. The following graph shows the growth in the number of queries to NeHII from March 2011 to February 2012.



The following graph shows the increase in the number of patients queried at participating health systems in 2011.



The following graph shows an upward trending in the number of employees at participating health systems querying NeHII for patient information.



Sample screen shots showing the care summary information available to a provider through NeHII are shown on the following pages:



NEHII, GRAPIE - 04/05/1926 F 456789.GEN Visit: [] Facility: [] From: [] To: []

All Summary Cumulative Lab Lab Radiology Reports ADT Patient Info Open Report

Current Consent Yes

Updated By: Test Userone Workgroup: Test One Workgroup On: 03/11/2009 11:07:40 AM CDT Given to Provider:

Basic

Name: NEHII, GRAPIE Age: 82
Address: 8407 MCLELLAN ROAD Born: 05-Apr-1926 456789 [GEN]
Santa Anna, CA 95076 Sex: F MRN or ID: N0710097 [DHS]
Home: Work: 000323290013[Elysium]
Alias: Portal PIN:

Insurances

Insurance Co.	Plan	Benefit	Member ID	Grp ID	Admin.	Eff.	Exp.	CP	Primary Physician
BLUE SHIELD PLAN 0200 (PLUS)			4308457077-000					\$10	DR SMITH

Eligibility Last failed query: 03/13/09 11:08 AM

No coverage information is available.

Medication Allergies

First Noted	Drug Name	Dose Form Strength	Reaction	Group	Reported By
02/08/04	Amoxicillin	Amoxicillin (Trihydrate) Cap 500 MG	Skin Rashes/Hives	Penicillins	D. PCP
01/08/03	Erythromycin Base	Erythromycin Tab 500 MG	Nausea/Vomiting/Diarrhea	Macrolides	D. PCP
01/19/09	Nafcillin Sodium	Nafcillin Sodium For IV Soln 2 GM	Skin Rashes/Hives	Penicillins	D. Smith

Medications Last Query: 03/13/09 09:56 AM

Started On	Drug Name	Dose Form Strength	Sig	Stop On	Ongoing Rx By
12/15/04	Amitriptyline HCl	Amitriptyline HCl Tab 10 MG	1 TABLET at bedtime	>>	D. PCP
10/19/07	Amaryl	Glimepiride Tab 1 MG	1TQD	>>	D. PCP
01/19/09	Levothyroxine Sodium	Levothyroxine Sodium Tab 100 MCG	1/2 qd am po	>>	D. Smith



NEHII, GRAPIE - 04/05/1926 F 456789.GEN Visit: Facility: From: To:

- All
- Summary
- Cumulative Lab
- Lab
- Radiology
- Reports
- ADT
- Patient Info
- Open Report



Lab

<input type="checkbox"/>		7/29/2004 7:25:00 PM	URINE CULT - COLONY COUNT...	J Contreras
<input type="checkbox"/>		4/27/2004 1:00:00 PM	CBC/PLATELETS	J Sullivan
<input type="checkbox"/>		3/19/2004 6:50:00 PM	CBC/PLATELETS	J Contreras
<input type="checkbox"/>		2/5/2004 6:25:00 PM	CBC/PLATELETS/RETICULOCYT...	J Sullivan
<input checked="" type="checkbox"/>		1/6/2004 4:44:00 PM	BCP	R Jones

Radiology

<input type="checkbox"/>		12/4/2003 2:00:00 PM	Bilateral Screening Mammo...	S Johansen
<input type="checkbox"/>		10/18/2002 2:00:00 PM	Left Mammogram and Right...	T Nguyen
<input checked="" type="checkbox"/>		2/7/2002 2:00:00 AM	US CAROTID ART	S Johansen
<input checked="" type="checkbox"/>		3/28/1999 3:00:00 AM	FINGER, OP	J Wallaby
<input checked="" type="checkbox"/>		3/28/1999 3:00:00 AM	HAND, COM, OP	T Morningstar

Reports

<input type="checkbox"/>		1/10/2002 2:00:00 AM	Surgery Center OR	M Keeler
<input type="checkbox"/>		12/22/2001 2:00:00 AM	Progress Notes	J Johnson
<input type="checkbox"/>		6/21/2001 2:00:00 AM	Chart Notes	J Sullivan
<input type="checkbox"/>		5/14/2001 2:00:00 AM	Chart Notes	T Morningstar
<input type="checkbox"/>		10/2/2000 2:00:00 AM	Chart Notes	J Johnson

ADT

<input type="checkbox"/>		1/24/2005 2:05:00 AM	Discharge/end visit	B Williams
<input type="checkbox"/>		1/23/2005 2:16:00 AM	Update patient informatio...	T Faxuser
<input type="checkbox"/>		1/23/2005 2:16:00 AM	Update patient informatio...	T Faxuser
<input type="checkbox"/>		1/7/2005 3:26:35 AM	Register a patient	M Spenc
<input type="checkbox"/>		1/3/2005 3:26:35 AM	Register a patient	M Spencer

Cumulative Lab

No results matched your search.

NEHII, GRAPIE - 04/05/1926 F Visit: Facility: From: To:

All Summary Cumulative Lab Lab Radiology Reports ADT Patient Info Open Report

* All action times shown on this page are in Central Daylight Time.
 Elysium FINAL LAB RESULTS FROM ABC LAB

▶ NEHII, GRAPIE ID: 456789[GEN] DOB: 05-Apr-1926 Age: 85 Years Sex: F Phone: (831)423-903

▶ Ordered ROUTINE by Josepha Contreras, MD

* All clinical times shown on this page are in Pacific Standard Time.
 CBC/PLATELETS/COMPREHENSIVE ME...
 CBC/PLATELETS Sample taken on:10-Dec-2003 03:05 PM

Observation	Value	Reference Range	Units	Note
WHITE CELL COUNT	9.5	3.8-10.8	THOUS/MCL	
RED CELL COUNT	↓ 3.62	3.80-5.10	MILL/MCL	
HEMOGLOBIN	↓ 7.2	11.7-15.5	G/DL	
HEMATOCRIT	↓ 24.5	35.0-45.0	%	
MCV	↓ 68	80.0-100.0	fL	
MCH	↓ 19.9	27.0-33.0	pg	
MCHC	↓ 29.3	32.0-36.0	g/dL	
RDW	↑ 16.6	11.0-15.0	%	
PLATELET COUNT	382	140-400	THOUS/MCL	
MPV	10.0	7.5-11.5	FL	
NEUTROPHILS	↑ 81	40-75	%	
LYMPHOCYTES	↓ 7	20-45	%	

Summary Care Record Exchange Using Direct

NeHII/HIO Shared Services is providing HISP services to Nebraska and began piloting the use of Direct in 2012. NeHII and eBHIN are working to exchange a summary care document with patient consent using Direct. Other use cases are being explored.

Summary Care Exchange within eBHIN

eBHIN has established the data specifications for a standard care record to be shared among the behavioral health providers participating in the network. The record consists of the information currently submitted to the state Administrative Service Organization (ASO), Magellan Behavioral Healthcare, with additional information that was determined as helpful for use under emergency circumstances or for information management functions for the participating organizations. The emergency information includes current medications, emergency contact information and allergies. Break the glass functionality is in development to allow access to records otherwise not released by the patient for access across the HIE. eBHIN can generate a number of summary documents including a medications, allergies and diagnosis report, registration summary, and discharge summary. Sample documents can be found on the following pages.



Patient Name: Test, Patient
Date of Birth: 05/21/1993 Medical Record Number: 000000000002

Redisclosure Notice

This information has been disclosed to you from records protected by Federal confidentiality rules (42 CFR part 2). The Federal rules prohibit you from making any further disclosure of this information unless further disclosure is expressly permitted by the written consent of the person to whom it pertains or is otherwise permitted by 42 CFR part 2. A general authorization for the release of medical or other information is NOT sufficient for this purpose. The Federal rules restrict any use of the information to currently investigate or prosecute any alcohol or drug abuse patient.

REGISTRATION DOCUMENT

Agency Assigned ID # :
Type of Service: Day Rehabilitation
Registration Type: New

Admission Date: 08/24/2011
Region: Region V
Age at Admission: 18 Years

DEMOGRAPHIC INFORMATION:

Patient Name: Patient Test
Address: 1234 Test Street, Apt 102
Lincoln, NE 68521-
Home Phone: (402)820-3948
Day Phone: (402)524-7574
Alternate Phone: (402)059-8205

Primary Phone: day
Phone Type:

Date of Birth: 05/21/1993
Marital Status: Married
Race: White
Preferred Language: English

Gender: Male
Social Security Number: 999-99-9999
Ethnicity: Other Specific Hispanic
County of Residence:

Veteran Status: No
Disability: No observable handicap or impairment
U. S. Citizen: Y

Immigration Number:

Primary Care Physician: Dr. Smith

PCP Phone: (402)890-8423
PCP Fax: (402)980-9238

Type of Medical Home: Private Provider

Name of Medical Home: Dr. Smiths Medical

Emergency Contact: Mama Test (Mother) Telephone #: (402)835-9183 Work phone: (402)082-0348

Staff Assigned:

Last Name	First Name	Staff Role	Begin Date
Jone	Sally	Counselor	06/22/2012

FINANCIAL INFORMATION:

Number of dependents: 0 Annual Gross Income: \$10000

Date Completed: 08/24/2011 Community Mental Health Center Page 1 of 3

Patient Name: Test, Patient

Date of Birth: 05/21/1993 Medical Record Number: 000000000002

Primary Income Source: Employment
Additional Sources of Income: none
SSI/SSDI Eligibility: Potentially Eligible
Medicare/Medicaid Eligibility: Potentially Eligible

Health Insurance Coverage: No Insurance
Primary Source of Payment: State Behavioral Health Funds

ADMISSION INFORMATION:

County of Admission: Lancaster
Admission Referral Source: Community Service Agency
Screening Date: 06/22/2012
Referral Source Code: Mental Health Providers
Referral Source Name: Robert Jefferson, phone: (402)109-2381
Is the person being admitted a Collateral or Significant Other? No
Education: The patient has completed 12th grade or GED
Employment Status at Time of Admission: Employed Part Time (< 35 Hrs)
Living Situation at Time of Admission: Private Residence without Support
Social Supports at Time of Admission: No attendance in the past month
Is this a Mental Health Board case? No

CHILD/ADOLESCENT INFORMATION:

School Attendance (last six months): Not Enrolled
Impact of Services on School Attendance: NA (at admission)
Involved with Juvenile Services: Not Involved with Juvenile Services
Stable Environment (Legal Custody): Emancipated minor
Receiving Professional Partner Services: No Receiving Special Education Services: No

SUBSTANCE ABUSE HISTORY:

Current or past history of substance abuse? Yes IV drug use in the past? No

	Age at First Use	Substance Name	Frequency of Use	Volume of Use	Route	Last Use
Primary:	12	Alcohol	daily	1/5th whiskey	Oral	04/18/2012
Secondary:	15	Marijuana/hashish	1-3 times past month	1 joint	Smoke	03/22/2012

OTHER HISTORY :

Legal Status at Admission: Voluntary
Criminal Activity (number of arrests in past 30 days) at time of admission: 0
Has this person attempted suicide in the last 30 days? No
Is Consumer a parent/legal guardian of a youth receiving case management from Children and Family Services (CFS) or CFS designee (e.g. Nebraska Families Collaborative - NFC)? No
Is youth/family involved with the Juvenile Court? No
Is youth/family receiving service voluntarily, without court involvement? Yes

TRAUMA HISTORY:

Trauma History? Yes
Emotional abuse in childhood
Physical assault in childhood
Disasters (tornado/earthquake) in childhood
Prostitution/sex trafficking in childhood

Date Completed: 08/24/2011 Community Mental Health Center Page 2 of 3

Patient Name: Test, Patient

Date of Birth: 05/21/1993 Medical Record Number: 000000000002

ASSESSMENT:

Reason for this Admission: Primary SA/Secondary Mental Health
Reason for Emergency Protective Custody Admission: Not an EPC admission
Is this service to be provided, in whole or part, through Tele-Health? No
Is the use of Methadone/Buprenorphine/Suboxone/Opioids in treatment planned? No
Days waiting to enter this service: 1 Day
Is the consumer pregnant? No
For Adults with mental illness - Meets Severe and Persistent Mental Illness (SPMI) criteria? No
For children/adolescents - Meets Nebraska Serious Emotional Disturbance (SED) criteria? No
Type of service: Day Rehabilitation
Is this a pre-auth? Yes

DSM-IV DIAGNOSIS:

Axis I:
Alcohol-induced mood disorder (291.89)
Anxiety Disorder Due to... (293.84)
Axis II:
Diagnosis Deferred on Axis II (799.9)
Axis III (reported by patient):
Deferred
Axis IV - Problems related to:
education
finances
occupation
social environment
Axis V - Global Assessment of Functioning:
Current GAF: 42 on 08/24/2011.
Highest GAF in the last 12 months: 0

Document generated by: Janel Z. Fricke 06/22/2012

CMHC-All
2201 South 17th Street Lincoln, NE 68502- Phone: (402)441-7940 Fax: (402)441-8625

Date Completed: 08/24/2011 Community Mental Health Center Page 3 of 3

Patient Name: Test, Sally
Date of Birth: 04/22/1970 MRN: 000000000069

Physical assault in adulthood

ASSESSMENT / DSM-IV DIAGNOSIS:

Date of Diagnosis: 01/02/2012 **Cluster Classification:** **Certainty Index:**

Axis I:

Major Depressive Disorder, Recurrent, Unspecified (296.30), Chronic.
Cocaine intoxication delirium (292.81), Chronic.

Axis II:

Avoidant Personality Disorder (301.82), Chronic.

Axis III (reported by patient):

Asthma, Diabetes, type I

Axis IV - Problems related to:

accessing health care
primary support group
social environment

Axis V - Global Assessment of Functioning:

Current GAF: 45 on 01/02/2012.
Highest GAF in the last 12 months: 45 on 01/02/2012.

Document generated by: Janel Z. Fricke 02/01/2012

Lutheran Family - Lincoln IOP
2900 O Street - Suite 200 Lincoln, NE 68510- Phone: (402)435-2910 Fax: (402)435-2949

Date Completed: 01/02/2012 Lutheran Family Services Page 2 of 2

Patient Name: Test, Patient
 Date of Birth: 01/09/1989 Medical Record Number: 000000000001



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MEDICATIONS LIST

Medications:

Rx Elsewhere?	Start Date	Stop Date	Medication Name	Directions
Y			Butrans 20 mcg/hour Transderm Patch	apply 1 patch (20MCG/h) by transdermal route every 7 days
Y			Humalog KwikPen 100 unit/mL Sub-Q Pen	inject by subcutaneous route as per insulin sliding scale protocol
Y			Savella 100 mg Tab	take 1 tablet (100MG) by oral route 2 times/day
Y			oxycodone 10 mg Tab	take 1 tablet (10MG) by oral route 4 - 6 hours
Y			indomethacin ER 75 mg Cap	take 1 capsule (75MG) by oral route 2 times every day with food
Y	12/27/2011	02/17/2012	Axid AR 75 mg Tab	take 1 tablet (75MG) by ORAL route 2 times every day as needed
N	02/17/2012	05/17/2012	omeprazole 20 mg Cap, Delayed Release	take 1 capsule (20MG) by oral route every day before a meal
N	02/17/2012	05/17/2012	trazodone 150 mg Tab	take 1 tablet (150MG) by oral route every day at bedtime
N	02/17/2012	05/17/2012	Cymbalta 60 mg Cap	take 2 Capsule by oral route every day

Diagnosis:

Code	Diagnosis	Status	Note
250	Diabetes mellitus	Chronic	
296.80	Bipolar disorder, unspecified	Worse	Bipolar II and Seasonal Affective Disorder
301.9	Unspecified personality disorder	Recurrent	Dependence traits and borderline behaviors
304.00	Opioid type dependence, unspecified use	Recurrent	
304.20	Cocaine dependence, unspecified use	Improved	
304.3	Cannabis dependence	Recurrent	Partial Remission
304.53	Hallucinogen dependence, in remission	Improved	
530.81	GERD	Chronic	
729.1	Myalgia and myositis, unspecified	Worse	

Patient Name: Test, Patient

Date of Birth: 01/09/1989 Medical Record Number: 000000000001

Allergies:

Allergen/Ingredient

Pet Dander

Penicillins

Reaction:

Tightness Of Chest

Anaphylaxis

Document generated by: Janel Z. Fricke 03/13/12

CenterPointe Adult Residential

2220 South 10th Street Lincoln, NE 68502-3445 Phone: (402)475-8748 Fax: (402)475-6728

Page 2 of 2

Strategies

Strategies for encouraging summary care record exchange include:

- Increasing participation in NeHII by continuing to recruit and add physicians, hospitals, and other providers;
- Developing eBHIN's capabilities and increasing participation by expanding to other regions;
- Working on a pilot to exchange cares summary records between NeHII and eBHIN with patient consent using Direct;
- Working with Wide River Technology Extension Center to make sure that eligible providers and critical access hospitals understand their options;
- Monitoring the development of standards and best practices related to summary care record exchange;
- Developing a provider directory which will facilitate the exchange of summary care records to and from those entities using NHIN Direct or alternative methods of exchange; and Evaluating metrics and methods being used by other states to provide statewide data on the number of summary care records exchanged in the state.

Goals and Tracking

We will monitor our progress by tracking:

- Queries through NeHII;
- Summary care documents sent through eBHIN;
- Other metrics identified by the eHealth Council which will help Nebraska evaluate progress in this area.

Public Health

Current State and Gap Analysis

The NITC eHealth Council formed a Public Health Work Group in 2009 to identify public health capabilities and gaps and to make recommendations regarding the integration of public health information systems with health information exchange. Their findings and recommendations have guided Nebraska's efforts to facilitate the electronic submission of public health data. The work group's findings and recommendations can be found at <http://www.nitc.nebraska.gov/eHc/plan/reports/PublicHealthWorkGroupFinalReport.pdf>.

Public health information technology in Nebraska ranges from mature and capable of interoperability with Health Information Exchange to silos of information that have limited capacity to support electronic data exchange. Public health data needs and opportunities cover a variety of information domains including:

- Public health surveillance and response,
- Health status and disease monitoring;
- Population based health care / quality improvement;
- Health care services and utilization;
- Population-based research; and
- Health education and communication.

The different domains help to distinguish the type of public health use of the information and the requirements for the information. For example, public health surveillance and response is generally immediate, close to real time information in aggregate format that supports identification of events and emerging diseases or outbreaks. During an outbreak and response and for reportable diseases, the data needs to include identifiable health information. Health status and disease monitoring on the other hand is based on analysis of health information at the population level, in aggregate form and focuses on trends over time. The data is often analyzed on an annual basis.

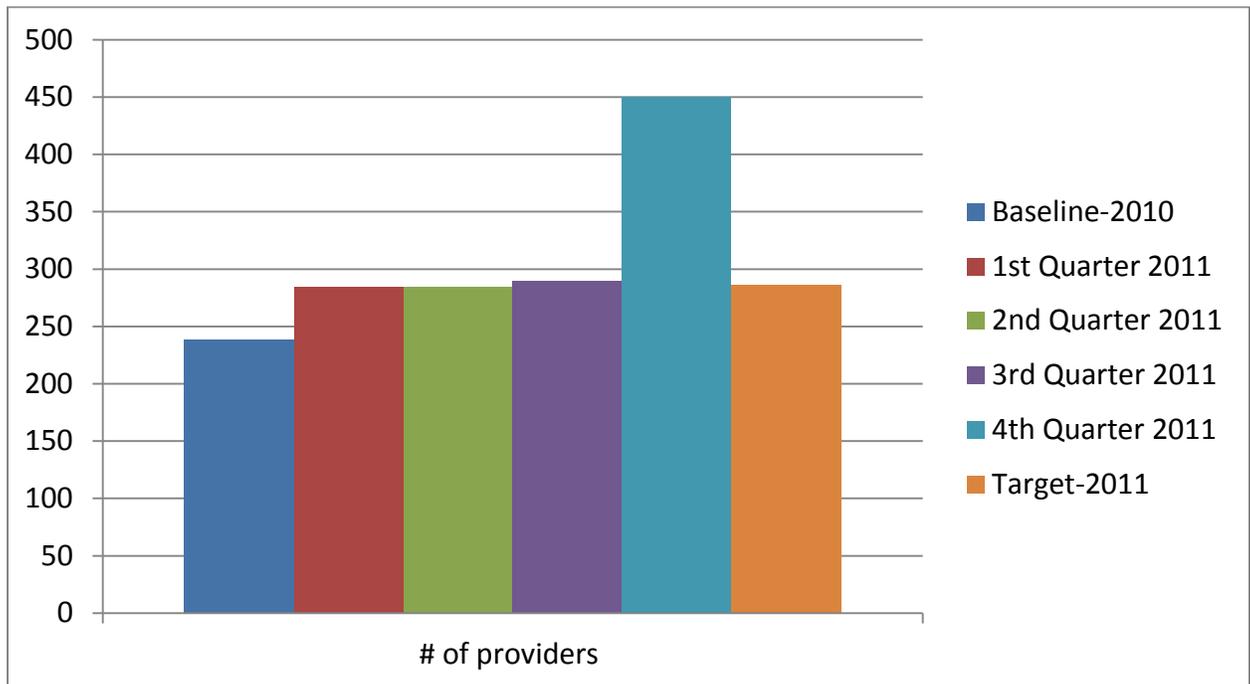
The State of Nebraska Department of Health and Human Services has several systems which will interface with health information exchanges. Nebraska has all the data repositories that most states currently have in place to track and manage communicable disease, infectious disease, and many other components that affect the health of Nebraska's citizens. Nebraska is making significant improvements in applications to bring these multiple and dissimilar data streams into a usable tool. Nebraska was one of the beta sites for the National Electronic Disease Surveillance System development and currently receives 90% of all reportable diseases through electronic information exchange. Nebraska has developed a centralized immunization registry, a Parkinson's registry, and a robust provider alerting and communication network. Through the e-Nebraska Ambulance Rescue Service Information System (e-NARSIS), EMS providers can submit reports electronically. The Statewide Trauma Data Collection System was created to gather trauma information more accurately and timely to improve performance of state trauma system and to reduce morbidity and mortality. Nebraska's syndromic surveillance system collects information from hospitals in six public health jurisdictions.

In 2011, significant progress was made in the electronic submission of public health data with the enactment of legislation which facilitates the electronic exchange of syndromic

surveillance and immunization information in Nebraska and across state lines. LB 591 was approved by Governor Heineman on May 18, 2011. The slip law copy is available at <http://nebraskalegislature.gov/FloorDocs/Current/PDF/Slip/LB591.pdf>.

The number of providers submitting data to the immunization registry (NESIIS), the number of labs submitting data to the Nebraska Electronic Disease Surveillance System (NEDSS), and the number of hospitals submitting data to the State's syndromic surveillance system increased significantly in 2011. At the end of 2011, 450 providers were submitting immunization records to the state's immunization registry, up from 238 at the end of 2010. Of the 450 providers submitting immunization records in 2011, 136 were sending data electronically. The number of labs submitting data to NEDSS increased from 12 in 2010 to 16 at the end of 2011. The number of hospitals submitting data to the syndromic surveillance system increased from 6 in 2010 to 16 by the end of 2011. The charts and tables on the following pages provide additional information.

Providers Submitting to Immunization Registry



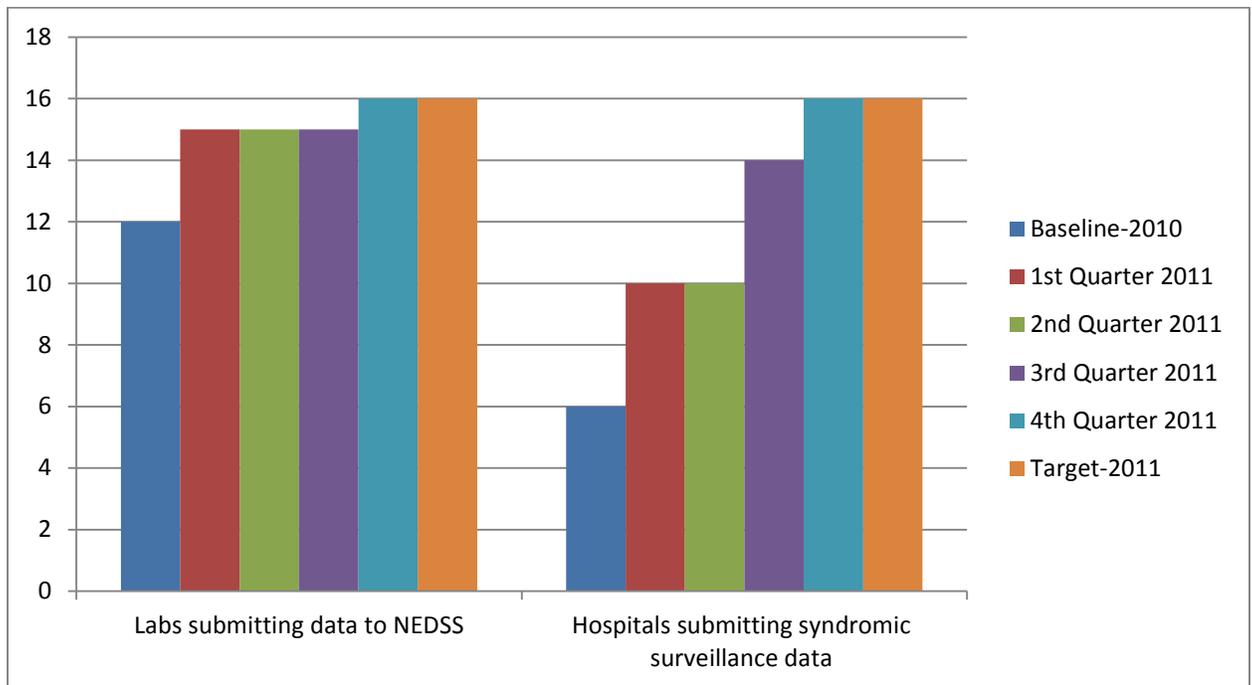
Providers Submitting to Immunization Registry

Baseline—2010	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Target—End of 2011
238	284	284	290*	450**	An increase of 20% to 286

*Note: 31 providers were sending immunization data electronically at the end of the third quarter.

**Note: 136 providers were sending immunization data electronically at the end of the fourth quarter.

Public Health Reporting



Public Health Reporting

Public Health Reporting	Baseline—2010	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Target—End of 2011
# of labs submitting data to NEDSS	12	15	15	15	16	An increase of 30% to 16
# of hospitals submitting data to the syndromic surveillance system	6	10	10	14	16	16

Public Health Reporting

Public Health Connections	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
Labs submitting to NEDSS—Please list and include city	UNMC - Omaha Bryan LGH - Lincoln Columbus Community Hospital Faith Regional Medical Center - Norfolk Great Plains Regional-North Platte Regional West-Scottsbluff Children's Hospital-Omaha ARUP-serves multiple cities in NE Cerner-serves multiple cities in NE Kearney Good Samaritan-Kearney Creighton Medical-Omaha	UNMC - Omaha Bryan LGH - Lincoln Columbus Community Hospital Faith Regional Medical Center - Norfolk Great Plains Regional-North Platte Regional West-Scottsbluff Children's Hospital-Omaha ARUP-serves multiple cities in NE Cerner-serves multiple cities in NE Kearney Good Samaritan-Kearney Creighton Medical-Omaha	UNMC - Omaha Bryan LGH - Lincoln Columbus Community Hospital Faith Regional Medical Center - Norfolk Great Plains Regional-North Platte Regional West-Scottsbluff Children's Hospital-Omaha ARUP-serves multiple cities in NE Cerner-serves multiple cities in NE Kearney Good Samaritan-Kearney Creighton Medical-Omaha	UNMC - Omaha Bryan LGH - Lincoln Columbus Community Hospital Faith Regional Medical Center - Norfolk Great Plains Regional-North Platte Regional West-Scottsbluff Children's Hospital-Omaha ARUP-serves multiple cities in NE Cerner-serves multiple cities in NE Kearney Good Samaritan-Kearney Creighton Medical-Omaha

	PLab-Lincoln Quest-serves multiple cities in NE Catholic Health-Grand Island Alegent-Lincoln	PLab-Lincoln Quest-serves multiple cities in NE Catholic Health-Grand Island Alegent-Lincoln	PLab-Lincoln Quest-serves multiple cities in NE Catholic Health-Grand Island Alegent-Lincoln	PLab-Lincoln Quest-serves multiple cities in NE Catholic Health-Grand Island Alegent-Lincoln Fremont Area Medical Center
Hospitals submitting syndromic surveillance data— Please list and include city	York General Hospital Children's Hospital-Omaha Great Plains Reg Med Center-North Platte Fremont Area Medical Center Beatrice Comm. Hospital The NE Medical Center-Omaha Nebraska Methodist Hosp – Omaha Mary Lanning Hospital-Hastings Falls City Comm. Medical Center Box Butte General Hospital	York General Hospital Children's Hospital-Omaha Great Plains Reg Med Center-North Platte Fremont Area Medical Center Beatrice Comm. Hospital The NE Medical Center-Omaha Nebraska Methodist Hosp – Omaha Mary Lanning Hospital-Hastings Falls City Comm. Medical Center Box Butte General Hospital	Children's Hospital-Omaha Great Plains Reg Med Center-North Platte Fremont Area Medical Center Beatrice Comm. Hospital The NE Medical Center-Omaha Nebraska Methodist Hosp – Omaha Mary Lanning Hospital-Hastings Falls City Comm. Medical Center Box Butte General Hospital McCook Community Hospital Providence Medical Center (Wayne)	Children's Hospital-Omaha Great Plains Reg Med Center-North Platte Fremont Area Medical Center Beatrice Comm. Hospital The NE Medical Center-Omaha Nebraska Methodist Hosp – Omaha Mary Lanning Hospital-Hastings Falls City Comm. Medical Center Box Butte General Hospital McCook Community Hospital Providence Medical Center (Wayne) Crete Area Medical Center Box Butte Primary Care

Public Health Reporting through NeHII

NeHII and the Nebraska Department of Health and Human Services Division of Public Health have been working to exchange immunization records, using a phased approach. The first phase focused on sharing patient immunization information from users of NeHII's EHR product to NESIIS, the Nebraska State Immunization Information System. This phase went live in December of 2011. The table below provides additional detail on the exchange of data from NeHII's EHR to NESIIS.

Immunization Reporting Through NeHII

- LB591 was passed in August, 2011 that supports immunization reporting.
- Through the EMRLite and the HIE, NeHII transmits vaccination information from the EMRLite to NESIIS, the Nebraska State Immunization Registry. The process is as follows:
 - Physician logs into the EMRLite application
 - Physician searches for patient by entering the patient's first name, last name, and date of birth on the PT Index Page
 - Patient information is populated and physician can scroll down to vaccinations
 - To enter vaccinations into the EMR, search prescription vaccine and choose appropriate vaccine
 - Complete the required information
 - Educate patient regarding the vaccination and possible side effects, allergies etc
 - Save Rx information
 - Batch file is created each night in NeHII moving vaccination information from the medication list to the vaccination list
 - A Public Health Information Network Messaging System (PHINMS) interface sends the batched immunization file directly to NESIIS.
 - Records are updated/added to NESIIS for viewing by any provider who utilizes NESIIS.

Later phases will focus on accessing immunization records from NESIIS through NeHII's Virtual Health Record and sending immunization information to NESIIS through NeHII's Virtual Health Record. NeHII began testing the submission of immunization data from Regional West Medical Center to NESIIS via the NeHII exchange in the spring of 2012.

NeHII and the Division of Public Health are also working on exchanging syndromic and disease surveillance data.

Barriers / Challenges

There are barriers and challenges that must be addressed for effective interoperability and exchange of health information with public health and to assure meaningful use of that information by public health.

Infrastructure and capacity vary widely as well as the readiness or sense of urgency among all the stake holders. This is true both for providers and for public health organizations. A cultural shift may need to occur for both medical providers and public health to reset expectations and practices for exchange of information.

Electronic medical record software that meets national certification requirements have to be able to exchange information using the adopted standards for messaging and data but few come "off the shelf" with interfaces for key public health reporting.

Electronic medical records and health information exchange may change what data is collected, how data is collected, how data is shared. Eventually clinical data sets will expand.

The structure of the electronic record will have to support accessing information necessary to determine compliance with licensure and certification regulations. This includes keeping pace with changes in licensure and regulation.

Strategies

The State of Nebraska and NeHII are focusing initially on connecting three systems to NeHII:

- Nebraska's immunization registry
- Nebraska Disease Surveillance System (NEDSS)
- Nebraska's syndromic surveillance system.

Goals and Tracking

We will track our progress by tracking:

- The number of providers submitting data to the immunization registry (NESIIS);
- The number of labs submitting data to the Nebraska Electronic Disease Surveillance System (NEDSS);
- The number of hospitals submitting data to the State's syndromic surveillance system.

Health Plans

Current State and Gap Analysis

45 CFR Part 162 requires health plans to accept electronic transactions if a covered entity wishes to conduct transactions electronically. **Not surprisingly, all or nearly all carriers in Nebraska accept electronic claims and eligibility requests.** There are approximately 50 carriers in Nebraska. The Nebraska Department of Insurance confirmed that all companies examined in the last five years are electronic with claims information.

NeHII is in active discussions with large carriers in Nebraska. The largest, BlueCross BlueShield of Nebraska (BCBSNE) has been an integral member since 2005, and is providing data to NeHII today in the form of eligibility information. Future enhancements will include the ability to do prior-authorizations, claim status, appeals, case management, disease management and other payment forms of activities through direct payer access to NeHII. Additional discussions are taking place with United Healthcare and Coventry.

Through eBHIN's planning activities, it was determined that the regional authorities and their network provider organizations have been submitting information to the State via a website sponsored through the State Division of Behavioral Health Services (DBHS) and their Administrative Services Organization (ASO) Contractor, Magellan Behavioral Healthcare, to submit patient registration and discharge information for publicly funded services. Stakeholders communicated the need for a more streamlined process where the data provided could also be used for patient management and performance improvement efforts.

Strategies

Nebraska is encouraging greater utilization of electronic claims submission and eligibility checks. Both NeHII and eBHIN are developing strategies to enable participants to more easily submit claims electronically.

NeHII formed a strategic partnership with a vendor, Health Data Management Corporation (HDM) to provide claim clearinghouse functionality within NeHII. This functionality would enable providers to submit claims to any carrier through the NeHII portal. The offering went live on November 1, 2010, and was to generate revenue to enhance NeHII's sustainability, but the market penetration for HDM was limited and there was little usage. NeHII is now in negotiations with RelayHealth for the same offering with an associated revenue generation strategy for NeHII. Implementation of the service is planned for third quarter 2012. .

NeHII's vendor, Axolotl Corporation, was purchased by Ingenix, a division of UnitedHealthGroup. UnitedHealthGroup also owns UnitedHealthCare, a large carrier providing services in Nebraska, including Medicaid processing. Since that time OptumInsight purchased Ingenix. Through the Ingenix, Optum and Medicaid connections, as well as coordination with Nebraska Senators, NeHII is continuing to aggressively pursue participation of UnitedHealthCare. To incentivize early participation, the NeHII Finance Committee has set the fees that carriers will pay to \$2.00 per member per year plus an annual license fee of \$25,000. According to UnitedHealthCare, this is significantly less than the national average of \$3.00 per member per year.

eBHIN has worked with Magellan Behavioral Healthcare to develop a file transfer protocol (FTP) application to submit data for registration and authorization of services to Magellan Behavioral Health rather than entering in the information manually into the Magellan web interface. Those providers that adopt the full EHR application will have access to an eligibility clearinghouse for claims processing.

Consumer Views and Human Capital

Consumer Views

As stakeholders, consumer needs and use of health IT should also be considered. Consumers include individuals accessing health care for themselves or acting as a decision maker for another person.

Consumer Views of Health IT. Nebraska consumers are generally receptive toward health IT and health information exchange. Research by the University of Nebraska Public Policy Center indicates that Nebraskans have positive views about sharing health information electronically, but do have some privacy and security concerns. Most participants in the deliberative discussion felt that the State of Nebraska had a role in ensuring the privacy and security of health information (100%), providing information to consumers about health information security and privacy (94%), regulating health information networks (91%), and facilitating public-private partnerships to exchange health information (88%).⁴

The support of Nebraska consumers toward health information exchange is also borne out by the high rate of consumers deciding to have their health information included in Nebraska's largest active health information exchange, the Nebraska Health Information Initiative (NeHII). Less than three percent of consumers have opted out of participating in NeHII. NeHII is also processing requests from consumers who initially opted out of the HIE and have now reconsidered and want to have their health information included in the HIE.

Privacy and Security Considerations. Many consumers do not have a good understanding of health information privacy laws such as HIPAA or how health information is exchanged. HIPAA allows for the sharing of personal health information for treatment, payment, and operations, without consumer consent. Providers are required to report incidences of certain diseases, births, deaths, trauma incidences, etc. to public health agencies and may make other disclosures of consumer information for specified health and safety purposes. Certain types of health information receive additional protection under federal law. For example, Section 42 of the Code of Federal Regulations Part 2 requires consent for the release of alcohol and drug abuse treatment facility information.

Currently health information is often shared via fax or paper copies delivered by mail or courier. The use of health IT and electronic health information exchange changes the method of sharing information, making the sharing of information faster and more convenient. The use of electronic exchange also provides an accurate audit trail of those who have accessed the system and what information they have viewed.

Most health information exchanges use either opt-in or opt-out policies for consumer consent. The opt-in approach requires consumers to sign an authorization acknowledging

⁴ Abdel-Monem, Tarik, and Herian, Mitchel, Sharing Health Records Electronically: The Views of Nebraskans, University of Nebraska Public Policy Center, December 11, 2008,

http://ppc.unl.edu/userfiles/file/Documents/projects/eHealth/Sharing_Health_Records_Electronically_Final_Report.pdf, accessed on June 25, 2009.

they are permitting their data to be released to other providers in the HIE. eBHIN uses an opt-in approach. HIEs with an opt-out policy for consumer consent include patient health information in the HIE unless consumers take action to have their information excluded from the HIE. NeHII uses an opt-out approach.

NeHII has developed extensive privacy and security policies with broad stakeholder representation using nationally recognized legal health IT experts to support the statewide health information exchange. Other states have expressed interest in purchasing the policies for use within their state health information exchange projects. eBHIN has also developed privacy and security policies. Both NeHII and eBHIN have included information for consumers on their websites (www.nehii.org and www.ebhin.org). NeHII is also developing a micro site specifically for consumers (www.connectnebraska.net/).

Health Literacy. Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.⁵ Fourteen percent of adults (30 million people) lack basic health literacy, according to the National Assessment of Adult Literacy. Low health literacy has been linked to poor health outcomes and higher healthcare costs. Older adults, racial and ethnic minorities, people with less than a high school degree or GED certificate, people with low income levels, non-native speakers of English, and people with compromised health status are most likely to experience low health literacy.⁶ If designed and used appropriately, health IT tools such as personal health records and mobile device applications have the potential to improve health literacy.

Referral Patterns. Nebraskans, especially those in rural areas of the state, often travel for health care, sometimes crossing state lines. Medical trading areas are often regional or among specialty treatment providers with specific business needs. These needs can be addressed through an HIE that supports data exchange through an integrated approach to improve consumer access to care, improve quality, and reduce costs. The neighboring states of Iowa, Kansas, Wyoming, Colorado, and South Dakota share medical trading areas with Nebraska. Some consumers also travel to Minnesota and Texas for treatment. Additionally, some retirees winter in Arizona or other states with warmer climates. Where appropriate, the exchange of permitted patient information should be considered with adjacent regions and across the entire United States. NeHII is in conversation with neighboring states mentioned to lay the groundwork for regional multi-state health information exchange. NeHII will also participate and support all activities to develop the Nationwide Health Information Network.

⁵ U.S. Department of Health and Human Services. 2000. *Healthy People 2010*. Washington, DC: U.S. Government Printing Office. Originally developed for Ratzan SC, Parker RM. 2000. Introduction. In *National Library of Medicine Current Bibliographies in Medicine: Health Literacy*. Selden CR, Zorn M, Ratzan SC, Parker RM, Editors. NLM Pub. No. CBM 2000-1. Bethesda, MD: National Institutes of Health, U.S. Department of Health and Human Services.

⁶ National Center for Education Statistics. 2006. *The Health Literacy of America's Adults: Results From the 2003 National Assessment of Adult Literacy*. Washington, DC: U.S. Department of Education.

Human Capital

Nebraska is investing in the human capital required to implement and support health information exchange. As of March 30, 2012, over 200 students had completed Metropolitan Community College's Health IT training program. Metropolitan Community College has set a goal of having 300 students complete the program by March 31, 2103.

Vision, Guiding Principles, Goals, Objectives, and Strategies

The NITC eHealth Council has developed a vision, guiding principles, goals, objectives and strategies to guide Nebraska's implementation of statewide health information exchange.

Vision

Stakeholders in Nebraska will cooperatively improve the quality and efficiency of patient-centered health care and population health through a statewide, seamless, integrated consumer-centered system of connected health information exchanges. Nebraska will build upon the investments made in the state's health information exchanges and other initiatives which promote the adoption of health IT.

Guiding Principles

Statewide health information exchange in Nebraska will:

- Utilize national standards and certification to facilitate meaningful use and interoperability;
- Utilize solutions which are cost-effective and provide the greatest return on investment;
- Utilize a sustainable business model for both the development of infrastructure and operations;
- Leverage existing eHealth initiatives and investments in Nebraska;
- Support the work processes of providers;
- Encourage ongoing stakeholder engagement and participation in development of the state plan and throughout all stages of implementation;
- Support consumer engagement and ensure the privacy of health information;
- Encourage transparency and accountability;
- Measure and report goal- and consumer-centered outcomes of investments of public dollars.

Goals

These goals will be achieved while ensuring the privacy and security of health information, which is an essential requirement in successfully implementing health information technology and exchanging health information:

- Using information technology to continuously improve health care quality and efficiency through the authorized and secure electronic exchange and use of health information;
- Improve patient care and consumer safety;
- Encourage greater consumer involvement in personal health care decisions;
- Enhance public health and disease surveillance efforts;
- Improve consumer access to health care;
- Improve consumer outcomes using evidence-based practices.

Objectives

Adoption

- Encourage and support the adoption of health IT in order to achieve meaningful use by providers.
- Build an appropriately-trained, skilled health information technology workforce.
- Encourage and support the adoption of personal health records.
- Improve health literacy in the general population.

Governance

- Address issues related to governance, oversight, and financing of health information exchange.
- Ensure transparency, accountability, and privacy.

Finance

- Support the development of a sustainable business model for building and maintaining health information exchange in Nebraska.
- Leverage the state's role as a payer to support health information exchange.

Technical Infrastructure

- Support the development and expansion of health information exchanges to support meaningful use and to improve the quality and efficiency of care.
- Support the development of interconnections among health information exchanges in the state and nationwide.
- Promote the development of a robust telecommunications infrastructure.
- Ensure the security of health information exchange.

Business and Technical Operations

- Support meaningful use.
- Encourage the electronic exchange of public health data.
- Encourage the integration of health information exchange with telehealth delivery.

Legal and Policy

- Continue to address health information security and privacy concerns of providers and consumers.
- Build awareness and trust of health information technology.

Strategies

Adoption

- Partner with the Regional Center serving Nebraska to facilitate provider adoption of EMRs and attainment of meaningful use requirements.
- Work with eligible providers to utilize Medicaid and Medicare incentives.
- Encourage efforts to offer affordably priced and effective EMR options.
- Consider the needs and uses of all providers.
- Spread innovation by highlighting successful provider implementation models (i.e., physician practices, critical access hospitals, long term care facilities, and pharmacies).

Governance

- Formalize the relationships among and responsibilities of NeHII, the state's regional and specialty health information exchanges, the Nebraska Department of Health and Human Services including Medicaid and public health, the State HIT Coordinator, and the NITC eHealth Council.
- Develop mechanisms to ensure accountability, transparency, and privacy.

Finance

- Encourage and support the effective use of investments to obtain meaningful use, including:
 - Leveraging existing and planned investments in health information exchange, public health, Medicaid, and other programs.
 - Leveraging Medicaid administrative funding for provider incentives.
 - Leveraging other programs which support health information exchange, workforce development, and broadband development.
 - Identifying sources of grant funding to fund start up costs and accelerate implementation.
- Determine where value is being delivered in the HIE network and tie the primary ongoing HIE revenue streams to value delivered.
- Market the benefits of health information exchange services to providers.

Technical Infrastructure

- Facilitate participation in existing health information exchanges to ensure statewide coverage.
- Coordinate the statewide technical architecture to support HIE integration.
- Assure the technical architecture meets the overall clinical and policy objectives of the state.
- Enumerate the critical environmental assumptions that the technical architecture must address, including interactions among HIEs and other partners.
- Address issues related to broadband access and affordability if necessary.

Business and Technical Operations

- Continuously assess and prioritize additional functionality to address meaningful use requirements.
- Support the development of effective analytics reporting for decision support and quality reporting.

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- Encourage and support e-prescribing and refill requests.
 - Provide prescription fill status and/or medication fill history.
 - Encourage and support the provision of electronic health information to patients.
 - Partner with payers and other stakeholders to develop strategies to improve care coordination and quality and efficiency of health care.
 - Encourage electronic reporting and use of public health data.
 - Provide electronic eligibility and claims transactions.
 - Provide electronic clinical laboratory ordering and results delivery.
 - Provide clinical summary exchange for care coordination and patient engagement.

Legal/Policy

- Coordinate with the Attorney General's Office, State HIT Coordinator, and the privacy and security officers of the state's HIEs to develop a framework for privacy and security enforcement.
- Continue to review and update privacy and security policies.
- Investigate statutory barriers to health information exchange.
- Provide information on privacy and security to providers and consumers through a statewide consumer education campaign, a privacy and security website, and a brochure for statewide distribution.
- Establish a collaborative infrastructure with the ongoing capacity to identify issues, consider options, and advance recommendations through a transparent and inclusive decision-making process.
- Encourage the harmonization of policies related to access, authentication, audit and authorization.

Health IT Adoption

Health IT adoption encompasses a number of technologies including electronic health records, e-prescribing, personal health records, and telehealth.

Electronic Health Records

Electronic health record systems are the building blocks of health information exchange. Increasing numbers of physicians and hospitals in Nebraska and nationwide are adopting electronic health record systems.

Physicians. The 2010 National Ambulatory Medical Care Survey found that 27% of office-based physicians in Nebraska had adopted a basic electronic health records, compared to 25% of office-based physicians in the U.S. Forty-four percent of office based physicians intended to apply for Meaningful Use incentive payments in 2011, compared to 41% of physicians nationally. As of July 2012, Wide River Technology Extension Center had signed up 1,058 primary care providers, with 771 providers at go-live and 175 providers attesting to Meaningful Use of electronic health records. Wide River Technology Extension Center ranked in the top 15 of regional extension centers nationally in the percent of primary care providers attesting to Meaningful Use.

Critical Access and PPS Hospitals. According to a 2010 Hospital Association survey, 19% of hospitals had adopted basic electronic health records. In comparison, only 10% of Nebraska hospitals had adopted basic electronic health records. Fifty-eight percent of Nebraska hospitals intend to apply for Meaningful Use incentives in 2011. Fifty-three out of 65 Critical Access Hospitals in Nebraska are also working with Wide River Technology Extension Center.

Personal Health Records

Personal health records promise to help consumers better manage their health care. Consumer adoption has been slow, however. Adoption is expected to increase over the next several years as more user-friendly applications which can be prepopulated become more widely available.

E-Prescribing

The use of e-prescribing in Nebraska grew exponentially between 2007 and 2011. In 2007, just 34 physicians in Nebraska were e-prescribing. As of December, 2011, 1,962 physicians in Nebraska were e-prescribing. The number of total prescriptions routed has grown from 44,060 in 2007 to over 3 million in 2011. The percent of community pharmacies activated for e-prescribing has increased from 53% in 2007 to 90% in 2011.

Telehealth

With 117 members, the Nebraska Statewide Telehealth Network (NSTN) connects nearly all of the state's hospitals and all of the state's public health departments. The Nebraska Statewide Telehealth Network is used for patient consultations, teletrauma, teleradiology, continuing medical education, and other applications.

Key Considerations and Recommendations

Key considerations and recommendations are listed below:

- Some health care providers—especially in the most rural areas of the state—may require both financial and technical support to adopt health information technologies. Systems need to be scaled to optimal use given the size and scope of physician practices and institutional settings.
- In Nebraska, physicians wishing to participate in NeHII also have the option of using a certified EHR or a viewer. Both of these options are less expensive and easier to implement than full EHR systems.
- Behavioral Health providers may also obtain behavioral health EHR applications that are fully integrated with the eBHIN HIE.
- Wide River Technology Extension Center will facilitate provider adoption of EHRs in Nebraska.
- Medicaid and Medicare incentive programs will reduce the financial burden for qualified providers. Some providers including long term care facilities and behavioral health providers are not eligible for these incentives. Special consideration may need to be given to providers ineligible for incentives. NeHII will offer a cost effective EHR to the medical directors of long term care facilities. eBHIN is offering a behavioral health EHR through a group purchase contract. The EHR is integrated with the HIE to build the aggregate database as well as connect with the HIE.
- Information technology applications have to include improvements in management that generate a fair return on investment to the organization adopting the new technology.
- It is critical that provider plans to adopt health information technology include a focus on safety and continuous quality improvement as part of their health IT implementation plan. Without a culture of safety and continuous quality improvement, health IT adoption will have limited impact on improving quality of patient care and consumer safety.
- When implementing new technologies, efforts need to be made to identify new sources of errors and to address those errors.
- Physician practices, critical access hospitals, and pharmacies which have successfully implemented health IT can serve as models.
- Barriers to increased use of telehealth need to be identified and addressed to the extent possible. These include statutory and regulatory issues as well as limitations on bandwidth.
- Colleges and universities should be encouraged to create and enhance existing HIT and bioinformatics curriculums for undergraduate and graduate degree programs.
- The involvement of all stakeholders in health IT implementation should be encouraged.

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- Consumers are an important stakeholder group. They must be included in any advisory body.

Objectives

- Encourage and support health IT in order to achieve meaningful use by providers.
- Build an appropriately-trained, skilled health information technology workforce.
- Encourage and support the adoption of personal health records.
- Improve health literacy in the general population.

Strategies

- Partner with the Regional Center serving Nebraska to facilitate provider adoption of EHRs and attainment of meaningful use requirements.
- Work with eligible providers to utilize Medicaid and Medicare incentives.
- Encourage efforts to offer affordably priced and effective EHR options.
- Consider the needs and uses of all providers.
- Spread innovation by highlighting successful provider implementation models (i.e., physician practices, critical access hospitals, and pharmacies).

Goals and Tracking

- We will monitor our progress by tracking the eligible providers and hospitals meeting meaningful use requirements.

Governance

It is critical that governance structures be put in place to assure accountability for both the privacy and security of health care information shared through electronic HIE and public/private investments in statewide health information exchange. Governance structures should address privacy and security, interoperability, fiscal integrity, and universal access.

Governance Model

In Nebraska, both the private and public sectors will share responsibilities for governance of health information exchange. Nebraska's governance structure needs to reflect the private sector's high level of leadership and investment in health information exchange. This type of relationship between state government and the private sector has been described as the Private Sector-Led Electronic HIE with Government Collaboration model. The State of Nebraska will support and collaborate with the industry. The state's eHealth advisory group, the NITC eHealth Council, will be directly involved in addressing and making recommendations regarding privacy and security, interoperability, fiscal integrity, business and technical operations, and universal access for Nebraska's statewide health information exchange. The State of Nebraska will act as the prime recipient and fiscal agent for the State Health Information Exchange Cooperative Agreement Program. As the statewide integrator and lead health information exchange, NeHII will assume the primary responsibility for implementing the State Health Information Exchange Cooperative Agreement program in Nebraska. NeHII will work cooperatively with the Nebraska Information Technology Commission (NITC) eHealth Council and the State Health Information Technology Coordinator to facilitate and coordinate the implementation of health information exchange in the state. As the State HIT Coordinator, Lieutenant Governor Rick Sheehy will coordinate health information exchange efforts within the State of Nebraska and will work with the eHealth Council to facilitate health information exchange efforts across the state. The roles and responsibilities of NeHII, the Health IT Coordinator, and the NITC eHealth Council will be further defined in a Memorandum of Understanding.

eHealth Council

Lt. Governor Rick Sheehy and the Nebraska Information Technology Commission formed the eHealth Council in 2007 to foster the collaborative and innovative use of eHealth technologies through partnerships between public and private sectors, and to encourage communication and coordination among eHealth initiatives in Nebraska. The eHealth Council is responsible for developing the state's eHealth plan, coordinating stakeholders, and providing oversight and accountability. The eHealth Council will also be directly involved in making recommendations regarding privacy and security, interoperability, fiscal integrity, business and technical operations, and universal access for Nebraska's statewide health information exchange.

Members include representatives of the following groups:

- The State of Nebraska

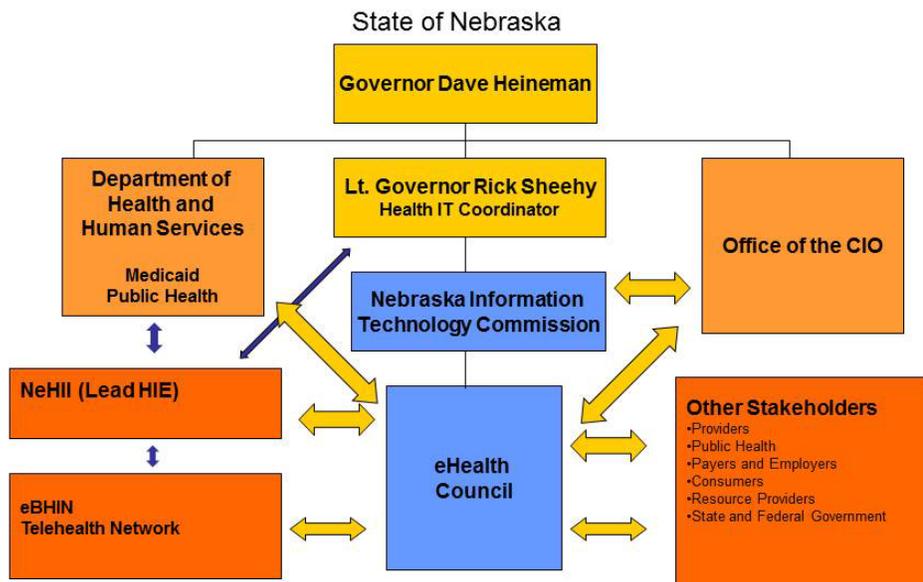
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- Health Care Providers
 - eHealth Initiatives
 - Public Health
 - Medicaid, Private Payers and Employers
 - Professional Associations
 - Consumers
 - Resource Providers, Experts, and Others

A list of eHealth Council members is included in the appendix.

The NITC and NITC eHealth Council, in cooperation with NeHII and the State Health Information Technology Coordinator, will be responsible for:

- Developing the state's strategic and operational eHealth plans and application for the State Health Information Exchange Cooperative Agreement Program.
- Coordinating activities with the statewide integrator/, the Health Information Technology Regional Extension Center, the state's health information exchanges, and other stakeholders.
- Working with the NeHII to support implementation efforts of the State Health Information Exchange Cooperative Agreement Program.
- Assisting the state Health Information Technology Coordinator in providing oversight over implementation of the State Health Information Exchange Cooperative Agreement Program.
- Establishing a framework for governance and oversight of health information technology in the state.
- Developing work groups to address privacy and security, fiscal integrity, interoperability, and business and technical operations.
- Making policy recommendations related to health information technology.
- Monitoring programmatic progress through scheduled reports, using approved reporting criteria and measures.
- Complying with all reporting requirements and the terms and conditions of the cooperative agreement to ensure the timely release of funds.
- Ensuring expenses and matching contributions meet all federal requirements.
- Maintaining a fiscal control and monitoring system that meets requirements for federal audits and through which fund expenditures may be tracked in accordance with federal requirements.
- Receiving, reviewing, and monitoring requests for fund advance or reimbursements from subcontractors or other end recipients of funding.
- Delivering disbursements to subcontractors or other end recipients of funding in a timely manner.

The following figure illustrates the relationships among the NITC eHealth Council, state Health IT Coordinator, statewide integrator (NeHII), and the state's health information exchanges.



State HIT Coordinator

Lieutenant Governor Rick Sheehy will serve as the State HIT Coordinator. As Chair of the NITC, he works closely with the NITC eHealth Council. He also works with the State's Medicaid program, public health programs, and the Office of the CIO. He will coordinate health information exchange efforts within the State of Nebraska and will work with the eHealth Council to facilitate health information exchange efforts across the state. He will be supported by the NITC's Community and Health IT Manager.

Responsibilities of the State HIT Coordinator include:

- Coordinating state government participation in health information exchange.
- Coordinating activities with the statewide integrator, the NITC eHealth Council, the state's health information exchanges, the Regional Health Information Exchange Cooperative Agreement Program, and other stakeholders.
- Assisting the NITC eHealth Council in the development of the state's eHealth Plan and the state's application for the State Health Information Exchange Cooperative Agreement Program.
- Assisting the NITC eHealth Council in the development of recommendations for a framework for governance and oversight of health information technology in the state and on other policy issues related to health information technology.
- Providing oversight over the implementation of the State Health Information Exchange Cooperative Agreement Program with the assistance of the NITC eHealth Council.

Lead Health Information Exchange

As the statewide integrator, NeHII will assume the primary responsibility for implementing the State Health Information Exchange Cooperative Agreement program in Nebraska. NeHII is a Nebraska corporation organized under the Nebraska Nonprofit Corporation Act. It was formed by a collaboration of not-for-profit Nebraska hospitals, private entities, state associations, healthcare providers, independent labs, imaging centers and pharmacies. Representatives of these entities and the Lt. Governor sit on the Board of Directors of NeHII. Members of the NeHII Board of Directors are listed in the Appendix. In 2007, a Decision Accelerator meeting, with representatives of health organizations from across the state, jump started the endeavor. NeHII has received 501(c)3 tax exempt status.

NeHII's responsibilities include:

- Overseeing implementation of the eHealth Plan and the cooperative agreement.
- Complying with all current and future requirements of the project, including those in the approved state eHealth plan, guidance on the implementation of meaningful use, certification criteria, and standards (including privacy and security) specified and approved by the Secretary of Health and Human Services.
- Collaborating with critical stakeholders, the NITC eHealth Council, the state Health Information Technology Coordinator, and the Office of the National Coordinator.
- Making regular reports on the fiscal and programmatic progress of the program to the eHealth Council and the state Health Information Technology Coordinator.
- Collaborating with the Medicaid Director to assist with monitoring and compliance of eligible meaningful use incentive recipients.
- Collaborating with the Regional Centers to ensure that the provider connectivity supported by the Regional Centers is consistent with the state's plan for health information exchange.
- Cooperating with the national program evaluation.
- Participating in the State Health Information Exchange Forum and Leadership Training.
- Monitoring programmatic progress through scheduled reports, using approved reporting criteria and measures.
- Working with the NITC eHealth Council and State HIT Coordinator to comply with all reporting requirements and the terms and conditions of the cooperative agreement to ensure the timely release of funds.

Nebraska Department of Health and Human Services

Successful implementation of statewide health information exchange requires coordination with the state's Medicaid program and public health programs. The Nebraska Department of Health and Human Services includes both the Division of Medicaid and Long-Term Care and the Division of Public Health. The NITC eHealth Council has two members representing the Nebraska Department of Health and Human Services, including the Medicaid Director. The Medicaid Director and Chief Medical Officer are members of NeHII's Board of Directors.

Transparency and Accountability

The State of Nebraska will act as the prime recipient and fiscal entity for the State Health Information Exchange Cooperative Exchange Agreement program. The State of Nebraska is committed to transparency and accountability in its handling of all funds, including ARRA funds. The State Health IT Coordinator is working closely with the State Budget Director who has also been designated as the point person for ARRA funding to make sure that all federal requirements for transparency and accountability will be met.

Key Considerations and Recommendations

- Stakeholder input should be solicited when developing policies and recommendations, including future versions of the state eHealth plan.
- Mechanisms must be put in place to ensure accountability of any funds received through the American Recovery and Reinvestment Act.

Objectives

- Address issues related to governance, oversight, and financing of health information exchange.
- Ensure transparency, accountability, and privacy.

Strategies

- Formalize the relationships among and responsibilities of NeHII as the statewide integrator, the state's health information exchanges, the Nebraska Department of Health and Human services including Medicaid and public health, the State HIT Coordinator, and the NITC eHealth Council.
- Develop mechanisms to ensure accountability and transparency.

Finance

The development of statewide health information exchange in Nebraska will require financing to both build and sustain the infrastructure to support eHealth at state, regional, and local levels. Developing and implementing interoperable HIE is a complex, multi-year process which involves a complex array of funding sources, mechanisms, recipients, and revenue sources for financing.

NeHII is developing a sustainability plan, based on a variety of funding mechanisms. Participating hospitals, one health plan, and individual users provide license revenue to ensure the exchange operates in a financially secure manner. Licenses are purchased from the software vendor and resold to participants based on organizational structure. The margin from the licenses is used for operating expenses. Additional information is provided in Nebraska's operational eHealth plan.

Funding from the State HIE Cooperative Agreement Program will be used to accelerate and expand the development of health information exchange statewide. Grant funds will be directed toward implementation costs of meeting Meaningful Use requirements, rather than operational costs to the extent possible.

Ensuring Sustainability

The federal stimulus funding is designed to last four years at which time the Office of the National Coordinator will hold HIEs accountable for sustainable revenue generating business models. The HIE business models will need to deliver value to a wide variety of stakeholders. Nebraska has identified where value is being delivered in the HIE network and is tying the primary ongoing HIE revenue streams to value delivered. Nebraska will continue to explore numerous revenue models that in combination will create sustainability for the state's health information exchanges. Funding sources and programs which may be utilized include, but will not be limited to, the following:

Regional Extension Centers are Technical Assistance Organizations which will provide assistance for health information technology adoption. They will have a primary care focus, but will be able to provide technical assistance to many provider groups.

Medicaid and Medicare Incentives will deliver financial incentives to the states provider groups. Initially the incentives are financial rewards for meeting "meaningful use" requirements. The incentives eventually turn to penalties for not meeting meaningful use requirements.

Medicaid Administration. Administrative funds to State Medicaid Agencies can be used for administering incentive payments, conducting oversight including tracking meaningful use attestations and reporting mechanisms, and pursuing initiatives to encourage adoption of electronic medical records to promote health care quality and to exchange data. Medicaid can support activities which support health information exchange. Eligible activities can receive a 90/10 federal match.

Provider Remittance Fees. There will be numerous fee-based plans for providers to integrate with the state-level HIE and exchange health information. Nebraska's

health information exchanges are exploring both subscription and transaction based fee models.

Payer Adjudication Fees. Appropriate fee-based models for the state's payers will be explored. The fee structures could range from subscription fees to per member fees or some combination.

Strategic Advisory Services. NeHII is being sought after by states throughout the U.S. to provide services in the planning, development, implementation, and delivery of additional HIE functionality. Therefore an independent subsidiary company was formed called HIO Shared Services (HIOSS) which offers other state and private HIEs advisory consulting services and shared infrastructure solutions to start-up HIE efforts both public and private. This need represents significant future revenue opportunities that have the potential to benefit HIE in the State of Nebraska.

It is expected that HIE inside and outside of Nebraska will continue to benefit from expertise surrounding the development of new functionality, stakeholder capital, establishment of revenue models, modifications to operational and strategic plans, and assistance with the implementation of additional HIE members. The resulting revenue stream is likely to grow as HIE in the U.S. continues to expand and develop.

Additional information is provided in the sustainability section of the operational plan.

Objectives

- Support the development of a sustainable business model for building and maintaining health information exchange in Nebraska.
- Leverage the state's role as a payer to support health information exchange.

Strategies

- Encourage and support the effective use of investments, including:
 - **Leveraging existing and planned investments in health information exchange, public health, Medicaid, and other programs.** The state has two health information exchanges participating in the State HIE Cooperative Agreement. The state has invested also invested in an immunization registry and electronic reporting of reportable diseases. These systems can be utilized to support meaningful use.
 - **Leveraging Medicaid administrative funding for provider incentives.** States are authorized to receive a 90 percent federal match for administrative expenditures related to provider incentive payments for meaningful use of EHRs.
 - **Leveraging other programs which support health information exchange, workforce development, and broadband development.** Wide River Technology Extension Center is engaged as a partner in Nebraska's

efforts to develop statewide health information exchange. Workforce and broadband development programs will also be leveraged.

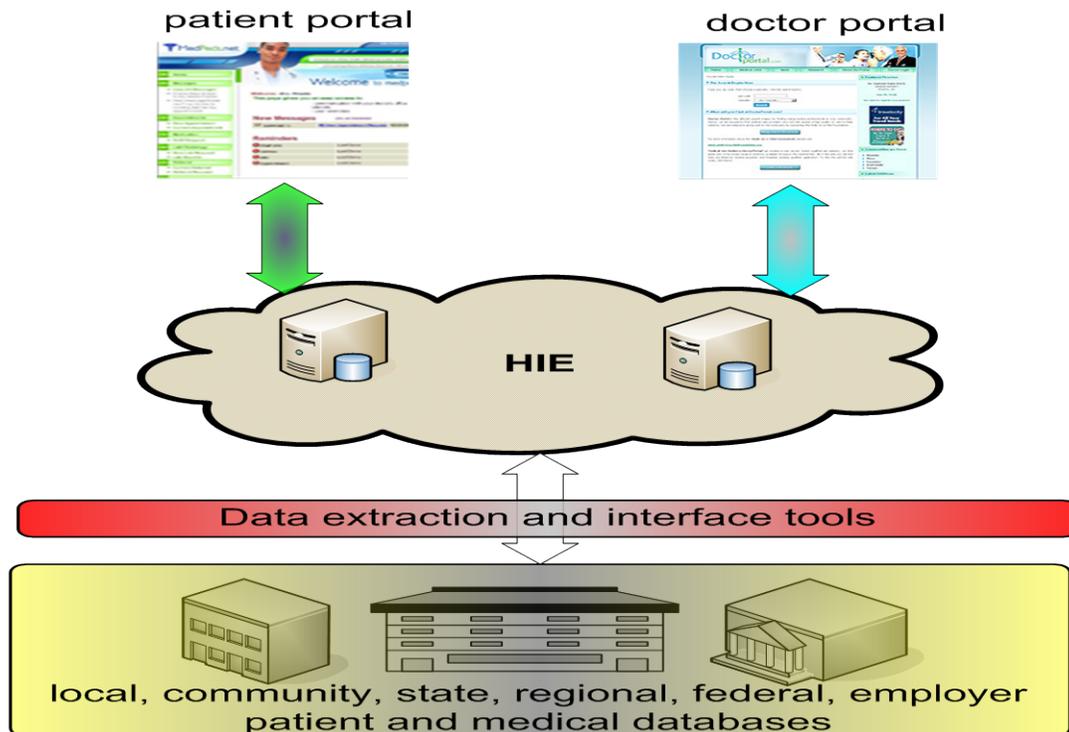
- **Identifying sources of grant funding to fund start up costs and accelerate implementation.** The State Health Information Exchange Collaborative Agreement program is one source of funding for start up expenses for health information exchange efforts. Other potential sources of funding will also be identified.
- Determine where value is being delivered in the HIE network and tie the primary ongoing HIE revenue streams to value delivered.
- Market the benefits of health information exchange services to providers.

Technical Infrastructure

A statewide HIE is a “system of systems” in which participating health information systems work together within a defined architecture. The architecture consists of a set of principles, patterns and processes used to guide the design and construction of technical systems. Nebraska’s technical architecture will be based upon a federation of health information exchanges and other providers, following national standards. The architecture will provide interoperability within the state. Interoperability with other states and federal care delivery providers will be made through a connection to the Nationwide Health Information Network.

NeHII Query Model Exchange

NeHII will serve as the lead health information exchange and statewide integrator for Nebraska, providing query model health information exchange. The following diagram graphically represents the Nebraska HIE.



Review of the overall process is best explained beginning at the bottom of the diagram and proceeding upward. The following discussion is a high level recap of how health information is collected and then displayed.

1. Source data is originally created and maintained at various participating organizations. These include a variety of organizations such as hospitals, labs, clinics, and government organizations.
2. An interface process is established to extract and capture the necessary data which is then cleansed and normalized (a staging process) for insertion into patient datasets.

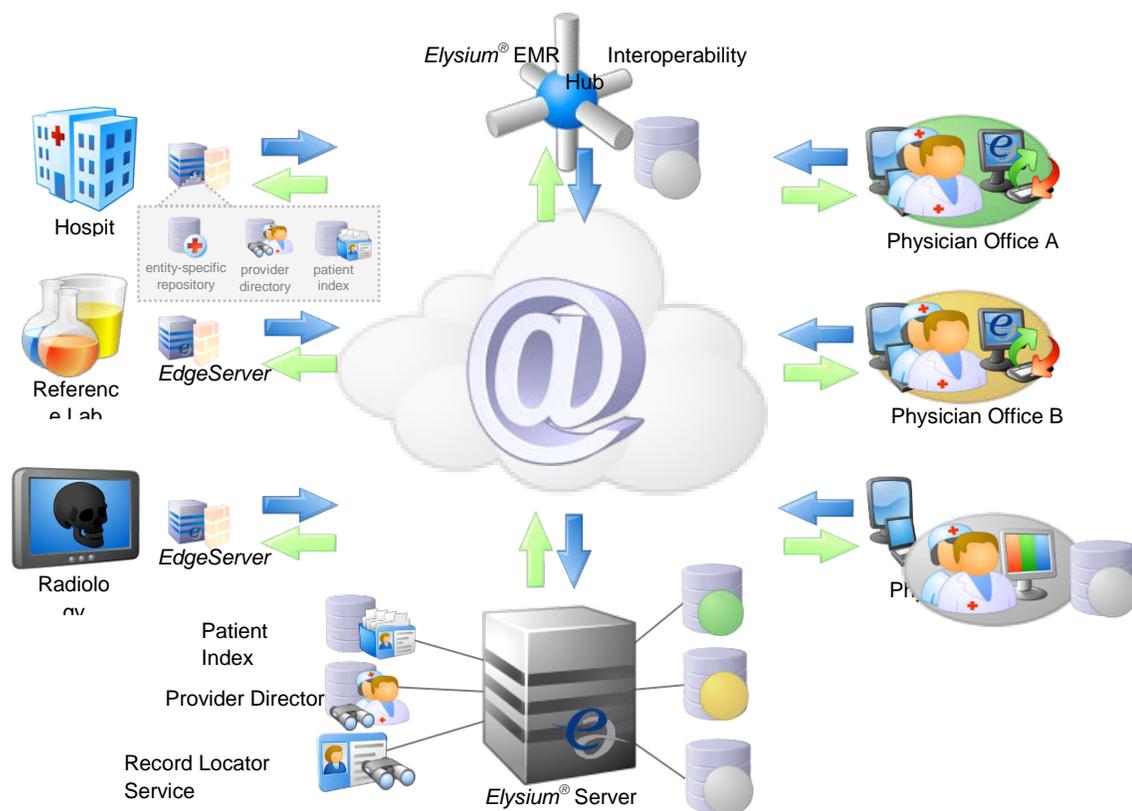
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3. As a part of the staging process, the Master Patient Index (MPI) and the Record Locator Service (RLS) which indicates that a patient has medical information available at the corresponding participating organization.
 4. The MPI stores limited patient demographics along with other Meta data on the patient provided by the participating organization. Using an algorithm, an automatic link is made between the associated record to the records of other connected and participating organizations for that patient.
 5. After the MPI is updated with the necessary information, patient information can be securely accessed as needed – via the portal.
 6. In addition to being able to obtain patient information, the portal allows the user access to data (lab results) specific to the addressee – clinical messaging.

Nebraska's statewide health information exchange will initially utilize a hybrid federated model. In this phase, the system will use a peer-to-peer network to connect all participants without maintenance of a central repository. In this model, participating providers send all clinical data messages to the HIE, which then routes the clinical message to the intended recipient. Recipients are identified when the providers indicate the recipient in the message or result header.

The process outlined above describes a hybrid method of data exchange which is a mix of both the federated and centralized models. The hybrid model uses a system of networks connected through the Internet. Participants submit clinical data to edgeservers responsible for the data management of patient identification, storage, system management, security, and privacy. The edgeservers are interconnected via a centralized Master Patient Index (MPI) or Record Locator Service (RLS). This type of architecture is simple and encourages innovation.

Advantages of this model include improved public health disease surveillance, improved communication, and the empowerment of consumers through access to healthcare information.

The servers are all located in a secure environment with complete backup and disaster recovery capability. Additionally, the information on each server is kept separately by each data provider to prevent comingling of data. The following diagram illustrates NeHII's architecture.



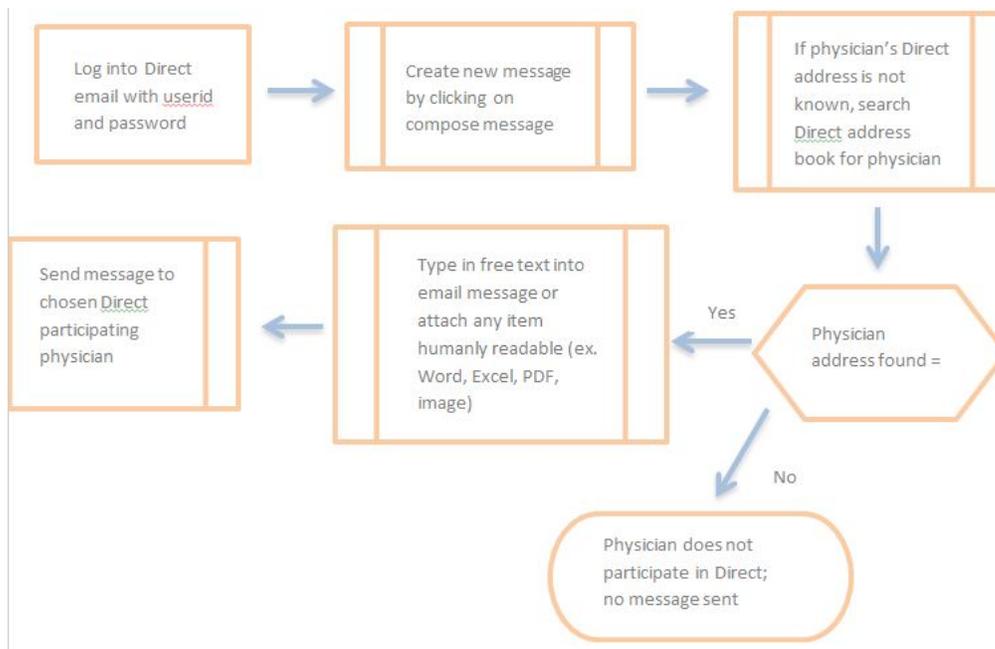
A phased implementation of the identified HIE services will reduce risks and help ensure success. The initial phase will involve deployment of network infrastructure as well as the clinical messaging service. Successive phases will involve deployment of medication history and finally, immunization registry.

Direct

Direct enables a healthcare provider to electronically and securely push specific health information, such as discharge summaries, clinical summaries from primary care providers and specialists, lab results to ordering providers, or referrals over the internet to another healthcare provider(s) who is a known and trusted recipient. Direct provides health care providers another option for exchanging health information among participants who know and trust each other via secure messaging. The key difference between regular e-mail and Direct is that messages are encrypted and digitally signed by the sender in compliance with the Standards and Interoperability Framework. Direct does not provide for search and discovery functions such as searching for health records for an unconscious patient in an emergency room.

NeHII/HIO Shared Services is acting as Nebraska's Health Information Services Provider and is offering Direct services. NeHII is also developing a provider directory which will contain demographic, digital certification, and routing information for every health care

provider in Nebraska. Direct is a standalone product that is not connected to the NeHII VHR or EMR at this time. The only way a physician can receive or send a Direct message is if they have a Direct email address. The two ways to view a Direct message are through the Axolotl Direct web interface or adding your Direct email address to your current email server. The following diagram illustrates the Direct workflow:



NeHII is working with Pathology Services, P.C. in North Platte to pilot the use of Direct to deliver lab results to ordering providers. NeHII's primary use cases for Direct include:

- Independent labs sending lab data to providers or entities
- Referrals between NeHII participants and the VA Hospital in Omaha
- Patient information sharing of 42CFR Part 2 ePHI between eBHIN provider and NeHII provider
- Patient information sharing between provider and patient via personal health record providers such as SimplyWell and Microsoft HealthVault
- Patient information sharing across state lines

eBHIN

The eBHIN HIE includes software with enterprise architecture that will allow access for the six behavioral health regions of the state and the behavioral healthcare providers contracting with the regions. Accessible via web portal, this enterprise architecture is a software solution that operates on a single database or central data repository (CDR) that supports the unique requirements of multiple organizations, multiple provider organizations, and multiple

locations. The HIE system will include a centralized data base with the capability of maintaining wait lists, capacity reports, referral management coordination, easy access to longitudinal consumer data, e-prescribing, medication reconciliation, and lab results .

eBHIN is using a hybrid Federated model, also known as a blended model. The central data repository contains data which is common and relevant to all behavioral healthcare providers in the health information exchange. The document locator service will be used to share other data and documents among providers for those consumers who have “opted in.” It is an index of the location of documentation held by participating organizations.

Recommendations and Conclusions

- National standards and certification processes will be used to facilitate interoperability.
- Interoperability solutions selected should be cost-effective and provide the greatest return on investment to all engaged parties, and all who benefit contribute to the cost of the investment.

Objectives

- Support the development and expansion of health information exchanges to improve the quality and efficiency of care.
- Support the development of interconnections among health information exchanges in the state and nationwide.
- Promote the development of a robust telecommunications infrastructure.
- Ensure the security of health information exchange.

Strategies

- **Facilitate participation in existing health information exchanges to ensure statewide coverage.** Providers in all areas of the state have the opportunity to participate in health information exchange through query model exchange via NeHII, query model exchange through eBHIN, or through secure messaging using Direct through NeHII/HIO Shared Services. Statewide health information exchange is only possible if providers choose to participate. Provider participation should be encouraged, monitored and evaluated. Provider participation can be encouraged by partnering with professional organizations to publicize successful provider implementation models. If participation rates are less than expected, efforts should be made to identify and address barriers to participation.
- **Coordinate the statewide technical infrastructure to support HIE integration.** NeHII will act as the integrator for Nebraska’s regional and specialty HIEs.

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- **Assure the technical architecture meets the overall clinical and policy objectives of the state.** The eHealth Council will ensure the technical architecture meets the needs of the state.
 - **Enumerate the critical environmental assumptions that the technical architecture must address, including interactions among HIEs and other partners.**
 - **Address issues related to broadband access and affordability if necessary.** Nebraska has a robust telecommunications infrastructure. Nevertheless, some providers in rural areas of the state may face barriers related to broadband availability and affordability. The Nebraska Public Service Commission has received funding through the National Telecommunications Information Administration's Broadband Mapping program. Through the program, regional technology teams have been developed to identify and address issues related to broadband availability, affordability, and use. The program provides a vehicle for health care providers to address any broadband-related issues.

Business and Technical Operations

NeHII

The following services are available or under development through NeHII:

- **Virtual Health Record.** NeHII's Virtual Health Record (VHR) provides a comprehensive electronic health record, including patients' laboratory, radiology, reports, including history and physicals, consults, discharge summaries, visit records, medication history, problem lists, allergies, up-to-date eligibility information, and exams ordered by clinicians, and any encounter notes and referrals.
- **Electronic Medical Record.** NeHII offers a full EMR product which provides access to patient data from the NeHII exchange, including patients' laboratory, radiology, reports, including history and physicals, consults, discharge summaries, visit records, medication history, problem lists, allergies, up-to-date eligibility information, and exams ordered by clinicians, and any encounter notes and referrals.
- **E-Prescribing.** Prescribers have the ability to view patients' eligibility, prescription history, formularies, and generic and therapeutic alternatives, which are displayed when prescribing. Prescriptions are automatically checked for dangerous interactions and allergies and are delivered to the patient's pharmacy. Refills are approved with a few clicks from any computer.
- **Interoperability HUB/Physician Connection.** EMR users can interface with NeHII through the Interoperability HUB/Physician Connection.
- **Immunization Reporting (In Development).** Users of NeHII's EMR can now send immunization records to the State's immunization registry, NESIIS. As of June 2012, NeHII and Regional West Medical Center were testing the submission of immunization records to NESIIS. The final phase will allow users of NeHII's VHR to query the immunization registry.
- **PDMP Functionality.** Legislation in 2011 authorized the Nebraska Department of Health and Human Services to work with NeHII to develop a Prescription Drug Monitoring Program. This functionality is now available. Alert functionality may also be added, pending funding availability.
- **Secure Clinical Messaging Using Direct.** NeHII/HIO Shared Services is piloting the use of Direct to deliver lab results to ordering physicians and is working with eBHIN to pilot the exchange of behavioral health information with patient consent through Direct. Other use cases are being explored.
- **Patient Access.** NeHII is working with SimplyWell to pilot patient access to health information.
- **Disease and Syndromic Surveillance (In Development).** NeHII is working with the DHHS Division of Public Health to implement disease and syndromic surveillance reporting functionality.

eBHIN

Additionally, the following services are/will be offered by eBHIN:

- Single point of data entry for ASO electronic upload and EMR/EPM applications;
- ePrescribing;
- Medication reconciliation;
- Lab results;
- Clinical decision support;
- Aggregate database reporting capability;
- Wait list and referral management;
- Payment capabilities.

eBHIN went live with its HIE functionality in the late spring of 2012, starting with Region 5 in Southeast Nebraska and moving to Region I in the Panhandle and Region 6 in the Omaha area by the summer 2013. Other regions will be added as time and resources allow.

Objectives

- Support meaningful use.
- Encourage the electronic exchange of public health data.
- Encourage the integration of health information exchange with telehealth delivery.

Strategies

- Continuously assess and prioritize additional functionality to address meaningful use requirements.
- Support the development of effective analytics reporting for decision support and quality reporting.
- Encourage and support e-prescribing and refill requests.
- Provide prescription fill status and/or medication fill history.
- Encourage and support the provision of electronic health information to patients.
- Partner with payers and other stakeholders to develop strategies to improve care coordination and quality and efficiency of health care.
- Encourage electronic reporting and use of public health data.
- Provide electronic eligibility and claims transactions.
- Provide electronic clinical laboratory ordering and results delivery.
- Provide clinical summary exchange for care coordination and patient engagement.

Legal/Policy

Privacy and security is paramount to the successful exchange of health information. The Health Insurance Portability and Accountability Act of 1996, known as “HIPAA,” provides federal protections for health information. The health information exchange privacy and security policies of NeHII and eBHIN have been developed to be in compliance with HIPAA. NeHII’s Privacy and Security Committee is charged with periodically reviewing and updating NeHII’s policies to address issues such as the exchange of public health data. eBHIN’s policies are also compliant with 42 CFR Part 2. eBHIN has developed an innovative consent process which is compliant with 42 CFR Part 2 and will allow for the exchange of behavioral health information from eBHIN to providers in other treatment settings.

Efforts have also been undertaken to ensure that Nebraska’s laws do not present a barrier to the exchange of health information. Between 2009 and 2011, five laws were passed which included provisions which will facilitate the exchange of health information, including legislation which authorizes the Nebraska Department of Health and Human Services to work with NeHII to develop a Prescription Drug Monitoring Program.

Consideration of consumer needs and concerns is essential for widespread adoption of health information exchange. Research indicates that Nebraskans have positive views about sharing health information electronically, but do have some privacy and security concerns. The widespread consumer support for health information exchange by Nebraskans is evidenced by NeHII’s opt-out rate of less than three percent. Consumer outreach materials are being developed by NeHII and eBHIN to provide consumers with information on these initiatives.

On March 22, 2012, ONC released a program information notice describing requirements for the privacy and security framework section of the plan updates on March 22, 2012. A corrected version was released on March 23, 2012. This guidance addresses the following eight core domains of the *Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information*:

1. Individual access
2. Correction
3. Openness and transparency
4. Individual choice
5. Collection, use and disclosure limitation
6. Data quality and integrity
7. Safeguards
8. Accountability

The privacy and security framework section of the operational plan addresses these domains.

Federal and State Laws

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) is the most important federal law affecting health information sharing. The HIPAA Privacy Rule provides federal protections for personal health information held by covered entities and gives patients an array of rights with respect to that information. The Privacy Rule is also balanced so that it permits the disclosure of personal health information needed for patient care and other important purposes. HIPAA allows for the sharing of personal health information for treatment, payment, and operations, without consumer consent. Providers are required to report incidences of certain diseases, births, deaths, trauma incidences, etc. to public health agencies, and may make other disclosures of consumer information for specified health and safety purposes. The HITECH Act introduced new security and privacy requirements, extending HIPAA requirements to business associates of covered entities and requiring notification of breaches. The HITECH Act also authorized State Attorney Generals to enforce HIPAA provisions. Certain types of health information receive additional protection under federal law. For example, Section 42 of the Code of Federal Regulations Part 2 requires consent for the release of alcohol and drug abuse treatment facility information.

Nebraska's laws have been reviewed by the Legal Work Group of the Nebraska Health Information Security and Privacy Committee, the E-Prescribing Work Group of the NITC eHealth Council, and other stakeholders. Between 2009 and 2011, five laws were enacted which removed barriers to health information exchange:

- **LB 195 (2009)** updated pharmacy provisions requiring pharmacists to keep copies of prescriptions in a readily retrievable format instead of a paper copy.
- **LB 849 (2010)** eliminated the 180-limit on authorizations for the release of health information.
- **LB 591 (2011)** included provisions which will facilitate the electronic exchange of syndromic surveillance and immunization information.
- **LB 179 (2011)** eliminated the requirement for pharmacists to write the date of filling and sign the face of a prescription for controlled substances listed in Schedule II, facilitating the future use of e-prescribing for controlled substances.
- **LB 237 (2011)** authorized the Department of Health and Human Services to collaborate with NeHII to establish a prescription drug monitoring program.

Policies

The health information exchange privacy and security policies of NeHII and eBHIN have been developed to be in compliance with HIPAA. NeHII's Privacy and Security Committee is charged with periodically reviewing and updating NeHII's policies to address issues such as the exchange of public health data. eBHIN's policies are also compliant with 42 CFR Part 2. eBHIN has developed an innovative consent process which is compliant with 42 CFR Part 2 and will allow for the exchange of behavioral health information from eBHIN to providers in other treatment settings.

NeHII uses an opt-out policy for consumer consent. The default is set to include the information in the system unless the consumer takes action to opt-out of the health information exchange. eBHIN uses an opt-in approach. The patient must execute a compliant authorization for release of information. A notice must be included with the record delivery that states there is prohibition on re-disclosure of the records without patient consent in the record recipient setting.

Trust Agreements

In order to ensure health information security and privacy, health information exchanges must put in place signed trust agreements which allocate responsibilities and accountability. Trust agreements establish common agreement on essential policies. Each health information exchange must have trust agreements with end users which address compliance with applicable law, cooperation with other health information exchanges, requirements to the health information network only for “permitted purposes,” limitation on the future use of data received through the health information exchange, and security measures regarding password protection. A Data Use and Reciprocal Support Agreement (DURSA) is a comprehensive, multi-party trust agreement that must be signed by health information exchanges wishing to exchange data with other exchanges. As interstate exchange develops, NeHII and eBHIN will likely need to enter into trust agreements with other exchanges.

Coordination, Oversight and Enforcement

The NITC eHealth Council will continue to monitor legal and policy issues related to health information exchange and coordinate efforts to address any legal and policy issues.

The Office of Civil Rights is responsible for administering and enforcing the HIPAA Privacy and Security Rules and conducts complaint investigations, compliance reviews, and audits. The Attorney General’s Office may also enforce provisions of the HIPAA Rules.

Consumer Research and Education

The University of Nebraska Public Policy Center conducted a deliberative discussion and survey on sharing health information electronically on Nov. 17, 2008, building upon the consumer research conducted by the Creighton Health Services Research Program for the Nebraska HISPC. The deliberative discussion and survey indicated that Nebraskans have positive views about sharing health information electronically, but do have some privacy and security concerns. Most participants in the deliberative discussion felt that the State of Nebraska had a role in ensuring the privacy and security of health information (100%), providing information to consumers about health information security and privacy (94%), regulating health information networks (91%), and facilitating public-private partnerships to exchange health information (88%).⁷

⁷ Abdel-Monem, Tarik, and Herian, Mitchel, Sharing Health Records Electronically: The Views of Nebraskans, University of Nebraska Public Policy Center, December 11, 2008,

NeHII is also launching a statewide consumer education campaign in 2012, including a consumer microsite and public service announcement. NeHII has been tracking the opt-out rates since pilot implementation in March 2009. The percentage of consumers opting out of the health information exchange has been below 3%.

Key Considerations and Recommendations

- Privacy and security are key requirements for the exchange of health information exchange.
- Privacy and security policies and practices will continue to evolve in response to changes in the legal environment and technological changes.
- Nebraska's privacy and security laws may need to be further reviewed in light of the HITECH ACT. Compliance may require ongoing monitoring and policy changes.
- Although consumers are generally supportive of the use of health information technology, efforts should be made to educate consumers on how their health information is used, how it is protected, and what privacy rights they have.
- Providers may also need information and training on privacy and security laws and practices.
- A mechanism for consumers to confidentially report concerns about the handling of personal health information and their health data should be established independently from the statewide integrator. Information for consumers about this mechanism should be widely disseminated by the state and publicly accessible.

Objectives

- Continue to address health information security and privacy concerns of providers and consumers.
- Build awareness and trust of health information technology.

http://ppc.unl.edu/userfiles/file/Documents/projects/eHealth/Sharing_Health_Records_Electronically_Final_Report.pdf, accessed on June 25, 2009.

Strategies

- Coordinate with the Attorney General's Office, State HIT Coordinator, and the privacy and security officers of the state's HIEs to develop a framework for privacy and security enforcement.
- Continue to review and update privacy and security policies.
- Investigate statutory barriers to health information exchange.
- Provide information on privacy and security to providers and consumers through a statewide consumer education campaign, a privacy and security website, and a brochure for statewide distribution.
- Establish a collaborative infrastructure with the ongoing capacity to identify issues, consider options, and advance recommendations through a transparent and inclusive decision-making process.
- Encourage the harmonization of policies related to access, authentication, audit and authorization.

Coordination

Medicaid Coordination

Current status

The Nebraska Medicaid Program (Medicaid) Director is a member of the state-wide e-Health Council and also holds a seat on the NeHII Board of Directors. Medicaid HIT staff participate in bi-weekly eHealth workgroup calls and in the bi-weekly ONC calls with the Nebraska grantees.

Cooperation with Statewide Integrator

Medicaid has collaborated with the eHealth work group partners throughout the development of its State Medicaid Health Information Technology Plan (SMHP) (approved by CMS late 2011) and during the preparation for launch of its Electronic Health Record (EHR) Incentive Payment Program (launch date 5.7.2012). Medicaid's primary support for ONC's strategic goals is through administration of the EHR Incentive funds for Nebraska providers. Medicaid intends to continue to leverage HIT/HIE funds available through CMS to support Nebraska providers in adopting and meaningfully using certified EHR technology.

Funding Sources

There are multiple federal funding stream distribution mechanisms available for HIT/HIE development in each state. Medicaid planning efforts will produce a concise definition of the activities that will be conducted under its CMS-administered HITECH funding stream and, while not duplicating effort, will ensure that all dependencies, along with technical and operational relationships, are considered.

The Medicaid HIT/HIE planning will be conducted with federal financial participation under ARRA separately from its direct contribution to activities funded under this grant request. Federal matching funds obtained outside this grant request will be targeted to develop enhanced and additional Medicaid technical abilities. The separately funded activities will support and enable the objectives and requirements of the statewide HIE.

Planning and investment in the study of technical solutions that support HIT activities requires Medicaid to apply critical analysis to the chronology and funding of all HIT/HIE components and activities. Additionally, federal matching funds are available through CMS, specifically for state Medicaid agencies, to use in the operation of their program and the development of system tools. In that regard, Medicaid fully subscribes to the MITA (Medicaid Information Technology Architecture) principles, and the application of these and their alignment with information and systems within and without Medicaid control will govern the development of technical capability and support Medicaid uses for in-house systems and for support of the state-wide HIT/HIE objectives.

Meaningful Use

The criteria to establish and measure meaningful use are being defined by CMS and the ONC through iterative development of rules. CMS is also establishing requirements for State responsibilities to track “meaningful use” of certified EHR technology by providers, and Nebraska like other states will engage in planning to ensure that such use may be tracked and reported in a manner consistent with the federal guidelines.

CMS has advised Medicaid that “Section 4201 of the Recovery Act requires that incentive payments be used for the adoption and use of “certified EHR technology,” which (pursuant to section 1903(t)(3)(A) of the Social Security Act (the Act) and by definition) must be certified as meeting standards adopted under section 3004 of the Public Health Service (PHS) Act. Section 3004(b)(1) of the PHS Act requires the Secretary to adopt, which may be through an interim-final rule, an initial set of standards, implementation specifications, and certification criteria.” The State Medicaid HIT Plan (SMHP) and its accompanying Implementation Advance Planning Document (IAPD) narrate Medicaid’s plans for implementing the EHR Incentive Payment program in adherence with the final rule. The SMHP is a living document which will be updated and amended annually to reflect current planning and priorities.

Consequent of the information contained in any forthcoming rule, Medicaid must ensure that EHR software is certified, providers are eligible for the incentive program, and a reportable, continual increase in the percentage of providers who adopt the technology into their practices is documented. Further, Medicaid must ensure that incentives paid to providers are not duplicative of those paid by Medicare, and encourage providers to not only adopt and implement but upgrade the software when appropriate. Medicaid understands that coordination at the operational level will be required with Regional Extension Centers (RECs) as established under PHS 3012 Title XXX for technical support and guidance. Additional coordination procedures must be developed and put into place with Medicare and other entities for the administration of the ARRA HIT provisions, as well as the continuance of interaction with both the ONC and CMS in the development and implementation of strategic administrative and procedural plans that address the HIT and MITA plans for the next five years and beyond.

Medicaid will be required to devise metrics, and the associated reporting capabilities, that demonstrate value has been obtained from the adoption and use of EHR pertaining to reduced prescribing errors, reduced duplication of services, and possibly timeliness and accuracy measurement of provider submitted data.

Medicaid’s participation in the development of a specific State roadmap for HIT adoption and use as it relates to Medicaid as well as the State’s overall plan for electronic health information exchange as specified under section 3013 of the Public Health Service Act. Participating in Statewide efforts to promote interoperability and meaningful use of electronic health records will help define the Medicaid-specific performance goals related to EHR technology adoption, use, and expected outcomes required under 4201.

CMS expects any State Medicaid program to include in their SMHP the vision for Medicaid to become part of existing or planned Federal, regional, statewide, and/or local health information exchanges (HIE) with projected dates for achieving objectives of the vision where appropriate. Medicaid will build off of existing efforts to advance regional and State-level HIE, facilitate and expand the secure, electronic movement and meaningful use of

health information according to nationally recognized standards, and move towards nationwide interoperability. The State must also consider the types of changes that may be needed to transform its current MMIS into one capable of accommodating this future vision in a manner consistent with the MITA Framework 2.0.

ARRA Section 4201 also requires Medicaid to:

- Establish leadership accountability for assuring return on investment and provider public reporting on clinical quality measures and outcomes. Quality measures must be designed to allow more stringent criteria be added over time.
- Arrange or provide technical assistance and training of Medicaid providers in the planning, adoption and use of EHRs, and inform providers about other resources such as the Regional Extension Centers.
- Provide forums and opportunities for input from stakeholders, including advocacy organizations, other public social service agencies, and safety net providers.
- Collaborate and coordinate with other HIT initiatives in the public and private sector, such as those being conducted by a State designated entity, community health centers, safety net hospitals, public health, behavioral health, VHA, DoD, CDC, IHS, HRSA, AHRQ, SAMHSA, and other States (where appropriate).
- Continue to bring successful Medicaid Transformation Grant initiatives and projects to scale.
- Initiate, where appropriate, State legislation as necessary to create the legal and regulatory authorities for Health Information Exchange/EHR.
- Ensure that existing quality reporting processes are aligned.

HIT/HIE/EHR/EMR Activities

Medicaid continues to engage in planning activities and the development of HIE/EHR-related objectives. Medicaid activities include:

- Medicaid will be charged by CMS with proving the eligibility of all parties that receive HIT incentive equipment, funding, and training, as well as with definition of meaningful use and associated metrics that will be used to gauge the compliance with HIT provisions and the outcome objectives of increased e-health information exchange, clinical outcomes, and administrative and health care delivery efficiencies. The challenge to Medicaid is the potential detail and complexity of HIT/HIE requirements.
- Meaningful Use rulemaking is continuing to clarify the definition and measurement of Meaningful Use, a cornerstone objective of the HIT program. Over time, in compliance with federal guidance, Medicaid must refine the data sets from EMR and EHR data and use these data sets for internal and external purposes. Privacy and security measures that meet state and federal standards will be imposed on all data and the transmission and use thereof.

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- Medicaid plans to eventually use the EMR and EHR data to identify providers who demonstrate increased efficiencies, reduce overuse of services, reduce the duplication of services, and produce improved clinical health outcomes in not only the Medicaid population, but in general practice.
 - Medicaid may continue to use the data collected to develop clinical practice guidelines and provide clinical decision support tools, supplemented by web-based client health pages for feedback to physicians, to be used for, as an example, medication compliance.
 - Medicaid, under CMS HIT funding and in cooperation with the Regional Extension Center, will ensure certified EMR and EHR technology is employed and will provide our stakeholder users with training and support. It is anticipated that this training and support will encourage the use of information e-exchange to improve quality and care coordination, reported with measures of clinical quality that Medicaid will develop to illustrate both access and successful application.
 - Medicaid will plan the distribution of incentive funds and structure federally-required audit procedures to remain eligible for the matching funds. Benchmarks and performance measures for the program will include assessments of e-health penetration into the Medicaid provider and client populations.

Nationwide Health Information Network

As the Nationwide Health Information Network and functions are developed and evolve, Medicaid will comply to the extent possible with appropriate exchange capabilities and EHR data, including associated data sets contributed to and maintained by Medicaid, Nebraska's lead health information exchange, and other HIE/HIO/RHIO entities with whom Medicaid has or will establish an exchange relationship. Should the Nationwide Health Information Network utilize exchange protocols that are different than the HIE methods in place with Medicaid's HIE partners, conversions or interfaces will be accommodated to accomplish the provision of data to the Nationwide Health Information Network.

It is likely that Medicaid may set as a HIT goal the collection and study of ever-expanding EHR data. Recognizing that the Nationwide Health Information Network access to data from all payers and providers may be leveraged to provide results from the compilation of vast continuum of care studies that will in turn support any local or state payer or HIO in their efforts to improve care outcomes and quality improvements as well as contribute to the local provision of clinical decision support intelligence, Medicaid expects ultimately to be able to accommodate a direct relationship with Nationwide Health Information Network for the provision of any additional data as requested.

In conclusion, Medicaid will support the statewide HIE and its business model pro forma to the extent reasonable and possible under ARRA and CMS regulations, and take every advantage to achieve e-health information-based innovations throughout the Medicaid program, its operation, and its system support suite.

Coordination of Medicare and Federally Funded, State-based Programs

Efforts are being made to coordinate with Medicare and other federally funded, state-based programs.

Epidemiology and Laboratory Capacity Cooperative Agreement Program (CDC)

The Epidemiology and Laboratory Capacity Cooperative agreement between CDC and the State of Nebraska is a primary funding source for the surveillance, collection, analysis and intervention in public health disease situations. There are a number of electronic data sources that are supported, including the Nebraska Public Health Lab, the water lab, the NEDSS system, West Nile Surveillance and the Arbonet system. Currently about 90% of laboratory results for reportable diseases are being reported electronically through the NEDSS system. Most other epidemiology and surveillance systems will be recipients of improved quality and efficiency of data achieved through the HIEs.

The above systems are funded through CDC and use Public Health Information Network (PHIN) standards to communicate with CDC. Nebraska has been working with CDC, ASTHO and other public health organizations to standardize reporting and integration requirements for public health data. Much of the work Nebraska does in this area is coordinated by the Public Health Data Standards Consortium.

Assistance for Integrating the Long-Term Care Population into State Grants to Promote Health IT

Electronic medical records (EMR), and by extension, the Electronic Health Record (EHR) contain data that to be useful must adhere to standards that all users will recognize and utilize. Providers that are not directly incented under the provisions of ARRA funding will be beneficiaries of any payor expansion of the EMR/EHR technology and subject to the same sorts of data analysis.

Long-Term Care is an example of a provider group that will be affected by the expansion of EHR, in that the format of the EMRs at use in such facilities will be required to be interoperable in the larger health information exchange models. The American Health Information Management Association and the Reigenstreif Institute will contribute to the development of coding standards for EHR with their Logical Observation Identifier Names and Codes Terminology.

The ONC, as it establishes regulations for interoperability in the HIT initiatives, will work in concert with these and other standards organizations to develop and promulgate rules that will extend to all electronic health records and the exchange thereof.

Medicaid will accommodate the development work of the ONC and private organizations into its overall State Medicaid HIT Plan (SMHP), and ensure the flexibility to incorporate developing standards into the HIT operation.

HIV Care Grant Program Part B States/Territories Formula and Supplemental Awards/AIDS Drug Assistance Program Formula and Supplemental Awards (HRSA)

The Ryan White Part B Program provides medications to persons living with HIV disease through the AIDS Drug Assistance Program (ADAP) as well as to provide emergency assistance for rent, utility, transportation, food and insurance premium payments. The ADAP is funded through a contract between the State of Nebraska and the University of Nebraska Medical Center. The ADAP also provides Medicare Part D premiums for patients who meet the eligibility requirement, including the Low Income Subsidy (LIS) program. This collaboration ensures that the Ryan White Program funds are utilized as a payer of last resort for any services that are provided to patients/clients.

Nebraska receives formula (base), ADAP earmark and in FY 2009, supplemental funds to assistance with the provision of medication therapy. The Program is funded by HRSA under the Ryan White Care Act and continues under the reauthorization of the 2006 Ryan White Modernization Act. The Program has been funded since 1993 and works collaboratively with federal and community partners to ensure that services are provided. The Ryan White program Manager is the authority for administering all funds distributed by HRSA for the Ryan White Part B Program in Nebraska.

State Office of Rural Health Policy (HRSA)

The mission of the Nebraska Office of Rural Health is to define and promote the development of a health care system that assures the availability and accessibility of quality health care services to meet the needs of people living in rural Nebraska. Programs and activities are designed to assist rural Nebraskans get high quality health care through a variety of efforts. The Office of Rural Health was instrumental in HISPC and was represented on the eHealth Council. The Office of Rural Health provided significant support for the Southeast Nebraska Health Information Exchange in Thayer County. The Office of Rural Health is heavily involved in workforce development for rural Nebraska, telehealth access, and broadband technologies. Access to health care and personal electronic health care data are critical components to improved rural health.

State Office of Rural Health Primary Care Office (HRSA)

The Primary Care Office defines underserved areas and populations for health care services. Efforts are made to enhance the access to health care services and health care providers in these underserved areas. The Primary Care Office collaborates with the National Health Service Corps to place primary care, mental health and dental health providers in underserved areas. The State Office of Rural Health Primary Care has an agreement with the University of Nebraska Medical Center's Health Professions Tracking System to monitor and assure timely information regarding health care provider practice locations and availability. There are a variety of federal and state programs which require a shortage area designation for one to be eligible to participate. Federal shortage area designations which are submitted by the State Office of Rural Health Primary Care Office are made by the federal Office of Shortage Designation. State shortage area designations

are set by the Nebraska Rural Health Advisory Commission which is manned by the State Office of Rural Health.

State Mental Health Data Infrastructure Grants for Quality Improvement (SAMSHA)

The Nebraska Department of Health and Human Services Division of Behavioral Health Services (DBHS) is responsible for submitting data to the Substance Abuse and Mental Health Service Administration (SAMSHA). The primary data that is required by SAMSHA includes the Treatment Episode Data Set (TEDS) and the National Outcome Measures (NOMs). Currently, The State utilizes the Magellan Health system as a central data system for storing the Nebraska TEDS/NOMs data as well as for utilization management services. This is a web-based application that allows providers to manually enter the TEDS/NOMs data directly into the Magellan system.

The State contracts with six regional behavioral health authorities which oversee providers in the region. Each provider has their own process for data collection and reporting. Data is entered into a provider's local system every time a client is admitted for service and upon discharge. The providers are also responsible for re-keying the TEDS/NOMs data into the Magellan system.

Of the six regions, only one has an automated solution for entering data directly into the Magellan system. Providers in the other five regions use a manual data entry process to load the data in the Magellan system. The State is currently reviewing options on reducing the re-keying issues and improving quality of data collection and reporting.

The Division of Behavioral Health Services requested technical assistance to develop strategies to address the data re-keying issue. Although the final report is yet to be released, the eBHIN system concept was included as part of the technical assistance research, and preliminary information indicates that the eBHIN architecture for data capture and upload to the Magellan system is consistent with the recommended strategies in the technical assistance report to the Division.

IHS and Tribal Activity

The Indian Health Service (IHS), an agency within the Department of Health and Human Services, is responsible for providing federal health services to American Indians and Alaska Natives. IHS services are administered through a system of 12 Area offices and 161 IHS and tribally managed service units. The tribes in Nebraska fall under the Aberdeen Area Indian Health Service Area Office, which cover the states of Nebraska, Iowa, South Dakota, and North Dakota. However, the majority of the tribes in Nebraska are operated under the authority of the Indian Self-Determination and Education Assistance Act (Public Law 93-638, as amended), Titles I and V. This provides the tribes with the authority to manage their own health care and information technology decisions for their tribe.

The IHS IT infrastructure includes staffing, hardware, communications, and security that support every aspect of the IHS mission. The Resource and Patient Management System (RPMS) is the IHS enterprise health information system. The RPMS consists of more than 60 software applications and is used by a variety of healthcare providers at approximately 400 IHS, tribal, and urban locations. Client data is gathered through the RPMS system and

the aggregate data is used to report on clinical performance measures to Congress. The IHS also maintains a national data warehouse (NDW) of patient encounter and administrative data for statistical purposes, performance measurement for accreditation, and public health and epidemiological studies.

Approximately 400 IHS, tribal and urban facilities providing medical services are utilizing the RPMS system for their clinical and reporting needs. However, 58 percent of the federally recognized tribes are self-governed and are not required to utilize RPMS. Thirty-two percent of IHS budget is allocated to tribes that have exercised their self-governance option. In Nebraska, the majority of tribal programs providing behavioral health services have exercised their right for self determination and are utilizing an off-the-shelf product (AccuCare) agreed to by the Aberdeen Area Alcohol and Drug Program Directors. Orion Healthcare Technology, a Nebraska based company, collaborates with the Aberdeen Area IHS and the tribes to provide AccuCare for their behavioral health clinical, reporting and outcome needs. Orion Healthcare Technology has consulted with the State of Nebraska and IHS to develop a data exchange for the tribal programs.

Emergency Medical Services for Children Program (HRSA)

Early EMS systems were designed to provide rapid intervention for sudden cardiac arrest in adults and rapid transport for motor vehicle crash victims. There was limited recognition that children required specialized care. Pediatricians and pediatric surgeons, identifying poor outcomes among children receiving emergency medical care, became advocates on behalf of their patients. They sought to obtain for children the same positive results that EMS had achieved for adults.

The Nebraska Department of Health and Human Services, Division of Public Health, Credentialing Division is a regulatory agency that establishes initial training and renewal requirements leading towards certification of emergency medical care providers and services. The Emergency Medical Services (EMS) Program is responsible for continuing education and for the implementation of a statewide system of emergency care inclusive of pediatrics.

Over the past ten years, Nebraska's EMS Program has significantly improved its response to critically ill and injured children. This is due in large part to the leadership of the Nebraska Emergency Medical Services for Children (EMSC) and Trauma Program. However, much work remains to be done to encourage program growth and bring various statewide, regional, and national initiatives to fruition.

The Nebraska EMS Program contracts with Image Trend for the electronic data collection system, E-NARSIS. To date, 259 Emergency Medical Services have been trained on ENARSIS and 171 are actively using the system to electronically record patient care documentation. The ENARSIS data system is immediate, efficient, and accurate. This patient care documentation is web-based, and therefore is report generated, for immediate access to physicians, medical directors, and hospitals. Nebraska EMSC Program staff will use these results to expand and improve on existing program activities and to help meet EMSC program objectives Performance Measures. In addition, the Nebraska EMSC Program is very committed to participating in the National Repository and continues to promote Pediatric Education for the Pre-hospital Provider, Pediatric Advanced Life Support, and Emergency Nurses Pediatric Course national curriculum.

Participation with Federal Care Delivery Organizations

Nebraska is interested in participating in health information exchange with federal care delivery organizations. Discussions enabling health information exchange to coordinate care and improve health outcomes of veterans have been held with local leadership of the Veterans Administration. Follow up discussions will likely be held in the future. Future discussions will also be held with local tribal leadership, Indian Health Services, local military health care leadership, and the Department of Defense.

Coordination of Other ARRA Programs

Regional Extension Centers

Wide River Technology Extension Center serves as Nebraska's Regional Extension Center, providing education, outreach, and technical assistance to help Nebraska providers select, successfully implement, and meaningfully use certified EHR technology to improve the quality and value of health care. Pursuant to requirements of the HITECH Act, priority is given to providers that are primary-care providers (physicians and/or other health care professionals with prescriptive privileges, such as physician assistants and nurse practitioners) in any of the following settings:

- Individual and small group practices (ten or fewer professionals with prescriptive privileges) primarily focused on primary care;
- Public and Critical Access Hospitals;
- Community Health Centers and Rural Health Clinics; and
- Other settings that predominantly serve uninsured, underinsured, and medically underserved populations

Wide River Technology Extension Center, NeHII, eBHIN, Nebraska's Medicaid program, and the eHealth Council work collaboratively on projects as needed. Representatives of these entities meet twice a month to give updates and explore collaborative opportunities. Wide River Technology Extension Center is represented on the eHealth Council and participates in the eHealth Council's E-Prescribing Work Group.

Work Force Development Initiatives

Nebraska is investing in the human capital required to implement and support health information exchange. As of March 30, 2012, over 200 students had completed Metropolitan Community College's Health IT training program. Metropolitan Community College has set a goal of having 300 students complete the program by March 31, 2013. Metropolitan Community College, NeHII, eBHIN, Wide River Technology Extension Center work cooperatively as needed.

Broadband Programs

The State of Nebraska is participating in the NTIA's Broadband Mapping program. Through a broadband planning component of the program, regional technology committees are identifying areas in need of greater broadband capabilities and to develop technology plans. The regional technology committees can provide a vehicle for any underserved providers to address broadband issues. The Nebraska Information Technology Commission is involved in this effort and is facilitating coordination.

According to the NTIA's broadband mapping site (www.broadbandmap.gov), 99% of Nebraskans have access to broadband. Nebraska ranks 24th in access to broadband.

Analyze » Rank

Rank » State » Within Nation
Metric » Speed Download Greater Than 3 Mbps Upload Greater Than 0.768 Mbps

Below are rankings for the requested broadband characteristics. The broadband data below is as of 6/30/11 and represents data collected by SBDD grantees.

Source • [Print this page](#) • [Export Data](#) • [API Call](#)

Share »
Share this page with my community

   Short URL »

 +1 Recommend this on Google
 Tweet

[Change Geography](#) | [Rank My Area](#) | [Manage Metrics](#)

Rank	Name	Speed Combo	Add Metric						
		DL>3 UL>0.7 ▼							
1	District Of Columbia	100%	±0.0	%	%	%	%	%	%
2	New Jersey	100%	±0.0	%	%	%	%	%	%
3	Connecticut	100%	±0.0	%	%	%	%	%	%
4	Rhode Island	100%	±0.0	%	%	%	%	%	%
5	Florida	99.9%	±0.0	%	%	%	%	%	%
6	Delaware	99.8%	±0.0	%	%	%	%	%	%
7	Massachusetts	99.8%	±0.0	%	%	%	%	%	%
8	New York	99.8%	±0.0	%	%	%	%	%	%
9	Georgia	99.7%	±0.0	%	%	%	%	%	%
10	Pennsylvania	99.6%	±0.0	%	%	%	%	%	%
11	Nevada	99.6%	±0.0	%	%	%	%	%	%
12	Kansas	99.5%	±0.0	%	%	%	%	%	%
13	Utah	99.5%	±0.0	%	%	%	%	%	%
14	Illinois	99.4%	±0.0	%	%	%	%	%	%
15	Colorado	99.4%	±0.0	%	%	%	%	%	%
16	Texas	99.4%	±0.0	%	%	%	%	%	%
17	Indiana	99.3%	±0.0	%	%	%	%	%	%
18	Ohio	99.2%	±0.0	%	%	%	%	%	%
19	Maryland	99.2%	±0.0	%	%	%	%	%	%
20	Tennessee	99.2%	±0.0	%	%	%	%	%	%
21	South Carolina	99.1%	±0.0	%	%	%	%	%	%
22	Michigan	99.1%	±0.0	%	%	%	%	%	%
23	Minnesota	99.0%	±0.0	%	%	%	%	%	%
24	Nebraska	99.0%	±0.0	%	%	%	%	%	%
25	Washington	99.0%	±0.0	%	%	%	%	%	%
26	Oregon	99.0%	±0.0	%	%	%	%	%	%
27	Louisiana	98.8%	±0.0	%	%	%	%	%	%
28	Maine	98.8%	±0.0	%	%	%	%	%	%
29	North Carolina	98.7%	±0.0	%	%	%	%	%	%
30	Hawaii	98.5%	±0.0	%	%	%	%	%	%
31	Iowa	98.5%	±0.0	%	%	%	%	%	%
32	North Dakota	98.4%	±0.0	%	%	%	%	%	%
33	Arkansas	98.3%	±0.0	%	%	%	%	%	%
34	Arizona	98.2%	±0.0	%	%	%	%	%	%
35	New Hampshire	98.2%	±0.0	%	%	%	%	%	%
36	Mississippi	97.9%	±0.0	%	%	%	%	%	%
37	Alabama	97.7%	±0.0	%	%	%	%	%	%

<http://www.broadbandmap.gov/rank/all/state/percent-population/within-nation/speed-download-greater-than-3mbps-upload-greater-than-0.768mbps/ascending/> (7/10/2012 1:13:10 PM)

Analyze > Rank within Nation - National Broadband Map

38	California	97.6%	±0.0	%	%	%	%	%	%
39	Idaho	97.6%	±0.0	%	%	%	%	%	%
40	New Mexico	97.6%	±0.0	%	%	%	%	%	%
41	Wisconsin	97.3%	±0.0	%	%	%	%	%	%
42	Wyoming	97.2%	±0.0	%	%	%	%	%	%
43	Missouri	96.9%	±0.0	%	%	%	%	%	%
44	Vermont	95.3%	±0.0	%	%	%	%	%	%
45	South Dakota	94.8%	±0.0	%	%	%	%	%	%
46	Puerto Rico	94.4%	±0.0	%	%	%	%	%	%
47	Commonwealth Of The Northern Mariana Islands	94.4%	±0.0	%	%	%	%	%	%
48	Oklahoma	94.1%	±0.0	%	%	%	%	%	%
49	Kentucky	94.1%	±0.0	%	%	%	%	%	%
50	Montana	92.6%	±0.0	%	%	%	%	%	%
51	Virginia	90.4%	±0.0	%	%	%	%	%	%
52	Alaska	80.4%	±0.0	%	%	%	%	%	%
53	West Virginia	74.4%	±0.1	%	%	%	%	%	%
54	Guam	45.7%	±0.0	%	%	%	%	%	%
55	American Samoa	21.4%	±0.1	%	%	%	%	%	%
56	United States Virgin Islands	0.0%	±0.0	%	%	%	%	%	%

Popular Reports »

View and download popular reports.

- Broadband Availability in Urban vs. Rural Areas
- Number of Providers by Speed Tier
- Access to Broadband Technology by Speed

Map »

Map my community

Summarize »

View statistics about my community

Broadband Classroom »

Learn more about broadband

Engage »

Build a better map for my community

Blog »

New Data for the National Broadband Map
posted by Anne Neville on March 2, 2012

Updates »

Sign up and receive updates about the National Broadband Map
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results: 352 seconds

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[Rank](#) • [Summarize](#) • [Provider](#) • [Engage](#) | [Blog](#) • [Twitter](#) • [Download](#) • [States](#)



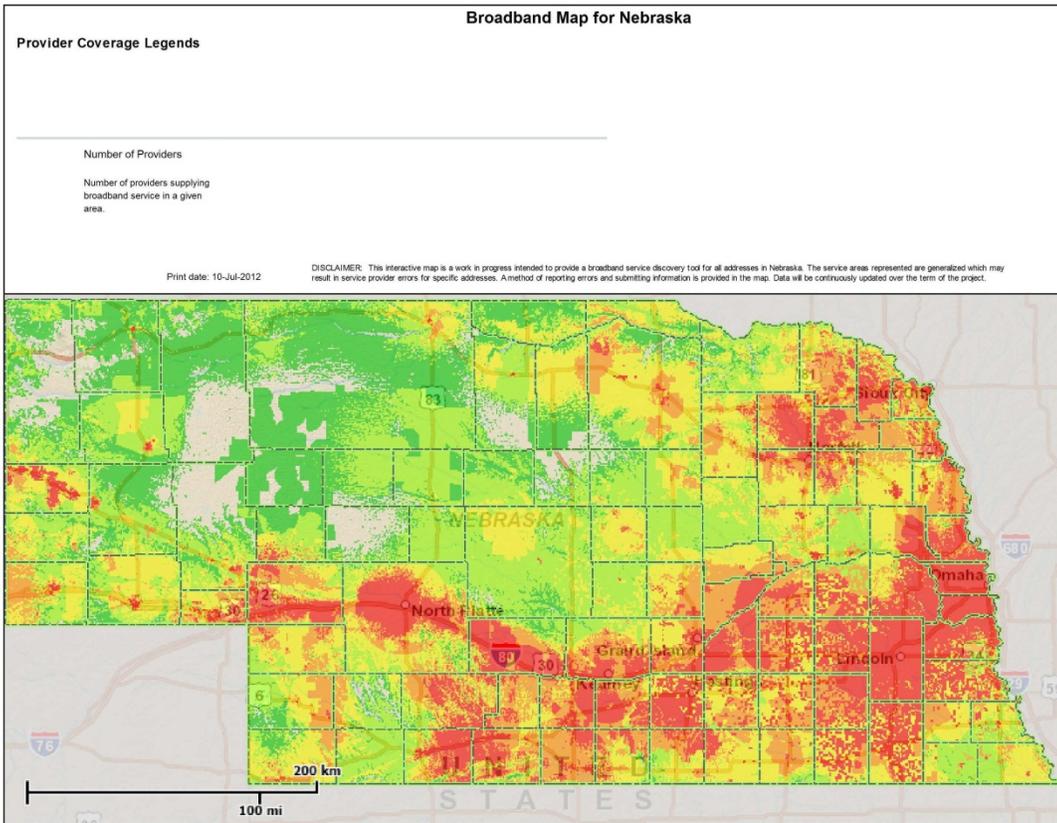
The **National Broadband Map** is a tool to search, analyze and map broadband availability across the United States. Created and maintained by the **NTIA**, in collaboration with the **FCC**, and in partnership with 50 states, five territories and the District of Columbia.



[NTIA](#) • [FCC](#) • [Website Policies and Notices](#) • [Privacy Policy](#) • [Recovery.gov](#) • [FOIA](#)

<http://www.broadbandmap.gov/rank/all/state/percent-population/within-nation/speed-download-greater-than-3mbps-upload-greater-than-0.768mbps/ascending/> (7/10/2012 1:13:10 PM)

The following maps from broadbandmap.nebraska.gov show broadband coverage (excluding broadband access via satellite) in Nebraska. The areas shown without broadband access are very sparsely populated.





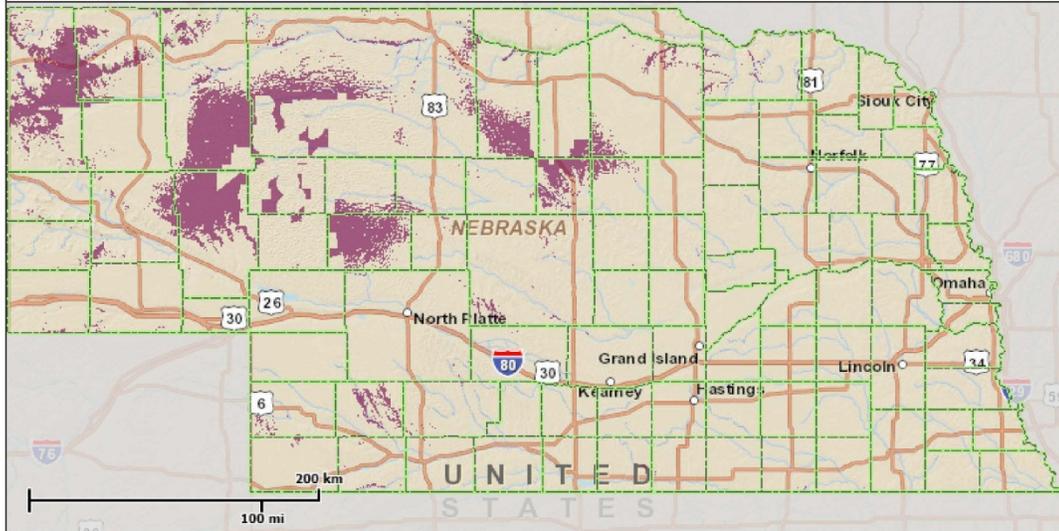
Provider Coverage Legends

-  Unserved
-  Areas with no Broadband services available.



Print date: 10-Jul-2012

DISCLAIMER: This interactive map is a work in progress intended to provide a broadband service discovery tool for all addresses in Nebraska. The service areas represented are generalized which may result in service provider errors for specific addresses. A method of reporting errors and submitting information is provided in the map. Data will be continuously updated over the term of the project.



Appendix A

eHealth Council and Work Group Members

eHealth Council Members

The State of Nebraska/Federal Government

- **Senator Annette Dubas**, Nebraska Legislature (term ends Dec. 2010, renew every 2 years)
- **Steve Urosevich** (term ends Dec. 2012)
- **Congressman Jeff Fortenberry**, represented by Marie Woodhead (term ends Dec. 2012, renew every 2 years)

Health Care Providers

- **Lianne Stevens**, The Nebraska Medical Center (term ends Dec. 2013)
- **Dr. Delane Wycoff**, Pathology Services, PC (term ends Dec. 2014)
 - **Dr. Harris A. Frankel** (alternate)
- **Joni Cover**, Nebraska Pharmacists Association (term ends Dec. 2012)
- **September Stone**, Nebraska Health Care Association (term ends Dec. 2013)
- **John Roberts**, Nebraska Rural Health Association (term ends Dec. 2014)

eHealth Initiatives

- **Laura Meyers**, Nebraska Statewide Telehealth Network and St. Elizabeth Foundation (term would end Dec. 2012)
- **Ken Lawonn**, NeHII and Alegent Health (term ends Dec. 2013)
- **Harold Krueger**, Western Nebraska Health Information Exchange and Chadron Community Hospital (term ends Dec. 2014)
- **Wende Baker**, Southeast Nebraska Behavioral Health Information Network and Region V Systems (term ends Dec. 2012)

Public Health

- **Sue Medinger**, Department of Health and Human Services, Division of Public Health (term ends Dec. 2013)
- **Sharon Medcalf**, UNMC College of Public Health (term ends Dec. 2014) (pending NITC approval)
 - **Rita Parris**, Public Health Association of Nebraska, alternate
- **Kay Oestmann**, Southeast District Health Department (term ends Dec. 2012)
- **Marsha Morien**, UNMC College of Public Health (term ends Dec. 2013)
- **Joel Dougherty**, OneWorld Community Health Centers (term ends Dec. 2014)

Payers and Employers

- **Susan Courtney**, Blue Cross Blue Shield (term ends Dec. 2012)

-
- **Vivianne Chaumont**, Department of Health And Human Services, Division of Medicaid and Long Term Care (term ends Dec. 2013)

Consumers

- **Nancy Shank**, Public Policy Center (term ends Dec. 2014)
- **Alice Henneman**, University of Nebraska-Lincoln Extension in Lancaster County (term ends Dec. 2012))

Resource Providers, Experts, and Others

- **Kimberly Galt**, Creighton University School of Pharmacy and Health Professions (term ends Dec. 2012).
- **Greg Schieke, Wide River Technology Extension Center** (term ends Dec. 2013)
 - Todd Searls, Wide River Technology Extension Center (alternate)
- **Donna Hammack, St. Elizabeth Medical Center (term ends Dec. 2014)**

E-Prescribing Work Group Members

- Mark Siracuse, E-Prescribing Work Group Chair, Creighton University
- Wende Baker, Electronic Behavioral Health Information Network
- Deb Bass, Bass and Associates
- Kevin Borchert, Nebraska Methodist Health System & Nebraska State Board of Pharmacy
- Anne Byers, Nebraska Information Technology Commission
- Dr. James Campbell, UNMC
- Gary Cochran, UNMC
- Kevin Conway, Nebraska Hospital Association
- Joni Cover, Nebraska Pharmacists Association
- Kimberly Galt, Creighton University
- Robert Grenier, Alegent
- Chris Henkenius, Bass and Associates
- Harold Krueger, Chadron Community Hospital
- Tom Lenz, Creighton University
- Stephanie Maciejewski, Pfizer
- Dale Mahlman, Nebraska Medical Association
- Barb Mart, DHHS Division of Medicaid and Long-Term Care
- Julie McKeay, DHHS Division of Medicaid and Long-Term Care
- Linda Myers Bock, Community Pharmacist
- Marcia Mueeting, Nebraska Pharmacists Association
- Paul Plofchan, Pfizer
- Michael Rueb, DHHS Nebraska State Board of Pharmacy

- September Stone, Nebraska Health Care Association
- Michael White, Creighton University
- Clint Williams, Blue Cross and Blue Shield of Nebraska (also representing NeHII)

Public Health/eHealth Work Group Members

Nebraska Department of Health and Human Services

- Public Health Informatics & Biosecurity--David Lawton
- Administration--Dr. JoAnn Schaefer
- Public Health Data--Dave Palm and Colleen Svoboda (alternate)
- Immunization Registry--Michelle Hood
- Epidemiology--Tom Safranek
- EMS—Doug Fuller
- Licensure—Helen Meeks and Joann Erickson (alternate)
- Vital Stats—Stan Cooper or Mark Miller

Local Health Departments or Districts

- Douglas County Health Department— Anne O’Keefe
- Lincoln-Lancaster County Health Department—Bruce Dart and Kathy Cook (alternate)
- Nebraska SACCO/Two Rivers Public Health Department—Terry Krohn
- Three Rivers Public Health Department--Jeff Kuhr

Health Information Organizations

- NeHII (Nebraska Health Information Initiative)—Kevin Conway
- eBHIN (Electronic Behavioral Health Information Network)--Wende Baker
- WNHIE (Western Nebraska Health Information Exchange)--Kim Engel and Kim Woods (alternate)

UNMC College of Public Health

- Chair: Keith Mueller and Li-Wu Chen (alternate)

Other Key e-Health Public Health Entities with Decision-making Authority

- Public Health Association of Nebraska--Rita Parris

Providers and Provider Associations

- Nebraska Health Information Management Association—Kim Hazelton
- Douglas County Community Mental Health Center—John Sheehan
- UNMC—Dr. James Campbell

NITC Staff

- Anne Byers
-

Appendix B

Reports, Recommendations, and Related Research

<http://www.nitc.nebraska.gov/eHc/plan/reports/>

Adoption

Related Research

- Lander, L., Klepser, D., Cochran, G., Lomelin, D., Morien, M., (April 26, 2012). Barriers to Electronic Prescribing: Nebraska Pharmacists' Perspective. Available from <http://nitc.nebraska.gov/eHC/plan/reports/UNMCRReportPharmacyParticipationApril2012.pdf>
- Lander, L., Klepser, D., Cochran, G., Lomelin, D., Morien, M., (April 13, 2012). Nebraska Hospital and Independent Lab Census. Available from <http://nitc.nebraska.gov/eHC/plan/reports/ebLabCensus2012.pdf>
- Galt, K., Drincic, A., Paschal, K., Kasha, T., Bramble, J., Siracuse, M., Abbot, A., Fuji, K. (March 2008). Status of Health Information Technology In Nebraska: Focus on Electronic Health Records in Physician Offices (March 2008) Retrieved from http://chrp.creighton.edu/share/sharedfiles/UserFiles/file/Status_of_Health_Information_Technology_in_Nebraska_March_2008.pdf
- Galt, K., Fuji, K., Serocca, A., Pham, A., Kasha, T. (December 2008). State of Patient Safety in Nebraska Pharmacy (December 2008) Retrieved from http://chrp.creighton.edu/share/sharedfiles/UserFiles/file/State_of_Patient_Safety_in_Nebraska_Pharmacy_December_2008.pdf
- Shank, N., Willborn, E., PytlikZillig, L., & Noel, H. (2012). Electronic health records: Eliciting behavioral health providers' beliefs. Community Mental Health Journal, 48 (2), 249-254. doi:10.1007/s10597-011-9409-6 Retrieved from <http://ppc.unl.edu/userfiles/file/Documents/staffpubs/Electronic%20Health%20Records%20Shank.pdf>

Work Group Reports and Recommendations

- [E-Prescribing Work Group Report and Recommendations](#) (2009)
- [PHR Work Group Report and Recommendations](#) (2009)
- [Public Health Work Group Report and Recommendations](#) (2009)

Privacy and Security

Related Research

- Baird Holm [Legal Review](#) (2009)
- Abdel-Monem, T. & Herian, M. (Dec. 11, 2008). University of Nebraska Public Policy Center Report: Sharing Health Records Electronically: The Views of Nebraskans. Retrieved from http://ppc.unl.edu/userfiles/file/Documents/projects/eHealth/Sharing_Health_Records_Electronically_Final_Report.pdf
- Creighton Health Services Research Program. (2007). Health/Licensure/Certification and Facilities Oversight Board Managers (2007) Retrieved from http://chrp.creighton.edu/share/sharedfiles/UserFiles/file/HISPC_Report_1.pdf
- Creighton Health Services Research Program. (2007). Survey of Health Professions Organizations Leadership. Retrieved from http://chrp.creighton.edu/share/sharedfiles/UserFiles/file/HISPC_Report_2.pdf
- Creighton Health Services Research Program. (2007). Consumer Views about Privacy and Electronic Health Information Exchange. Retrieved from http://chrp.creighton.edu/share/sharedfiles/UserFiles/file/HISPC_Report_3.pdf

Work Group Reports and Recommendations

- [HISPC Summary Report—Executive Summary Only](#) (2009)
- [HISPC Summary Report](#) (2009)
- [HISPC: Security and Privacy Barriers to Health Information Interoperability](#) (2007)
- [HISPC: Recommendations Summary](#) (2007)

Appendix C

Health Information Exchanges

NeHII

NeHII is the state's largest health information exchange. As the statewide integrator, NeHII will assume the primary responsibility for implementing the State Health Information Exchange Cooperative Agreement program in Nebraska.

Governance. NeHII is a Nebraska corporation organized under the Nebraska Nonprofit Corporation Act. It was formed by a collaboration of not-for-profit Nebraska hospitals, private entities, state associations, healthcare providers, independent labs, imaging centers and pharmacies. Representatives of these entities and the Lt. Governor sit on the Board of Directors of NeHII. Members of the NeHII Board of Directors are listed in the Appendix. In 2007, a Decision Accelerator meeting, with representatives of health organizations from across the state, jump started the endeavor. NeHII expects to received its 501(c)3 tax exempt status in 2009. NeHII's Board of Directors is listed below.

NeHII Elected Directors

- **President:** Harris Frankel, MD, University of Nebraska Medical Center, Omaha, NE
- **Vice President:** Ken Lawonn, Alegent Health System, Omaha, NE
- **Secretary:** George Sullivan, Mary Lanning Memorial Hospital, Hastings, NE
- **Treasurer:** Pat Bourne, Blue Cross and Blue Shield of Nebraska
- Delane Wycoff, MD - Pathology Services PC, North Platte, NE
- Lisa Bewley - Regional West Medical Center, Scottsbluff, NE
- Roger Hertz - Methodist Health System, Omaha, NE
- Bill Dinsmoor - The Nebraska Medical Center, Omaha, NE
- George Carr – BryanLGH Health System, Lincoln, NE
- Gary Perkins – Children's Hospital & Medical Center, Omaha, NE
- Vivianne Chaumont, Director of Medicaid and Long-Term Care, Lincoln, NE

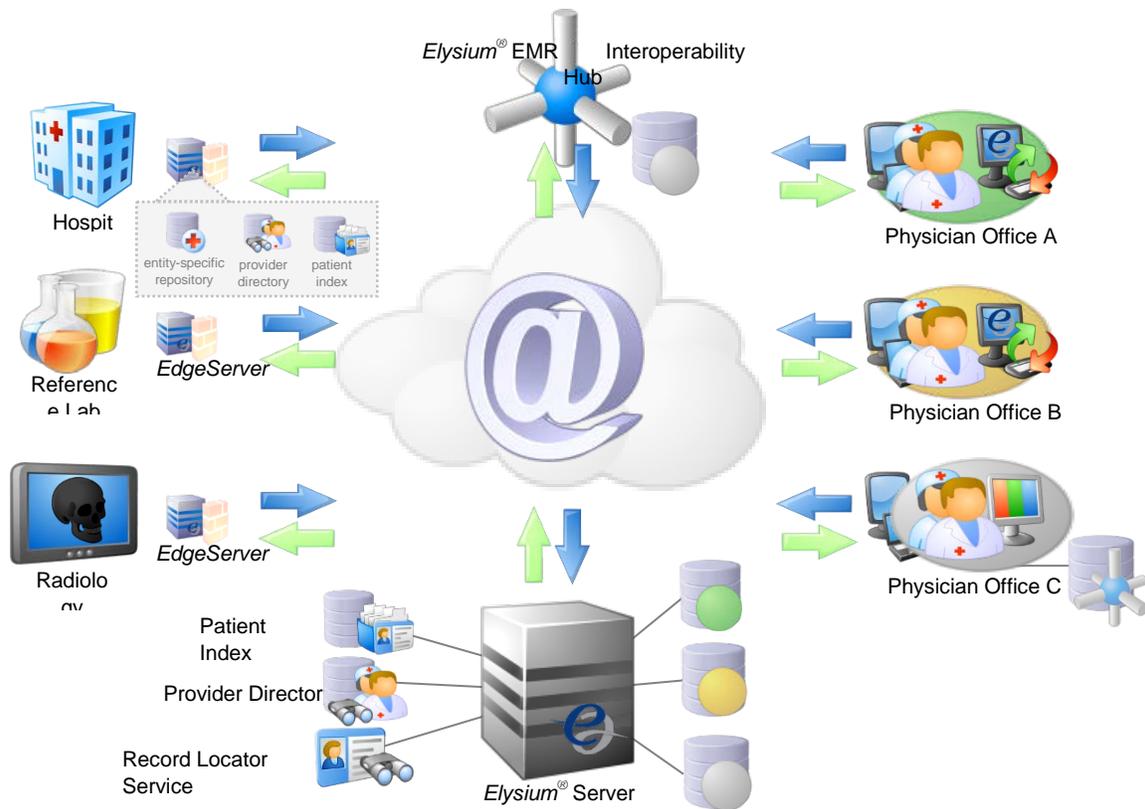
NeHII Appointed Directors

- Lt. Gov. Rick Sheehy
- Kevin Conway - Professional Organizations, Nebraska Hospital Association, Lincoln, NE
- Deb Bass - Executive Director, Bass & Associates Inc., Omaha, NE
- Sandy Johnson, Consumer Representative
- Michael Westcott, MD - Alegent Health System, Omaha, NE
- Joann Schaefer, MD – CMO, State of Nebraska

Business Model. The business model for NeHII is structured to be fully sustainable through the issue of operating licenses. NeHII purchases licenses from the software vendor and sells them to participants based on organizational structure. The margin from the licenses is used for operating expenses.

Technical Infrastructure and Business Operations. NeHII is a hybrid federated model in which providers send data to unique Edge Servers in standard transaction formats through VPN. Providers access the interoperability hub through the internet to access information using a master patient index and record locator service.

The servers are all located in a secure environment with complete backup and disaster recovery capability. Additionally, the information on each server is kept separately by each data provider. The diagram below illustrates NeHII's architecture.



Business and technical operations will support meaningful use and will be delivered efficiently through collaboration, cooperation, and consolidation. The statewide health information exchange through NeHII will provide the following services:

- Eligibility information from BlueCross BlueShield of Nebraska, Medicaid, and possibly other payers.
- Outcome and quality reporting
- Public health reporting and population health outcomes
- Electronic prescribing and refill requests
- Electronic clinical laboratory ordering and results delivery
- Prescription fill status and/or medication fill history
- Clinical summary exchange for care coordination and patient engagement

As initial capability has been established, additional functionality to address meaningful use requirements is being assessed and prioritized. Funding from operational overhead and grant opportunities will be leveraged to meet the meaningful use requirements as the majority of technical issues have been successfully completed by NeHII.

NeHII has been involved in national discussions on the definition of meaningful use and has a representative on the HIT policy workgroups to develop meaningful use criteria.

Legal/Policy. NeHII has developed extensive privacy and security policies with broad stakeholder representation using nationally recognized legal health IT experts to support the statewide health information exchange. Other states have expressed interest in purchasing the policies for use within their state health information exchange projects.

eBHIN

The Electronic Behavioral Health Information Network (eBHIN) connects publicly funded behavioral health providers in Nebraska.

Governance. eBHIN is a tax exempt 501(c)3 private, non-profit corporation that serves as a Regional Health Information Organization (RHIO) for providers of Behavioral Health services in southeast Nebraska. The governing Board of Directors is made up of stakeholder representatives who have been working together since 2003 to promote health information exchange as a means to improve patient care, integrate with primary care and improve efficiency of behavioral health care service delivery. eBHIN serves as the primary governing body providing oversight for the financing, development, and implementation of a Health Information Exchange (HIE) among member behavioral health providers and organizations in Nebraska. Currently services are being deployed in three regions in Nebraska, representing more than 75% of the publicly funded organizations in the state. The additional three regions will be added as resources and readiness allow.

eBHIN Board Members

eBHIN Board Members are listed below:

- Ken Foster, BryanLGH Medical Center & Heartland Health Alliance
- C.J. Johnson, Region V Systems
- Dean Settle, Community Mental Health Center of Lancaster County
- Shannon Engler, BryanLGH Medical Center Mental Health Services
- Jon Day, Blue Valley Behavioral Health
- Julie Fisher-Erickson, Lutheran Family Services
- Joleen TenHulzen Huneke, Southeast Rural Physicians Alliance
- Morris, Motes, National Alliance for the Mentally Ill
- Laura Richards, Region I Behavioral Health
- Dr. Bob Rauner, Wide River Regional Extension Center

Business Model. Fund development for system sustainability includes the establishment of provider hosting fees as well as marketing of reporting and data management services. eBHIN will continue to pursue additional funding sources including local, state, and federal support with the need for this revenue for operating support decreasing over time until day-to-day operations are sustained through marketed services. The recruitment of additional providers will also be a focus. To address disparities in provider capacity, eBHIN is subsidizing the maintenance fees initially with incremental increases in member contributions of maintenance and membership fees over a five- year period to help providers transition resources.

Technical Infrastructure and Business Operations. The eBHIN HIE will include software with true enterprise architecture for the six behavioral health regions of the state and the behavioral healthcare providers contracting with the regions. Accessible via web portal, this enterprise architecture is a software solution that operates on a single database or Central Data Repository (CDR) that supports the unique requirements of multiple organizations, multiple provider organizations, and multiple locations. The CDR for this HIE system includes a centralized data base with the additional capability of maintaining wait list/referral management coordination

functionality, easy access to longitudinal consumer data, e-prescribing, medication reconciliation and lab results.

eBHIN is using a hybrid federated model, also known as a blended model. The Central Data Repository will contain data which is common and relevant to all behavioral healthcare providers in the RHIO. The Document Locator Service is used to share other data and documents among providers for those consumers who have “opted-in.” It is an index of the location of documentation held by participating organizations.

Legal/Policy. A special consideration for the eBHIN project is that in addition to the requirements specified through the Health Insurance Privacy and Portability Act, The 42 Code of Federal Regulations (CFR) Subpart 2 defines additional privacy constraints governing substance abuse treatment records. The code specifically outlines the requirement for Patient Authorization to be obtained in order to share treatment information between providers. For this reason, the “opt-in” system of record sharing authorization will be employed. All access to consumer records is driven by consumer consent, but also by the “need to know” role based access to records will limit the viewing of consumer information specific to the task performed by the person viewing it. In addition to system design, these issues will be addressed in both the Participation Agreements and Network Policies and Procedures.

Appendix D

Document History

October 2010—The Strategic Plan was completed and submitted to the Office of the National Coordinator with the State's application for the State HIE Cooperative Agreement program.

April 2010—Updates were made to the status of HIEs and NeHII's role as statewide integrator and lead HIE was clarified. The revised strategic plan and operational plan were submitted to the Office of the National Coordinator.

July 2010—Information on structured laboratory results and summary care record exchange were added to the environmental scan in response to comments from the Office of the National Coordinator

Sept. 2010—Additional information on structured laboratory results and e-prescribing were added to the environmental scan in response to comments from the Office of the National Coordinator. The Electronic Behavioral Health Information Network's name was updated.

Oct. 2010—The Environmental Scan section was revised.

Feb. 2011—The list of eHealth Council members in Appendix A was updated. The list of NeHII data sources on page 18 was updated.

August 2012—Substantial updates were made to the Strategic Plan.