Nebraska
Operational eHealth Plan

May 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.

May 2012
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Privacy and Security Framework

NeHII Privacy and Security Framework

http://www.NeHII.org
http://www.connectnebraska.net/

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Required to Address			
Individual Access *Where HIE entities store, assemble or aggregate IIHI, such as longitudinal patient records with data from multiple providers, HIE entities should make concrete plans to give patients electronic access to their compiled IIHI and develop clearly defined processes (1) for individuals to request corrections to their IIHI and (2) to resolve disputes about information accuracy and document when requests are denied.*	Patients do not currently have access to compiled electronic health information from NeHII. NeHII is working with its vendors to provide CCD information to PHR portals and wellness sites via a variety of mechanisms, including integration via IHE protocols and use of Direct. A pilot project with SimplyWell is being developed. Discussions are underway with Microsoft Healthvault. NeHII's privacy policies do not specifically address individual access to compiled electronic health information.	Stakeholders and the public are made aware via consumer education brochures, the NeHII website (www.nehii.org), the NeHII support desk, and a consumer advisory campaign (2nd qtr 2012).	**Gap Area:** Patients do not currently have access to compiled electronic health information from NeHII. NeHII's privacy policies do not specifically address individual access to compiled electronic health information. **Process :** The gap analysis will be presented to the NeHII Privacy/Security Committee. The Committee meets every month and is made up of representatives from the NeHII participants from across the State, as well as the Privacy Officer from St. Elizabeth. The committee is chaired by the NeHII Privacy Officer, Sara Juster. Once the committee reviews the gap analysis report, they will determine where changes will be made and if they feel they should make changes to the existing policies. Should they decide to make changes to existing policies, the group develops the revisions and gains approval by majority vote of the committee. The

			P/S committee puts forward a motion from the committee to the BOD to approve the suggested changes in policy, the motion for approval goes to the NeHII BOD for a second to the motion and then a vote occurs for final approval. These policies apply only to NeHII participants that have signed the participation agreement and participating in HIE through NeHII. **Timeline**: NeHII is waiting for information from Axolotl before finishing the requirements documentation for the pilot project with SimplyWell. When the requirements documentation has been received from Axolotl (OptumInsight), NeHII will confirm definite milestones and production dates.
Correction *Individuals should be provided with a timely means to dispute the accuracy or integrity of their IIHI, and to have erroneous information corrected or to have a dispute documented if their requests are denied.*	NeHII's Privacy Policies include a section on amendment of data. Patients work with the data provider to correct data. The data provider informs NeHII of non-demographic incorrect information that needs to be removed. Only the participant responsible for the record may accept an amendment. If a participating provider notices an error in the record of another provider, the first provider should contact the responsible participant.	Consumer education brochures, the NeHII website and the NeHII support desk are the three main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies which include a section on correction of data.	
Openness and Transparency *Individuals should be able to determine what information exists about them, how it is collected, used or disclosed and whether they can exercise choice over any of these elements. Where HIE entities*	NeHII's Privacy Policies include openness and transparency as a guiding principle. NeHII's consumer brochure clearly explains what information is included in NeHII, what information is not shared, and the consumer's choice to opt-in to NeHII. Consistent with the scope of individual rights in HIPAA,	Consumer education brochures, the NeHII website and the NeHII support desk are the three main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies which include openness and transparency as a guiding principle.	

store, assemble or aggregate IIHI, individuals should have the ability to request and review documentation to determine who has accessed their information or to whom it has been disclosed. All policies and procedures consistent with the recipient's Privacy and Security Framework should be communicated to individuals in a manner that is appropriate and understandable.	individual have the right to request and review documentation to determine who has accessed their information or to whom it has been disclosed.		
Individual Choice *Where HIE entities store, assemble or aggregate IIHI beyond what is required for an initial directed transaction, HIE entities should ensure individuals have meaningful choice regarding whether their IIHI may be exchanged through the HIE entity. This type of exchange will likely occur in a query/response model or where information is aggregated for analytics or reporting purposes.* *Individuals should have choice about which providers can access their information. In addition, recipients are encouraged to develop policies and technical approaches that offer individuals more granular choice than having all or none of their information exchanged.*	Patients are given the opportunity to make a choice on participation when presenting at a facility and all consents are global. There are no encounter level or physician specific consents. There is no break the glass functionality. Patients can also contact the NeHII support desk or complete a form on the NeHII website to make a choice on participation. NeHII's Privacy Policies include a section on individual control of information available through the system.	Consumer education brochures, the NeHII website and the NeHII support desk are the three main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies which include a section on individual control of information available through the system.	**Description of Gap Area:** Patients are given the opportunity to make a choice on participation when presenting at a facility and all consents are global. There are no encounter level or physician specific consents. Currently neither NeHII's vendor Axolotl or most other HIE vendors have the technological capability to segregate health information. **Process:** The gap analysis will be presented to the NeHII Privacy/Security Committee. The Committee meets every month and is made up of representatives from the NeHII participants from across the State, as well as the Privacy Officer from St. Elizabeth. The committee is chaired by the NeHII Privacy Officer, Sara Juster. Once the committee reviews the gap analysis report, they will determine where changes will be made and if they feel they should make changes to the existing policies. Should they decide to make changes to existing policies, the group develops the revisions and gains approval by majority vote of the committee. The P/S committee puts forward a motion from the committee to the BOD to

			approve the suggested changes in policy, the motion for approval goes to the NeHII BOD for a second to the motion and then a vote occurs for final approval. These policies apply only to NeHII participants that have signed the participation agreement and participating in HIE through NeHII. **Timeline:** The timeline is dependent upon vendor development of the technological capabilities necessary to segregate data.
Collection, Use and Disclosure Limitation *Providers requesting or accessing IIHI by electronic means for "treatment" should have or be in the process of establishing a treatment relationship with the patient who is the subject of the requested information. The means of verifying whether such a relationship exists could include attestation or artifacts such as patient registration, prescriptions, consults, and referrals.* *In principle, a health care provider should only access the minimum amount of information needed for treatment of the patient.*	NeHII's Privacy Policies clearly state that participants may request and use protected health information only for treatment and payment purposes and only to the extent necessary.	Consumer education brochures, the NeHII website and the NeHII support desk are the three main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies which include sections on access to and disclosure of information and minimum necessary.	
Data Quality and Integrity *Where HIE entities store, assemble or aggregate IIHI, they should implement strategies and approaches to ensure the data exchanged are complete and accurate and that patients are correctly matched with their data. Processes should also be developed and documented to detect, prevent, and mitigate any unauthorized changes to, or*	NeHII, acting as the infrastructure, works with its data providers to ensure data is complete and accurate. NeHII does not change or manipulate any data on its system. NeHII's privacy policies include a section on amendment of data. NeHII uses OptumInsight's (fka Axolotl) proprietary matching algorithms based on First Name, Last Name, DOB, Gender, Social Security Number (if available), and Medical Record Number	Consumer education brochures, the NeHII website and the NeHII support desk are the three main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies which include a section on amendment of data.	

deletions of, individually identifiable health information. *HIE entities that store, assemble or aggregate IIHI should also develop processes to communicate corrections in a timely manner to others with whom this information has been shared.* *Recipients should describe their patient matching approach including the accuracy threshold achieved.*	(if available). Based on all available information, our matching accuracy is 100%. .		
Safeguards HIE entities should conduct a thorough assessment of risks and vulnerabilities. Please refer to the State HIE Security Checklist at: http://hitrc-collaborative.org/confluence/display/hiecopprivacyandsecurity/Security. *This checklist may serve as a resource to assist HIE entities in evaluating their compliance with the HIPAA Security Rule and the Breach Notification Rule. Use of this checklist does not guarantee compliance; however, because safeguards must be evaluated within the specific context in which information is assembled, held and transmitted. It may be useful to retain a completed version of the checklist for record keeping.* *Encryption. HIE entities should provide for the exchange of already encrypted IIHI, encrypt IIHI before exchanging it, and/or establish and make available encrypted channels through which electronic health information exchange could take place.* *Authentication and Authorization. An HIE entity should only facilitate electronic health information*	NeHII has conducted a thorough assessment of risks and vulnerabilities. NeHII maintains complete audit logs that track access and use of the system. The audit logs provide the ability for NeHII privacy and security officers to investigate patterns of usage and confirm adherence to HIPAA requirements. NeHII's security policies address risk analysis and management and information systems activity review (audit). NeHII's privacy policies also address audit logs and authentication. Access to the application is governed by IBM's proven infrastructure for secure messaging. This authentication process screens and verifies both users and programs wishing to gain access. The process provides accountability and is the foundation for all security functions or requests. Browser authentication is performed by Netscape Communications SSL v3 (Secure Socket Layer) protocol which provides communications privacy over the internet to prevent eavesdropping, tampering and message forgery between client/server applications. The application uses the strongest encryption allowed by both domestic and international	Consumer education brochures, the NeHII website and the NeHII support desk are the three main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies and Security Policies which address safeguards.	**Gap Area**: NeHII uses assurance level 2. Assurance level 3 requires two-factor authentication. At this time, the cost of implementing two-factor authentication is prohibitive. **Process**: The gap analysis will be presented to the NeHII Privacy/Security Committee. The Committee meets every month and is made up of representatives from the NeHII participants from across the State, as well as the Privacy Officer from St. Elizabeth. The committee is chaired by the NeHII Privacy Officer, Sara Juster. Once the committee reviews the gap analysis report, they will determine where changes will be made and if they feel they should make changes to the existing policies. Should they decide to make changes to existing policies, the group develops the revisions and gains approval by majority vote of the committee. The P/S committee puts forward a motion from the committee to the BOD to approve the suggested changes in policy, the motion for approval goes to the NeHII BOD for a second to the motion and then a vote occurs for final approval. These policies apply only to NeHII participants that have

exchange for parties it has authenticated and authorized. Verification of identity, authentication of users, and authorization of individuals could be accomplished directly by the HIE or indirectly by providers or other entities. *HIE entities should establish strong identity proofing and authentication policies for user access to electronic health information systems. Recipients should indicate the assurance level they are using in their privacy and security frameworks, using NIST 800-63 version 1.0.2[3] as a guide and resource. The recommended assurance level is Level 3.*	regulations. Application access is controlled using user names and passwords encrypted with SSL and a third party digital certificate provided by VeriSign. Password strength and change rules can be enforced based on particular customer requirements. Security within the application is further controlled using roles. Numerous roles can be defined – each with a unique level of security and access permissions as defined and regulated by HIPAA guidelines. The application provides for a matrix of access configurations which include user roles, feature regulation (e.g. VHR, eRx), establishment of patient-provider relationships which determine access to restricted PHI (Protected Health Information), and workgroup-level security configurations. Development of an acceptable security model ensures security of PHI while enabling necessary and appropriate access (availability) to data. All network traffic is encrypted using either SSL or VPN (Virtual Private Networks) and VPN gateways implemented with IPSec (Internet Protocol security) standards. The IPSec utilizes the most up-to-date and proven authentication procedures and encryption algorithms. As well, all network communications going into and out of the data center pass through redundant firewalls, limiting traffic to only specific IP addresses and ports. A usage analyzer tool is available to allow NeHII administrators the ability to generate HIPAA and security audits within the HIE application. These audits		signed the participation agreement and participating in HIE through NeHII. **Timeline:** The timeline is dependent upon vendor costs and demand from users. At this time, NeHII plans to address the added costs of two factor authentication when it is mandated. NeHII has negotiated in the vendor agreement that costs incurred by federal mandates will be covered by the vendor solution.

	will provide the ability for NeHII privacy and security officers to investigate patterns of usage and confirm adherence to HIPAA requirements. NeHII utilizes assurance level 2.		
Accountability *HIE entities should ensure appropriate monitoring mechanisms are in place to report and mitigate non-adherence to policies and breaches. Reasonable mitigation strategies should be established and implemented as appropriate, including notice to individuals of privacy violations and security breaches.*	NeHII and all of its stakeholders are considered covered entities, or business associates of covered entities under HIPAA, and as such all data providers and users sign BAA agreements. A usage analyzer tool is available to allow NeHII administrators the ability to generate HIPAA and security audits within the HIE application. These audits will provide the ability for NeHII privacy and security officers to investigate patterns of usage and confirm adherence to HIPAA requirements. NeHII's privacy policies requires NeHII and participants to implement a process to mitigate the harmful effects of a disclosure of protected health information in violation of applicable laws. NeHII's privacy policies also address the investigation of complaints about the use or disclosure of protected health information and describe NeHII's incident response system.	Consumer education brochures, the NeHII website and the NeHII support desk are the three main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies which address accountability.	

eBHIN Privacy and Security Framework

www.ebhin.org

Domain	Description of approach and where domain is addressed in policies and practices	Description of how stakeholders and the public are made aware of the approach, policies, and practices	Description of gap area and process and timeline for addressing *(if needed, use additional documents to describe and insert reference here)*
Required to Address			
Individual Access *Where HIE entities store, assemble or aggregate IIHI, such as longitudinal patient records with data from multiple providers, HIE entities should make concrete plans to give patients electronic access to their compiled IIHI and develop clearly defined processes (1) for individuals to request corrections to their IIHI and (2) to resolve disputes about information accuracy and document when requests are denied.*	Individual access to records is governed by our participating organizations, as they are responsible for the record content on behalf of the patient. In Nebraska, providers have the right to limit access to records on the basis of potential harm to the patient or others. The requirement to allow access is part of our Policies and procedures. These are incorporated into our Network Participation Agreement as a condition of participation. The patient must provide a secure means of electronic acceptance of the electronic document. No secure messaging capability is currently available to patients.	Each provider has a Notice of Privacy Practices available. The ability to request a copy of the record is also described in the explanation page of our Consent for release of Information.	**Gap area:** Additional information needs to be added to the FAQ to describe how electronic records may be available securely through participating organizations. **Process:** Draft language for the FAQ's and web site will be circulated through provider organizations and consumer groups to finalize language. The EBHIN Compliance Committee will review and advance to the Board of Directors for revision approval. **Timeline:** Completed by Dec. 31, 2012.
Correction *Individuals should be provided with a timely means to dispute the accuracy or integrity of their IIHI, and to have erroneous information corrected or to have a dispute documented if their requests are denied.*	Amendment of record is a HIPAA requirement and is addressed via the Policies and Procedures as above.	The Policies and Procedures are posted on the eBHIN web site accessible to providers.	**Gap Area**: A section about amending records needs to be added to the FAQ's and web site consumer page. **Process:** Draft language for the FAQ's and web site will be circulated through provider organizations and consumer groups to finalize language. The EBHIN Compliance Committee will review and advance to the Board of Directors for revision approval. **Timeline:** Completed by Dec. 31, 2012.
Openness and Transparency	The content of their shared record is described in the Consent for Release of Information. It is also discussed on	Information is made available through the "Informed Consent" process with patients in each provider setting.	**Gap:** A section about the ability to request and Accounting of Disclosures needs to be added to our FAQ and Web Site Consumer

Individuals should be able to determine what information exists about them, how it is collected, used or disclosed and whether they can exercise choice over any of these elements. Where HIE entities store, assemble or aggregate IIHI, individuals should have the ability to request and review documentation to determine who has accessed their information or to whom it has been disclosed. All policies and procedures consistent with the recipient's Privacy and Security Framework should be communicated to individuals in a manner that is appropriate and understandable.	the "Information for Consumers" page on our website and is included in our FAQ's. Our Policies and Procedures include requirements for Accounting of Disclosures. Consumers advised eBHIN about content of the Consent and Educational materials through meetings of the Mental Health Association and National Alliance for the Mentally Ill.	Information is also available via our web site and Patient Educational Materials. In the development phase, we provided monthly presentations to consumer groups.	page **Process:** Draft language for the FAQ's and web site will be circulated through provider organizations and consumer groups to finalize language. The EBHIN Compliance Committee will review and advance to the Board of Directors for revision approval. **Timeline:** Completed by Dec. 31, 2012.
Individual Choice *Where HIE entities store, assemble or aggregate IIHI beyond what is required for an initial directed transaction, HIE entities should ensure individuals have meaningful choice regarding whether their IIHI may be exchanged through the HIE entity. This type of exchange will likely occur in a query/response model or where information is aggregated for analytics or reporting purposes.* *Individuals should have choice about which providers can access their information. In addition, recipients are encouraged to develop policies and technical*	The eBHIN architecture and operating procedures support an Opt In model. The individual must choose to participate in the HIE – if they do not, their record is opted out by default. The conditions of meaningful choice are included in the "Informed Consent" process in each provider setting. The materials are required to be used as part of our network Participation Agreement. eBHIN and NeHII have developed an innovative approach to managing consent which will allow behavioral health information to be exchanged only with providers specified by the patient.	This information is available in all of our promotional material, consents and FAQ's.	

approaches that offer individuals more granular choice than having all or none of their information exchanged.			
Collection, Use and Disclosure Limitation *Providers requesting or accessing IIHI by electronic means for "treatment" should have or be in the process of establishing a treatment relationship with the patient who is the subject of the requested information. The means of verifying whether such a relationship exists could include attestation or artifacts such as patient registration, prescriptions, consults, and referrals.* *In principle, a health care provider should only access the minimum amount of information needed for treatment of the patient.*	This information is included in our Policies and Procedures, Consents, and FAQ's. The Prohibition on re-disclosure is in our record data entry workflow, message prior to accessing the system and part of each document created from a record. Our Network Participation Agreement requires that eBHIN be able to Audit Electronic and Physical Records at any time. A process for on-site review to assure conforming consents are available at each provider has been established.	This is included in our patient education material, website and promotional materials	
Data Quality and Integrity *Where HIE entities store, assemble or aggregate IIHI, they should implement strategies and approaches to ensure the data exchanged are complete and accurate and that patients are correctly matched with their data. Processes should also be developed and documented to detect, prevent, and mitigate any unauthorized changes to, or deletions of, individually identifiable health information.* *HIE entities that store,*	Policies and Procedures include requirement of end user agreements where all end users agree to enter information accurately. Error checking embedded in data entry templates assures a high degree of data accuracy prior to transmission to Magellan, as well as to the HIE. The Amendment of Record process requires that the original record remain intact, but a correction made via our application functionality.	The stakeholders must accept the responsibility of accurate data entry to gain access to the system. Error checking helps end users to perform as accurately as possible. End users may generate reports to track fidelity of records.	

assemble or aggregate IIHI should also develop processes to communicate corrections in a timely manner to others with whom this information has been shared. Recipients should describe their patient matching approach including the accuracy threshold achieved.			
Safeguards HIE entities should conduct a thorough assessment of risks and vulnerabilities. Please refer to the State HIE Security Checklist at: http://hitrc-collaborative.org/confluence/display/hiecopprivacyandsecurity/Security. *This checklist may serve as a resource to assist HIE entities in evaluating their compliance with the HIPAA Security Rule and the Breach Notification Rule. Use of this checklist does not guarantee compliance; however, because safeguards must be evaluated within the specific context in which information is assembled, held and transmitted. It may be useful to retain a completed version of the checklist for record keeping.* *Encryption. HIE entities should provide for the exchange of already encrypted IIHI, encrypt IIHI before exchanging it, and/or establish and make available encrypted channels through which electronic health information exchange could take place.*	Many safeguards in our system are incorporated in our Operating Procedures and Policies. End users are requires to sign an agreement stating they will only access records for patients they are treating and that they risk loss of use and potential personnel action on the basis on inappropriate use. A risk assessment was performed on our Data Center to assure the information is safeguarded. Encryption: Existing protocols is to provide Virtual Private Network connections. Authentication: IKE VPN, pre-shared key for authentication Assurance Level: 3	The Operations Manual and Policies and Procedures address safeguards required of eBHIN and Network Participants.	**Gap Area:** FAQ's need to add language about the physical safeguards on the system. **Process:** Draft language for the FAQ's will be circulated through provider organizations and consumer groups to finalize language. The EBHIN Compliance Committee will review and advance to the Board of Directors for revision approval. **Timeline:** Completed by Dec. 31, 2012. **Gap Area:** eBHIN uses assurance level 2. Assurance level 3 requires two-factor authentication . At this time, the cost of implementing two-factor authentication is prohibitive. **Process**: The eBHIN Compliance Committee will periodically review the need to utilize the level 3 assurance level, **Timeline:** The timeline is dependent upon vendor costs, demand from users, and any federal mandates.

Authentication and Authorization. An HIE entity should only facilitate electronic health information exchange for parties it has authenticated and authorized. Verification of identity, authentication of users, and authorization of individuals could be accomplished directly by the HIE or indirectly by providers or other entities. *HIE entities should establish strong identity proofing and authentication policies for user access to electronic health information systems. Recipients should indicate the assurance level they are using in their privacy and security frameworks, using NIST 800-63 version 1.0.2[3] as a guide and resource. The recommended assurance level is Level 3.*			
Accountability *HIE entities should ensure appropriate monitoring mechanisms are in place to report and mitigate non-adherence to policies and breaches. Reasonable mitigation strategies should be established and implemented as appropriate, including notice to individuals of privacy violations and security breaches.*	eBHIN maintains the right to audit participant organization records to assure compliance. Via our Network Agreement, eBHIN may also provide audit logs to demonstrate appropriate access to information. An Incident Response Plan has been developed to address investigation and immediate action of suspected breach or privacy violations.	The Operations Manual and Policies and Procedures outline the auditing requirements	FAQ's need to add language to describe accountability systems to the public, including incidence response planning and availability of the eBHIN Privacy Officer. **Process:** Draft language for the FAQ's will be circulated through provider organizations and consumer groups to finalize language. The EBHIN Compliance Committee will review and advance to the Board of Directors for revision approval. **Timeline:** Completed by Dec. 31, 2012.

Sustainability Plan

Conditions for Sustainability of Health Information Exchange

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. Delivering HIE capabilities affordably to a population broadly disbursed 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.

Nebraska's approach to the development of sustainable health information exchange focuses on the following five strategies:

- Support private sector solutions;
- Support health information exchange by removing statutory and regulatory barriers;
- Support health information exchange by creating additional value;
- Support health information exchange through participation by Medicaid and other State programs; and
- Leverage additional funding sources.

Support Private Sector Solutions

The State of Nebraska and Nebraska stakeholders support a private sector solution to health information exchange because 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. NeHII, Nebraska's lead health information exchange and statewide integrator, was formed by health care providers, including several of the state's largest health care systems and the state's largest payer, BlueCross BlueShield of Nebraska. eBHIN was formed by behavioral health providers and Region V System in Southeast Nebraska.

Support Health Information Exchange by Removing Statutory and Regulatory Barriers

In 2010 and 2011, four laws facilitating the exchange of health information were passed.

- LB 591 (2011) includes provisions which will facilitate the electronic exchange of syndromic surveillance and immunization information. LB 591 passed on Final Reading and was presented to the Governor on May 12, 2011.
- LB 179 (2011) eliminates 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 197 was approved by Governor Heineman on March 10, 2011.

- LB 237 (2011) authorizes the Department of Health and Human Services to collaborate with NeHII to establish a prescription drug monitoring program. LB 237 was approved by Governor Heineman on April 14, 2011.
- On April 13, 2010, Governor Heineman signed LB849 which contains a provision eliminating the 180-day limit on authorizations for the release of health information. The 180-day limit is more restrictive than current federal law and creates a barrier to electronic health information exchange. LB849 will be beneficial to the state's health information exchanges, including the Nebraska Health Information Initiative (NeHII).

Support Health Information Exchange by Creating Additional Value

Prescription Drug Monitoring Program

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 and political climate. Nebraska's drug overdose age-related death rate per 100,000 people in 2008 was 5.5, the lowest rate in the country. Nebraska also ranks low in the kilograms of prescription pain killers sold, with 4.2 kilograms per 10,000 in 2010. Only Illinois and the District of Columbia had lower rates.[1] 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.

Immunization Registry

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.

Phases II and III which will allow users of NeHII's VHR to query the immunization registry and to enter immunization information are scheduled to go live in 2012.

Disease Surveillance and Syndromic Surveillance

NeHII and the DHHS Division of Public Health are working on public health reporting to the State's disease surveillance and syndromic surveillance systems. Axolotl is still working on the gateways necessary to implement public health reporting. When this functionality is available, an implementation plan and timeline will be developed.

[1] See http://www.cdc.gov/HomeandRecreationalSafety/rxbrief/states.html.

Support Health Information Exchange through participation by Medicaid and other State programs

The State of Nebraska, NeHII, and eBHIN are discussing how the State of Nebraska will support health information exchange. Nebraska's State Medicaid HIT Plan (SMHP) was submitted to CMS in 2011 and approved in January 2012, with launch of the Medicaid EHR Incentive Program set for May 7, 2012. Medicaid is anticipating some sort of participation in the statewide health information exchange, but continued conversation with NeHII has not yet produced concrete agreement on activities going forward.

Medicaid, the REC, and the HIE all attended the 2012 CMS HITECH conference with the goal of obtaining strategies and suggestions for coordinated efforts. Medicaid is focusing on a few concrete initiatives directly related to assisting providers in achieving Meaningful Use as anticipated collaborative efforts with NeHII.

Lt. Governor Sheehy, the Medicaid director and the director of the Division of Public Health are on the NeHII Board of Directors.

Nebraska's State Medicaid HIT Plan (SMHP) was submitted to CMS in 2011 and approved in January 2012, with launch of the Medicaid EHR Incentive Program set for May 7, 2012. Medicaid is anticipating some sort of participation in the statewide health information exchange, but continued conversation with NeHII has not yet produced concrete agreement on activities going forward.

Medicaid, the REC, and the HIE all attended the 2012 CMS HITECH conference with the goal of obtaining strategies and suggestions for coordinated efforts. Medicaid is focusing on a few concrete initiatives directly related to assisting providers in achieving Meaningful Use as anticipated collaborative efforts with NeHII.

eBHIN has met with the director of the DHHS Division of Behavioral Health Services and Lt. Governor Sheehy to discuss State support of eBHIN.

Leverage Additional Funding Sources

Both NeHII and eBHIN are trying to leverage additional funding sources. NeHII has discussed funding opportunities with both the CDC and with MITRE. eBHIN's partners have successfully applied for HRSA funding to support planning efforts and EHR deployment.

Sustainability of Services Offered

NeHII

NeHII is building a sustainable business model based upon service fees. NeHII completed its first business plan in 2005. The plan was created via joint participation from a number of stakeholders who are still active in NeHII today as participants. While many details of the business plan have changed over the years, sustainability is still a daily focus of activities.

Services Offered

NeHII offers query-model health information exchange services to hospitals, physicians, physician extenders, staff, home health providers, nursing homes, pharmacists and other health care providers.

Virtual Health Record (VHR)

- Provides a comprehensive electronic health record (EHR) accessible with a single click by an authorized healthcare provider.
- Retrieves and displays data from across the entire Health Information Exchange (HIE). All available patient data is pulled together virtually to create a complete electronic health record.

- Includes 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.
- Cost - $10 per month per physician *

Electronic Medical Record (EMR)

- Provides the ability to quickly and effectively collaborate with any of the patient's caregivers, sharing data and processing referrals electronically.
- Connects physicians to the NeHII Health Information Exchange, giving the ability to receive ARRA stimulus monies and improve care for patients.
- Cost - $20 per month per physician *

e-Prescribing

- Provides significant efficiencies to practices and meets Meaningful Use requirements for ARRA stimulus compensation.
- Ensures the most accurate medication, problem, and patient information from NeHII for safe 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.
- Cost - $10 per month per physician *

Interoperability HUB/Physician Connection

- Builds a direct network from disparate certified EMRs and legacy systems enabling complete interoperability and full collaboration on patient care.
- Gives physician practices the ability to immediately exchange data such as referrals, and can also provide specific data for query by community-wide physicians; providing the entire community, regional, state or national HIEs with a complete picture of health for a patient.
- Cost - $10 per month per physician

Direct

- Enables a healthcare provider to electronically and securely push specific health information, such as discharge summaries, clinical summaries from a primary care provider or specialist, lab results to ordering providers, or referrals over the internet to another healthcare provider(s) who is a known and trusted recipient.
- Allows for the transmission of health information in a uni-directional flow using a secure, standard, scalable, encrypted format and ensures that the information goes to the correct provider or organization.
- Cost - $15 per month per e-mail address

Fees

In order to accelerate implementation and to prove to demonstrate financial viability, NeHII developed a license-based business model. In this model, NeHII purchases user and participant licenses from Axolotl at a volume discount price, and resells the license to Nebraska participants at retail price. The volume discount, or the margin generated, pays NeHII's operational costs. The costs for gateway licenses for hospitals are listed below:

Hospital Size (# of beds)	Cost per month	Annual fee
1-25 beds	$1,500	$18,000

26-50 beds	$2,000	$24,000
51-150 beds	$2,500	$30,000
151 – 300 beds	$4,000	$48,000
301 – 500 beds	$8,000	$96,000
>500 beds	$12,000	$144,000

One challenge for NeHII has been the development of a sustainable pricing model for Critical Access Hospitals. NeHII worked with Axolotl to develop a model to allow Critical Access Hospitals to share edge servers and reduce costs. In the fall of 2011, 15 Critical Access Hospitals signed participation agreements with NeHII. An additional Critical Access hospital signed a participation agreement in the first quarter of 2012.

The costs for non-hospital participants, which would include laboratories and imaging facilities, is determined by the type of server needed. The costs for non-hospital participants are listed below:

Server Type for Non-Hospital Participants	Cost per month	Annual fee
Uni-directional Servers	$2,000	$24,000
Bi-directional Servers	$3,000	$36,000

NeHII also provides user licenses to physicians across the state to access clinical information at the point of patient care. Physician license costs are as follows:

License Type	Physician Costs Per Month
Physician Connection	$10.00
VHR License	$10.00
eRx Only	$10.00
EMRLite	$20.00

EMRLite w/ eRx	$31.66
Direct Secure Messaging	$15.00

In addition, participating Health Plans with access to the system will be required to pay license fees of $25,000 per year, plus $1.50 per member per year.

As NeHII develops additional revenue streams, licensing fees may be reduced. NeHII is committed to finding new and innovative ways to shift the revenue model from a license-based method to a more sustainable method where the use of the HIE funds the costs of operation.

Adoption

Participating Hospitals

Currently 19 hospitals are participating in NeHI:

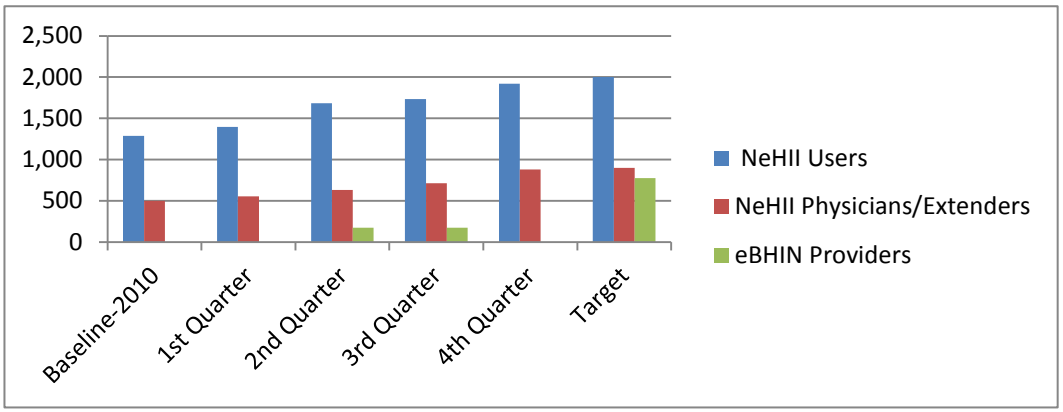
- Bellevue Medical Center - Bellevue, NE
- Bergan Mercy Hospital - Omaha, NE
- Children's Hospital and Medical Center - Omaha, NE
- Creighton University and Medical Center, Omaha, NE
- Great Plains Regional Medical Center – North Platte, NE
- Lakeside Hospital - Omaha, NE
- Immanuel Hospital - Omaha,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

20 hospitals, including 16 Critical Access Hospitals, Boys Town National Research Hospital, Columbus Community Hospital, BryanLGH West and BryanLGH East have signed participation agreements and are expected to go live in 2012 and early 2013. When these hospitals have gone live, approximately two-thirds of the state's hospital beds will be covered by NeHII.

NeHII Users

The number of NeHII users has grown to over 2,000 total users in early 2012, up from 1, 288 users in 2010.

Nebraska HIE Users



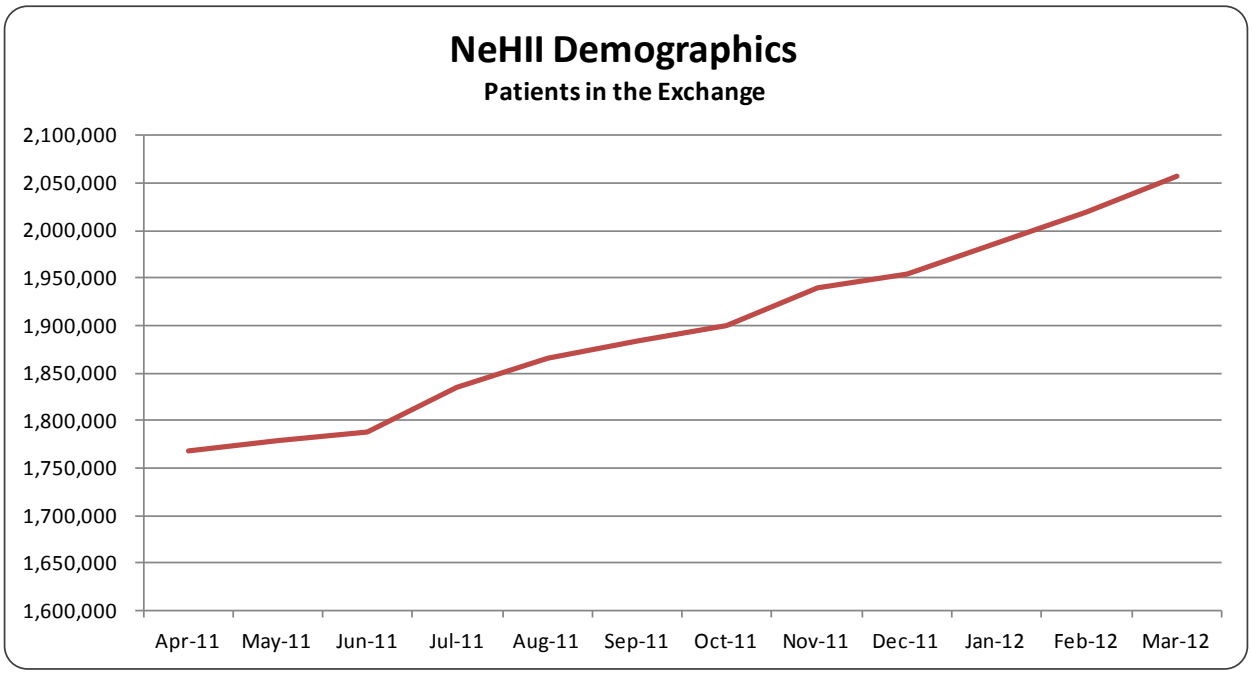
Baseline-2010	1st Quarter 2011	2nd Quarter 2011	3rd Quarter 2011	4th Quarter 2011
NeHII 1,288 total users, including physicians, mid-levels, nurses, pharmacists, and staff 500 Physician and Physician Extenders out of 4,266 in state 12% of physicians and physician extenders	1,396 total users, including physicians, mid-levels, nurses, pharmacists, and staff 554 physician and physician extenders	1,683 total users including physicians, mid-levels, nurses, pharmacists and staff 633 physician and physician extenders	1,773 total users including physicians, mid-levels, nurses, pharmacists and staff 714 physician and physician extenders	1,922 total users including physicians, mid-levels, nurses, long-term care providers, and home health) 880 physicians and physician extenders

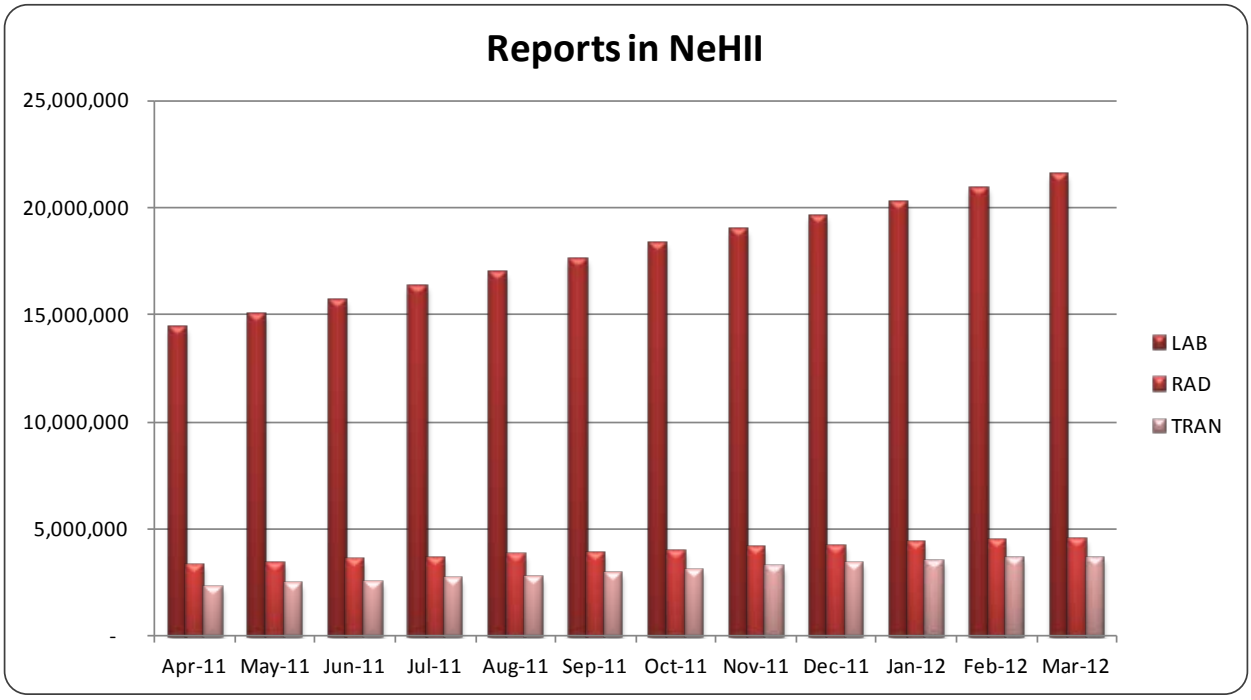
NeHI Users—April 20, 2012

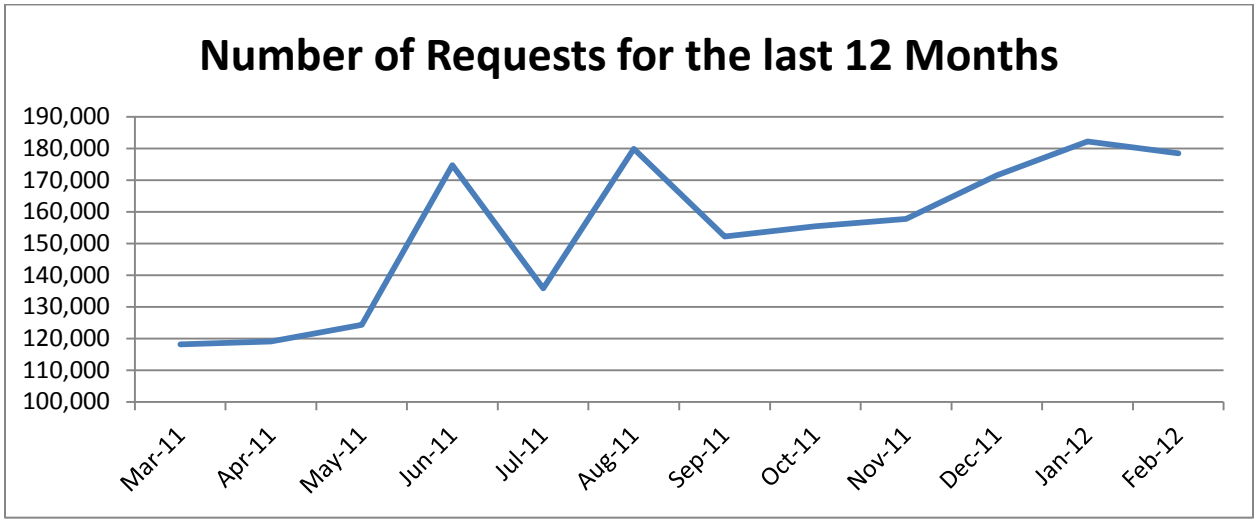
Number of users accessing the VHR	1,698
Number of users accessing the EMR	349

Utilization

Utilization of NeHII has also grown as show in the following graphs.







Demand for Services

Demand for services is expected to increase in 2012 and 2013. 189 physicians have signed participation agreements in the first quarter of 2012. 20 hospitals, including 16 Critical Access Hospitals, Boys Town National Research Hospital, Columbus Community Hospital, BryanLGH West and BryanLGH East have signed participation agreements and are expected to go live in 2012 and early 2013. When these hospitals have gone live, approximately two-thirds of the state's hospital beds will be covered by NeHII.

Value

Hospitals and health care providers find NeHII's services valuable as evidenced by the growth in participating hospitals and health care providers as well as 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

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

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”.

-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

Revenue and Operating Costs

Although NeHII is currently collecting license fees from its participants, there remains a $36,000 monthly operating deficit that must be addressed in order to achieve long term sustainability.

2012 Priorities

A detailed 2012 Sustainability Plan has been developed by the NeHII Finance Committee which identifies six critical factors that must be determined and/or achieved within the next 6 months in order to support the future existence of NeHII. The six priority items include:

1) Payer Participation
2) State of Nebraska's Financial Support Including Medicaid Participation
3) Revised Pricing Structure With the HIE Vendor, Axolotl
4) Expense Reduction for NeHII Operational Support
5) Establish Strategy for Future Financing with Mutual of Omaha Bank
6) Create Consulting Revenues Through HIOSS

Payer Participation. To date BlueCross BlueShield of Nebraska (BCBS) has been the single payer participant in NeHII. Coventry and UnitedHealthcare have been in discussions with NeHII for the past year, but insist on direct access to the HIE rather than the current workaround set forth by the NeHII Privacy/Security Committee for permission to access certain records on a case by case permission granted basis. Through conversations with Axolotl, the NeHII team and participants from BCBS are developing functional requirements for a web services call to access patient health records. Methodist Health System has volunteered to conduct a pilot of the new functionality.

State of Nebraska Support/Medicaid Participation. NeHII has met with Lt. Governor Sheehy as well as representatives of the DHHS Division of Medicaid and Long-term Care and the DHHS Division of

Public Health. Discussions are underway to develop a strategy to leverage 90/10 matching funds from CMS to support the expansion of health information exchange in Nebraska and to develop strategies for participation by Medicaid and public health in health information exchange.

Revised Pricing Structure with HIE Vendor. A vendor negotiations meeting with Axolotl was held December 15 to address paying for only the required NeHII licenses and functionalities rather than the previously negotiated discounted levels of projected license fees, now that we now have a clearer understanding of the levels of licensing required for the operation of NeHII. Pricing schedules were tentatively agreed upon that would reduce the annual cost of fees from Axolotl by $195,697. NeHII's legal counsel, Jim O'Connor with Baird Holm Law, is managing the final execution of the revised agreement after negotiations were completed and the new agreement is expected to be in place within days.

Expense Reduction for NeHII Operational Support. NeHII operational support expense has been under review since April 2011 and resources on the NeHII operational team have been eliminated as job duties have been reassigned. A survey was conducted to gather information on numbers required to manage and operate a HIE from other HIEs across the country. The task of matching the unmatched reports has been offloaded to the individual participating health systems and hospitals. With these efforts, one project manager and one data analyst position have been eliminated, bringing the number of full time resources working to support NeHII to seven. In addition, the program director's number of billable hours to NeHII has been limited to 50 hours/month. Discussions are ongoing regarding the hiring of future full time resources to operate the NeHII exchange to avoid the increased expense by utilizing the more flexible managed services model.

Establish Strategy for Future Financing with Mutual of Omaha Bank. In 2010, Mutual of Omaha Bank made a short term loan to NeHII in the amount of $1 million to cover the monthly deficits that had been accrued to stand up the HIE while the much delayed ONC grant funding process and ensuing release of funds were finalized. Two payments towards the loan have been made and the final payment is due February 2012. The Bank required the major participants at that time, including Alegent Health, Methodist Health System, the Nebraska Medical Center and BCBS to sign a guarantee to repay the loan in the event NeHII defaulted. The Finance Committee is currently considering future funding strategies such as obtaining another longer term loan or simply a credit line to address the estimated $1.5 million shortfall in operational expense until additional participants are implemented by December 2012 and their annual license fees will cover the gap in operational support. Another guarantee may be required by Mutual of Omaha Bank and meetings are being scheduled with each of the original guarantors to ascertain their future support of this funding need with a second guarantee.

Create Consulting Revenues Through HIOSS. Finally, NeHII has established a 'for profit' corporation called HIO Shared Services, HIOSS, to offer consulting services and marked up fixed infrastructure costs previously negotiated with Axolotl to other states and RHIOs interested in implementing HIE. These entities would be able to utilize the intellectual capital and lessons learned by the NeHII team as a risk mitigation ploy. The first state to enter into such an agreement was Wyoming, through a non-profit public/private collaborative organization called WY eHealth Partners and the agreement was finalized December 24, 2011. On-going operational support for the implementation of Direct Services as required by the ONC will be managed by HIOSS and two resources will be starting the week of January 8 generating $16,000/mo in gross profit. Wyoming plans to move to the implementation of a full blown query model of HIE as soon as feasibly possible and is projecting that timeframe to be April 2012. Wyoming eHealth Partners will also utilize a managed services model using HIOSS resources and infrastructure projecting an estimated $6,000/mo gross profit for resources and $14,000/mo gross profit for infrastructure fees.

eBHIN

The funding made available through the Cooperative Agreement is being utilized to build the technical infrastructure to facilitate behavioral healthcare information exchange with NeHII as the integrator for the State of Nebraska.

The behavioral healthcare industry in Nebraska has been characterized by slow growth in technical infrastructure because of the very limited availability of investment capital. Behavioral healthcare services are operated on a shoestring, and many of the providers rely upon fundraising efforts to continue to deliver services, let alone provide for the additional investments required to purchase technology.

The Cooperative Agreement funding facilitated the purchase of hardware and software applications that have allowed eBHIN to host the Centralized Data Repository (CDR) applications. The CDR provides the Virtual Behavioral Healthcare record that, with consent, can be made available to medical providers across the state through NeHII supported a0pplications. It will also be the vehicle by which medical records available from NeHII can be made available to the Behavioral Healthcare clinicians. These investments will make it possible for eBHIN to operate a data center which will reduce maintenance costs to participating organizations. This will allow the providers to focus on obtaining the funding to purchase EMR applications that when integrated with the CDR creates a comprehensive and streamlined data capture process. Once these major preliminary investments are made, existing technology resources can be shifted to support a more efficient, shared platform.

The funding base for continuing operations of the EBHIN HIE is built upon the value of services offered to stakeholders, where benefits are delivered that are equal to or exceed the required investments. In the ideal not for profit business model, no single stakeholder bears a disproportionate share of the cost. It is planned that over time, revenue streams will be diversified to provide a base of support for the eBHIN RHIO with decreasing reliance on grant funding to support operations. The following table outlines some of the anticipated benefits to stakeholders based on the services delivered:

Value to Stakeholders

Stakeholder	Services	Benefits
Behavioral Healthcare Providers	• Single point of data entry for ASO documentation and EMR/EPM applications • ePrescribing • Lab Results • Clinical Decision Support	• Decreased number of adverse drug events • Timely access to appropriate services for patients leading to better outcomes • More efficient service delivery • Decreased duplicate tests
Regional Behavioral Health Authorities	• Aggregate database reporting capability • Wait list and referral management • Payment capabilities	• Increased patient access to services • Fewer wait days resulting in decreased incidence of incarceration • More efficient and effective service delivery recovering more costs

		• More appropriate, timely treatment leading to decreased emergency protective custody actions
Acute Care Services	• Timely access to accurate information	• Decreased average length of stay • Long term decrease in emergency services utilization
State of Nebraska	• Aggregate database reporting capability	• Increased data integrity • Improved performance on National Outcome Measures • Increased probability for the retention of Federal funding

Based on the estimated return, stakeholder investments will be contributed from a variety of sources, including:

- Reporting services of interest to the Regional Behavioral Healthcare Authorities;
- Network Access Fees
- Grants from Federal, State and local funders; and
- Hosting fees consistent with the scope of application deployment.

Sustainability Goals Schedule

This project is being implemented with the sustainability goals as outlined below. The schedule is still in the implementation process and will likely need additional revision as the timing of implementations becomes more firm.

Goals	Activities	Timeframe
Goal 1. Core Implementation	• System Acquisition • System Configuration • Deployment in Region V • Governance Development	Year 1 & 2
Goal 2. Broadening Scope	• Organizational Work and potential deployment in Regions 1, & 6 • Organizational work and potential deployment in Regions 3 & 4 • Organizational work and potential deployment in Region 2 • Governance Implementation	Year 2 -3 Year 3-4 Year 5
Goal 3. Building Sustainability	• Fund Development • Increasing Provider Participants	Year 1 - 5

Services Offered

The EBHIN Sustainability plan is built upon a diversity of services delivered that scale up over the course of five years. Here are the services offered in an Application Service Provider model:

1) HIE shared record look up, wait list and referral management
2) HIE capability with State ASO electronic file transfer
3) EMR/EPM front office applications -- Scheduling, Registration and Clinical records
4) EPM back office applications – Billing
5) Aggregate reporting by Practice, Region and State level
6) DIRECT Secure Messaging for exchange of records with NeHII providers via HISP services

Market Basis

The markets for EBHIN products and services are based on the following business needs of the stakeholders:

1) Operations needs of behavioral health provider organizations,
2) Regional Administrative Organizations need for information to fulfill their responsibilities for management of Provider Networks and State reporting; and
3) The State of Nebraska for their need for information for statewide management of services and Federal reporting requirements for utilization of block grant funds.

Fee Structure

The fee structure for EBHIN was developed with a number of market dynamics as a basis:

1) Limited ongoing operations resources of the Behavioral Health Organizations
2) Utilization of the EBHIN 501(c)3 status to attract one-time investments for start-up costs, with a gradual shift toward operations funding through services versus dependence on operating grants.
3) Diversity achieved through the development of marketable products for a broad base of stakeholders

EBHIN utilized the services of Seim Johnson Accounting firm to develop a revised Sustainability budget that is based on current deployment commitments. Based on these commitments, a draft budget was prepared using the following projected revenues:

1) Grant Awards: Initial funding made available through HITECH, AHRQ and HRSA is being utilized to build Network infrastructure and deploy applications. Awards are made over multiple year periods. The budget is based on known amounts for current awards. There will always be some level of fund development to help keep the Network equipment up to date and to fund innovation/research.

2) Hosting fees: Based on a schedule of 11% of the initial costs of licensing in each setting annually. This fee increases to 13% in 2014. Since licensing is delivered on a per provider basis, larger organizations pay a larger proportionate share of Network Operations. Scope of licensing can be limited in order to decrease both the initial investment and long term operating costs for smaller organizations. The smaller organizations that cannot afford a full EMR can choose to participate in just the HIE, but, still have a shared record and exchange capabilities.

3) Network Access Fees: Paid by the Regions not initially part of the EBHIN scope as a way to reimburse the initial investment made by Region V to start the Network. This will help contribute toward current operations and keep maintenance costs to Provider Organizations low. The Fees are based on total licensing. This provides fee equity because the licensing is based on number of providers in a given Region.

4) Reporting Fees: Paid by the Regional Governing Organizations to fund development and ongoing management of aggregated regional reports. Estimated market value for these services when outsourced was used as the basis for the development of these fees.

5) State MIS Contract: The State has an existing contract for data management services. Through the scope of applications available, EBHIN could provide these data management services for the state and achieve operating sustainability accordingly. The cost is based on the gap funding needed for operations and the build the funds needed for equipment replacement and growth. If this contract were not awarded, organizational fees would need to be increased.

Current Adoption and Utilization

Strategies for adoption are currently in development across all of the Regions of the State. The current adoption schedule and utilization scope are described in the following table:

Service Area	Application Type	Scope of Utilization	Deployment Schedule
Region 5	HIE	11 Organizations 150 Providers	Underway – Complete by June, 2012
	EMR/EPM	5 Organizations 70 Providers	Begins June 2012 – Complete by May 2015
	DIRECT Secure Messaging	1 organization 1 Provider	Pilot Complete by August, 2012
Region 1	EPM/EMR	6 organizations 29 Providers	Underway – Complete by March 2013
	HIE	8 Organizations 31 providers	Begins July 2012 – Complete by November 2013
Region 6	HIE	15 Organizations 315 Providers	Begins June 2012-complete by May 2013
Regions 2, 3 & 4	HIE	31 Organizations 100 Providers (Estimated)	HRSA Planning Grant to determine scheduling

1) Ratio of end user to provider is 5 to 1. The 625 providers licensed on the system represent 3,125 end users utilizing the applications.
2) Organizations include Behavioral Health specific practices as well as hospital facilities that have specific behavioral health service units and contract with the Regions to deliver acute care services.

Demand for Services

The current EBHIN sustainability model is based on delivering a very specific set of applications for publically funded Behavioral Health organizations. As the Behavioral Health CCD is defined, EBHIN will continue to evolve the database to continue to deliver the industry standard to the existing network. A standardized CCD and payment systems will make it more reasonable to offer services to Behavioral Health providers in private practice to expand the scale of operations. Although at this time, we are not able to predict when these market changes will take place, and have not included them in our current model, we believe this is a next development stage that would increase demand for EBHIN services.

eBHIN Projected Budget 2010-2015

Income	2010-2011 Actual	2011-2012 Projected	2012-2013 Projected	2013-2014 Projected	2014-2015 Projected	Total
Hosting/Maintenance Fees	0	31,832	157,428	280,343	339,000	808,603
Access Fees	0	0	39,917	86,500	86,500	212,917
Licensing – One Time	0	73,417	532,586	162,620	184,020	952,643
Reporting & Coordination Services	0	0	105,000	165,000	195,000	465,000
Contract Fees	213,179	171,032	629,087	320,685	256,550	1,590,533
State MIS Contract	0	0	0	175,000	250,000	425,000
Grants	1,147,307	1,249,483	561,643	270,560	41,670	3,270,663
Contributions	128,840	0	0	0	0	128,840
Other/Investments	9,341	5,000	10,000	15,000	15,000	54,341
Total Income	1,498,667	1,530,764	2,035,661	1,475,708	1,367,740	7,908,540
Expense Category						
Personnel	271,607	483,938	510,102	525,635	538,590	2,329,872
Travel/Meetings	5,740	15,547	15,889	16,245	16,615	70,036
Hardware/Software	549,770	141,786	598,784	202,390	204,020	1,696,750
Maintenance Fees	0	23,216	98,037	154,034	179,770	455,057
Consultant Contracts	288,727	297,824	110,496	126,064	95,675	918,786
Implementation Fees	0	191,032	605,337	605,337	256,550	1,658,256
Indirect	66,149	44,665	45,983	47,356	48,780	252,933
Total Expense	1,181,993	1,198,008	1,984,628	1,677,061	1,340,000	7,381,690
Net	316,674	332,756	51,033	(201,353)	27,740	526,850

Budget Assumptions

1) On-going fund development for grants and contributions in 2012-2015

2) Grant funding is replaced by fees and contracts over time.

3) The Net Gain will be utilized as a reserve against equipment replacement, off-site disaster recovery operations and against unforeseen changes in the marketplace that could impact receipt of maintenance and/or hosting fees.

Issues and Risks

EBHIN faces numerous issues and risks as it embarks upon the broadening of the scope of this project as described in the following areas:

1) The Stimulus Funding opportunity has created a flood of new business in the technology marketplace. Demands placed on the industry have created delays in the product development and deployment. We will need to deliver additional roll-out of applications at an aggressive pace in order to be able to meet our revenue projections.
2) Support from the Regions has been promising with their agreements toward cooperation. We now have some level of commitment from all six regions of the State. Unfortunately, the capacities and reserves of the individual providers varies tremendously. Some of the smaller or start-up participants may struggle to be able to commit to contributing all of the funding required.
3) Increasing the scale of the project brings additional risks considering the importance of access to information in delivering services. Interruptions in service delivery, security breaches and damage to the hardware/software all become potential losses to the organization.

Proposed Resolution and Mitigation Methods

EBHIN is proposing a number of resolution and mitigation methods to offset the risks associated. These include:

1) EBHIN is now looking to extend the contract with NextGen to secure costs and project management availability. Since development has been finalized, we will be able to proceed with a more routine deployment process which will help to economize with NextGen resources and deploy rapidly.
2) The shared platform approach allows EBHIN to leverage the costs of hosting to providers, as well as use the large number of potential users to decrease the cost of entry into the system for small providers.
3) With each change in scope proposed, EBHIN adds insurance coverage to help offset the additional risks of the expanded scope of the project.
4) Plans to implement a disaster recovery center offsite are underway.

Project Management Plan

Issues and Risks

In preparing this plan, the eHealth Council identified a number of issues and risks as well as resolution and mitigation methods. Issues and risks identified include:

- Uncertainty over Meaningful Use, certification, and ONC requirements;
- Participation of physicians;
- Participation of hospitals;
- Participation of other providers;
- Consumer trust and acceptance;
- Role of Medicaid; and
- Security and privacy breaches.

Uncertainty over Meaningful Use, Certification, and ONC Requirements

Description: As Nebraska develops this updated version of its eHealth operational plan, considerable uncertainty exists regarding Meaningful Use, certification, and ONC requirements. This makes planning more challenging and will require flexibility.

Probability: High

Potential Severity: Medium to High

Potential Impact: May hinder planning efforts and delay expansion of the health information exchange

Proposed Resolution and Mitigation Methods: All parties involved will need to be flexible in order to move forward in this quickly changing environment.

Participation of Physicians

Description: The success of Nebraska's statewide health information exchange requires widespread participation by physicians.

Potential Severity: Low to Medium

Probability: Low to Medium

Potential Impact: May delay expansion of the health information exchange and may affect the clinical value of the HIE

Proposed Resolution and Mitigation Methods: Physician interest in participating in NeHII has grown, due in part to interest in receiving incentives from Medicaid and Medicare. As of April 2012, NeHII now has over 2,000 users up from 1,288 on Dec. 31, 2010. NeHII offers a web-based EMR which can be incorporated into a physician practice with relative ease. Physicians who already have or intend to purchase electronic medical record systems can also utilize NeHII. Pricing for physicians is reasonable—less than a monthly cable bill.

eBHIN is offering an electronic medical record application specifically tailored for a behavioral health workflow. This could be utilized by psychiatrists, APRNs, and other clinicians involved in behavioral health services delivery.

Additionally, Wide River Technology Extension Center is providing assistance in adopting electronic medical records and utilizing health information exchange. Wide River Technology Extension Center (TEC), has surpassed the goal of working with 1,000 Nebraska primary care providers to implement and meaningfully use electronic health records (EHRs). As of April 2012, over 670 physicians working with Wide River TEC are live on a certified EHR and more than 145 have already met the requirements for stage one meaningful use within the Medicare EHR Incentive Program

Participation of Hospitals

Description: The success of Nebraska's statewide health information exchange requires widespread participation by hospitals. Small critical access hospitals may lack the resources to implement electronic medical record systems. Many hospitals also have legacy systems which will require the development of interfaces. Additionally critical access hospitals may lack the financial resources to pay the annual license fee.

Potential Severity: Medium

Probability: Medium

Potential Impact: May delay expansion of the health information exchange and may affect the clinical value of the HIE

Proposed Resolution and Mitigation Methods: Many of the state's largest hospitals are already participating in NeHII. As other medium and large hospitals connect to NeHII, it is anticipated that the state will reach a critical mass of participating hospitals—especially in terms of the percentage of hospital beds served by NeHII. As of April 2012, 18 hospitals in Nebraska and Iowa are NeHII participants. An additional 19 hospitals have signed participation agreements and are expected to go live in 2012 and early 2013. When these hospitals go live, approximately two-thirds of the state's hospital beds will be covered by NeHII.

Critical access hospitals will likely face the greatest challenges. Several resources are available to assist critical access hospitals. Hospitals may receive incentive payments from both Medicaid and Medicare which will help offset the costs of implementing electronic medical records and participating in health information exchange. NeHII worked with Axolotl to develop a model to allow Critical Access Hospitals to share edge servers and reduce costs. In the fall of 2011, 15 Critical Access Hospitals signed participation agreements with NeHII. An additional Critical Access hospital signed a participation agreement in the first quarter of 2012.

Wide River Technology Extension Center can also provide assistance to primary care physicians working in critical access hospitals. Wide River TEC offers technical assistance, guidance and information on best practices to support and accelerate healthcare providers' efforts to become meaningful users of Electronic Health Records (EHRs), as well as the ability to exchange health information with other providers and agencies.

Participation of Other Providers

Description: While Nebraska is initially focusing on participation of hospitals and physicians, successful implementation of statewide health information exchange will require the participation of other providers.

Potential Severity: Low to Medium

Probability: Medium

Potential Impact: May delay expansion of the health information exchange and may affect the clinical value of the HIE

Proposed Resolution and Mitigation Methods:

Due to limited resources most of NeHII's focus continues to be on physicians and hospitals. However, pharmacists and home health care providers have begun using NeHII. NeHII is continuing to explore opportunities to expand services to other providers.

eBHIN will play an important role in connecting behavioral health providers in Nebraska. The eBHIN HIE will go live in Southeast Nebraska (Region 5) and in the Panhandle (Region 1) in the spring/summer of 2012. Regions 2, 3, and 4 received a HRSA planning grant in the spring of 2012 to plan future integration with eBHIN. Region 6 and eBHIN are also working together to identify the financial resources necessary for expansion to Region 6.

Consumer Trust and Acceptance

Description: Consumer acceptance of health information exchange is critical. Although consumers in Nebraska do have some concerns about privacy and security of health information, consumers see the value of health information exchange and are supportive of health information exchange. Fewer than 3% of consumers have opted out of NeHII.

Potential Severity: Low

Probability: Low

Potential Impact: May delay expansion of the health information exchange and may affect the clinical value of the HIE

Resolution and Mitigation Strategies: Consumer education efforts can help consumers better understand the benefits of health information exchange, how health information exchanges protect health information, and health information privacy rights. NeHII has partnered with participating hospitals on public relations campaigns which have been effective in minimizing the number of consumers choosing to opt out of participation in NeHII. NeHII is also working on new consumer education materials which will be available in 2012. eBHIN has involved consumers involved in development of consent, web page, and FAQs.

Role of Medicaid

Description: The DHHS Division of Medicaid and Long-Term Care has participated in the state's eHealth planning process and the Medicaid director is on the State eHealth Council and the NeHII Board of Directors. Nebraska's State Medicaid HIT Plan (SMHP) was submitted to CMS in 2011 and approved in January 2012, with launch of the Medicaid EHR Incentive Program set for May 7, 2012. Medicaid is anticipating some sort of participation in the statewide health information exchange, but continued conversation with NeHII has not yet produced concrete agreement on activities going forward.

Potential Severity: Low to Medium

Probability: Low to Medium

Potential Impact: The late implementation of EHR Incentive Program and the resource needs associated with getting that program up and running, may delay Medicaid's participation in health information exchange and may affect the value of the HIE.

Resolution and Mitigation Strategies: Medicaid, the REC, and the HIE all attended the 2012 CMS HITECH conference with the goal of obtaining strategies and suggestions for coordinated efforts. Medicaid is focusing on a few concrete initiatives directly related to assisting providers in achieving Meaningful Use as anticipated collaborative efforts with NeHII.

Privacy and Security Breaches

Description: The protection of health information is critical to the development of health information exchange in Nebraska. A security breach or a violation of privacy policies could have a negative impact on participation in health information exchange.

Potential Severity: High

Probability: Low

Potential Impact: May undermine consumer and provider trust in health information exchange

Resolution and Mitigation Strategies: Health information exchanges in Nebraska have carefully developed privacy and security policies which are compliant with HIPAA, the HITECH Act, and other applicable federal and state laws and regulations. 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. NeHII uses an opt-out approach. In order to foster collaboration and innovation, NeHII is offering its privacy and security policies, as well as its managed services business model, in an open source model to other non-profit HIEs. NeHII has contractually obligated its vendor, Axolotl, to perform annual security assessments, including intrusion detection and data center audits, and to supply those results to NeHII on an annual basis. In addition, all NeHII employees and contractors submit to annual training on HIPAA and data security processes.

eBHIN has also developed privacy and security policies. eBHIN uses an opt-in approach. This policy is based on Title 42 Part 2 of the Code of Federal Regulations which stipulates the requirement that an authorization for release of information be obtained for substance abuse treatment records. NeHII and eBHIN have developed an innovative approach to managing consent which will allow for the exchange of behavioral health information with patient consent. The eBHIN Data Center underwent a Risk Assessment prior going live in April of 2011. There were no high vulnerabilities discovered. The three

medium vulnerabilities were immediately addressed. The remaining group of 18 low vulnerabilities are being managed through a Policies and Procedures development process. Although it is impossible to eliminate all risk, the process used assures that all significant exposures have been mitigated.

Dependence on a single organization to provide statewide health information exchange

Description: The State of Nebraska is relying on the expertise of NeHII to implement this grant. While some stakeholders may prefer being able to choose among multiple health information exchanges, Nebraska does not have the population to support the costs of competing health information exchanges.

Depending upon a single entity entails risks. Concerns may include:

- Technical concerns;
- Financial sustainability; and
- Pricing and quality of services.

Potential Impact: Some providers may opt to connect to the Nationwide Health Information Network through other means.

Level: Low to Medium

Probability: Low

Potential Severity: Medium

Resolution and Mitigation Strategies:

Technical Concerns. As the state's largest operational health information exchange, NeHII has proven that it has the expertise necessary to implement statewide health information exchange. NeHII successfully completed a pilot on June 30, 2009. As of April 2012, 18 hospitals in Nebraska and Iowa are NeHII participants. An additional 19 hospitals have signed participation agreements and are expected to go live in 2012 and early 2013. When these hospitals go live, approximately two-thirds of the state's hospital beds will be covered by NeHII. As of April 2012, NeHII now has over 2,000 users up from 1,288 on Dec. 31, 2010.

NeHII's vendor, Axolotl, also has a proven track record. Axolotl is used by a number of successful health information exchanges and has worked with the following hospital vendors:

> **Patient Registration:** Avairis, Cerner, EPIC, HBOC, HMS, IDX, Invision, McKesson, Meditech, Paragon, Quadramed, Siemens. Touchwords
>
> **Laboratory Information and Results Reporting:** Afflab, Antrim, Cerner, CompuLab, DRL Labs, Hunter, LabCorp, LabDac, McKesson, MDS, Meditech, Misys, Orchard, Quadramed, Quest Diagnostics, Radnet, SSC Softlab, Siemens, Stanford Labs
>
> **Radiology Information and Results Reporting:** ADAC, ATMS, Cerner, Chartscript, IDX, Keane, McKesson, Meditech, Mysis, Novius, Paragon, Powerscribe, Quadramed, Siemens, Customer Word and WordPerfect radiology transcription services
>
> **Health Information Management (HIM):** Arrendale, ATMS, DVI, Dictaphone, Dolby, Lanier, Medquist, Quadramed, Softmed, TNI, Your Office Genie
>
> **Pathology:** Cerner, Cortex, Dictaphone, Misys CoPath, SoftPath
>
> **Interface Engines:** CAI, Cloverleaf, eGate, Websphere Transformation Extender

Electronic Document Management: Cerner, Certify Data systems, Kofax, Lanier

Financial Sustainability. NeHII is developing a sustainable business plan. Funding from the State HIE Cooperative Agreement program will allow NeHII to accelerate implementation and solidify its revenue stream from licensing fees. NeHII is also looking at the development of additional revenue streams. Additional information on sustainability is included in other portions of the finance section of the plan.

Pricing and Quality of Services. Participation in NeHII is voluntary. NeHII can only grow by offering value at reasonable prices. One of NeHII's strengths is its affordable pricing for physicians. Physicians can subscribe to the NeHII's EMR with e-prescribing for $31.66 per month.

Dependence on a Single Health Information Exchange Vendor

Description: NeHII uses Axolotl as their vendor for health information services. Depending upon a single vendor entails risks.

Potential Impact: Axolotl could raise their prices or go out of business, forcing NeHII to look for another vendor.

Probability: Low

Potential Severity: Low

Resolution and Mitigation Strategies: Axolotl has been thoroughly vetted. NeHII selected Axolotl using a competitive bid process. In addition, NeHII's contract with Axolotl includes protections such as a termination clause favorable to NeHII.

Axolotl has been providing health information exchange solutions to meet the needs of physicians, hospitals, regional health information organizations (RHIOs) and statewide HIEs for over 15 years and is used by more multi-stakeholder HIEs than any other vendor according to KLAS Research.

Clients include:

- Santa Cruz HIE in California, the nation's longest running HIE and the first to implement bi-directional EMR interchange, electronic referral and other tools to create a patient centered medical home;
- HealthBridge in Greater Cincinnati, one of the nation's largest and most successful, sustainable HIEs with 28 participating hospitals and health systems, more than 700 physician practices, and 2.5 million patients;
- Quality Health Network (QHN) in Colorado, recognized for achieving the lowest Medicare reimbursement rates in the nation, largely attributable to their sophisticated HIE;
- Rochester RHIO in New York, a secure, electronic HIE that provides authorized medical providers with patient information from more than 20 health care organizations including hospitals, reference labs, insurance providers and radiology practices — serving more than 1.2 million patients;
- Franciscan Health System, with five hospitals in southwest Washington State;

- Clara Maass Medical Center in New Jersey, live within 60 days, delivering lab, radiology, transcription, admissions and discharge summaries to physicians;
- HealthLINC in South Central Indiana, a leader in Swine Flu Public Health Alert and Reporting mechanisms.

- Sign up 115 new provider participants in 4th quarter
- Begin Implementation of Phase 2 of Immunization Registry Project on May 17, 2012
- Begin implementation of Phase 3 of Immunization Registry Project in 4th Quarter
- Begin Implementation of PHR Connectivity Project in 3rd Quarter (a.k.a Blue Button)

Staffing Plans

State of Nebraska

The project is managed jointly by the State of Nebraska (through the eHealth Council, NITC staff, and the State HIT Coordinator) and NeHII. Anne Byers, the eHealth IT Manager for the Nebraska Information Technology Commission is in charge of monitoring this project. She is also responsible for coordinating the eHealth Council's activities. She will work with NeHII to coordinate the preparation and validation of reports. The Nebraska Information Technology Commission resides within the Office of the Chief Information Officer which is affiliated with the Department of Administrative Services.

A portion (70%) of Anne Byers' salary is funded through the Cooperative Agreement Program in years 1 and 2. In years 3 and 4 of the grant, Anne Byers will continue to monitor the project. In order to simplify grant accounting, her salary was not included in the match of the budget because the match requirement was already met.

The NITC and NITC eHealth Council, in cooperation with NeHII and the State Health Information Technology Coordinator, is 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 NeHII, the Health Information Technology Regional Extension Center, the state's health information exchanges, and other stakeholders.
- Working with 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.

Additionally, Lieutenant Governor Rick Sheehy serves 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 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. He is 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 NeHII, 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.

State HIE Cooperative Agreement funds are also being used to support a contract position with the Nebraska Department of Health and Human Services Division of Public Health. The contractor, Gary White, assists with programming needs, interface with NeHII, and data quality analysis. He is responsible for maintaining all electronic data exchange for the lab and syndromic surveillance data systems as well as monitoring the quality of the data being received via electronic data exchange. Other grant funds are expected to be available to cover this position after the State HIE Cooperative Agreement period of performance ends.

NeHII

NeHII is assuming the primary responsibility for directing and executing the State Health Information Exchange Cooperative Agreement program in Nebraska. NeHII is working 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. Deb Bass, Executive Director of NeHII, and Chris Henkenius, Project Manager for NeHII, are responsible for managing the implementation of the project. Chris Henkenius oversees the technical implementations with the assistance of a Project Manager and 1 full-time HIT trainers. Day-to-day operations of the exchange, including adoption activities, are the charge of Deb Bass, Executive Director of NeHII. Deb Bass and Chris Henkenius are jointly responsible for recruiting new providers into being participants and resolving issues as they arise. NeHII employs additional resources as needed to efficiently operate the exchange.

NeHII has a managed service contract with Bass & Associates to run the HIE. All NeHII resource costs fall under this contract:.

Scope of work: NeHII's managed Service contract with Bass is paying for HIE operations.

Period of performance: NeHII's managed service contract with Bass and Associates has a termination date of 12/31/2014.

Budget breakout (salary, travel): The managed service contract stipulates expense reimbursement for actual costs incurred. These costs are not included in the above numbers.

Type of contract and process (sole source, competitive bid): Original award from NeHII to Bass was a competitive bid in 2007.

NeHII is providing management of the statewide health information network. Key staff are identified below:

Technical Operations

- Deb Bass (Executive Director)
    - Full Time (100%)
    - Day to Day Operations Management
    - Sales
- Chris Henkenius (Program Manager)
    - Part Time (50%)
    - Day to Day Operations Management
- Sara Juster (Privacy Officer)
    - Part Time
    - Day to Day Privacy Activities
- Brenda Wessel (System Manager)
    - Full Time
    - System Management
    - User Identification and Provisioning
    - Reporting
    - Opt outs
- Jaime Katelman (Project Coordinator)
    - Full Time
    - Admin support
    - Letters and communications
    - Marketing support
- Holly Hunt (Project Coordinator)
    - Full Time
    - Admin support
    - Letters and communications
    - Marketing support
- Joni Booth (Project Manager)
    - Full Time
    - New Installation Project Management
    - Management and support
    - Training and Sales Support
- Connie Pratt (Project Manager)
    - Full Time
    - New Installation Project Management
    - Management and support
    - Training and Sales Support
- Anne Dworak (Clinical Strategist)
    - Full Time
    - Training
    - Physician Educations
    - Workflow Development
    - Physician Engagement

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 Director of the DHHS Division of Medicaid and Long-Term Care to assist with monitoring and compliance of eligible Meaningful Use incentive recipients.
- Collaborating with Wide River Technology Extension Center to ensure that the provider connectivity supported by Wide River TEC 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.

The Director of the DHHS Division of Medicaid and Long-Term Care is also involved in the project as a member of the eHealth Council and the NeHII Board of Directors.

eBHIN

Staffing Plans Including Project Managers and Other Key Roles

Existing Staffing Resources		
Position Title	**FTE**	**Description of Role**
Network Director	1.0 All Years	Responsibilities for marketing and user recruitment, governance set-up, and overall management of the organization. The Network Director will be responsible for overseeing grant writing for future funding and representing eBHIN in appropriate forums, as well as providing advice to the Board on operations and strategy in a changing environment. The Network Director will also act as Compliance Officer for 42 CFR, HIPAA privacy and security, and other provisions of HITECH as eBHIN will be a business associate and subject to direct oversight by the federal government under HITECH.
System Administrator	1.0 All Years	Responsible for hardware and operating system maintenance, security configuration and set-up. Oversight of data quality assurance and communication with Project Manager about training

		needs is also included.
HIE Project Manager	1.0 All years	Work in collaboration with system administrator, the application vendors and the Network Director to plan and implement system installation and training at all network facilities.
Administrative Assistant	1.0 All years	Primary organizational support staff for leadership team. Arrange for meetings, conduct mailings and assist with any documentation necessary for corporate documentation and activities such as minutes, filing systems and fiscal records.
Help Desk/Application Administrator	1.0	Available on a 24/7 basis to answer problem calls from application end users. Troubleshoots system problems and changes application settings to address problems and enhance functionality.
DIRECT Project Manager	0.5	Assists in the planning, development and implementation of DIRECT Secure Messaging services as part of the eBHIN Network.

In addition to the above personnel, EBHIN anticipates continuing consultant contracts to manage work associated with HIO operations including: Accounting, Legal, and Technical Support.

Timelines and Milestones—NeHII

NeHII's implementation and rollout plan for 2012 will focus on 3 primary objectives. The first objective is the continued implementation of hospital participants as data providers for NeHII. NeHII has signed participation agreements for 15 Critical Access hospitals who have planned implementations in 2012 and 2013. These implementations are completely dependent on the CAHs having the personal and technical resources available to perform the integration work (NeHII has all required staffing and resources ready for the implementations). NeHII plans to implement 1 new hospital in the first quarter of 2012, followed by beginning implementations on an additional 2 hospitals per quarter through 2012. Implementation is defined as receiving a minimum of ADT data through a production feed.

NeHII's second objective is to continue the adoption of physicians and other healthcare providers as users of NeHII. Users is defined as having the ability to send or acquire care summary information via the NeHII interface. NeHII currently has over 900 providers who have this capability, and plan to go by 50% in 2012 through the use of query, clinical messaging, and Direct based exchange.

NeHII's final objective in 2012 is to complete special projects as needed to allow providers to meet Meaningful Use objectives or to encourage greater adoption by Nebraska providers. Specifically, NeHII will begin implementation of Phase 2 of the Immunization Registry in the second quarter, allowing providers to submit immunizations to the state registry via 3rd party EMR applications. NeHII will begin Phase 3 of the Immunization Gateway project, delivery of Immunizations from the registry to NeHII, in 4th Quarter. NeHII will also begin implementation of CCD delivery to patients in the 3rd quarter, and begin project planning for NwHIN Exchange in the 4th Quarter.

Milestones:

- Implement one (1) new hospital participant in 1st quarter
- Begin Implementation of two (2) new hospital participants in 2nd quarter
- Begin Implementation of two (2) new hospital participants in 3rd quarter
- Begin Implementation of two (2) new hospital participants in 4th quarter
- Sign up 115 new provider participants in 1st quarter
- Sign up 115 new provider participants in 2nd quarter
- Sign up 115 new provider participants in 3rd quarter
- Sign up 115 new provider participants in 4th quarter
- Begin Implementation of Phase 2 of Immunization Registry Project on May 17, 2012
- Begin implementation of Phase 3 of Immunization Registry Project in 4th Quarter

- Begin Implementation of PHR Connectivity Project in 3rd Quarter (a.k.a Blue Button)

Last Updated: May 4, 2012

Facility	Date	Point Person	Notes
Antelope Memorial Hospital Neligh	2012-03	Merry Sprout	**3/14** - Sent Readiness Assessment and VPN documents **3/28** - Called and left voice mail **4/11** - Called and left voice mail
Antelope Memorial Hospital Neligh	2012-05	Merry Sprout	Readiness Assessment and VPN documents complete and sent to Axolotl **5/15** - NeHII team going to Columbus for kick-off meeting
BryanLGH Lincoln	2012-05 - 2012-12	Teri Baer	**3/27** - Conference call to review completed Readiness Assessment and VPN documentation. Unable to commit to implementation date. Will implement in stages
Community Hospital McCook	2012-06	Lori Beeby	**3/6** - Sent email asking about implementation on April as previously indicated **4/4** - Phone call with Lori. She indicated that she wanted to send the CCD document first and wouldn't be ready until the June/July time frame.
Plainview Area Health System Plainview	2012-06	Rick Gamel	Will contact Rick the week of May 7.
Providence Medical Center Wayne	2012-06	Weston Lundgren	**4/13** - Anxious to get started with NeHII. Sending Readiness Assessment and VPN documentation and will contact mid-May.

Memorial Health Center Sidney	2012-07	Jennifer Brockhaus	**12/27** - Received Readiness Assessment and VPN document **2/28-2/29** - Kick off meeting in Sidney **3/27** - Signoff on specs from CPSI **4/12** - Received notification from CPSI that implementation can begin on 6/26
Perkins County Health Services Grant	2012-07	Jennifer Baumgartner	**3/6** - Sent Readiness Assessment and VPN document **3/22** - Due to the cost from Healthland, NeHII implementation must be postponed until next fiscal year.
Avera Creighton Hospital Creighton	2012-08	Mark Schulte	Will send Readiness Assessment and VPN document in late June
Avera St. Anthony's Hospital O'Neill	2012-08	Mark Schulte	Will send Readiness Assessment and VPN document in late June
Boys Town Research Hospital Omaha	2012-08	Ann Ducey	Will send Readiness Assessment and VPN document in late June
Chase County Community Hospital Imperial	2012-08	Jennifer Harris	**2/21** - Received Readiness Assessment **3/28** - Received VPN document **4/6** - Due to the cost from Healthland, NeHII implementation must be postponed until next fiscal year.
Cherry County Hospital Valentine	2012-08	Brent Peterson	Will send Readiness Assessment and VPN document in May
Community Medical Center Falls City	2013-05	Brian Evans	Due to implementation of NextGen, this facility will not move forward until second quarter 2013

Community Memorial Hospital Syracuse	2013-06	Matt Steinblock	Numerous phone calls and email. They want to implement now but doesn't want to pay double for extra interfaces. Healthland only allows for 4 interfaces and charges $1750 for each additional interface. If they interface with NeHII now, they will have to pay an additioanl $7,000 when they upgrade in addition to the $12,000.
Lexington Regional Health Center Lexington	TBD	Robb Hanna	**11/17** - Sent paperwork and generic project plan **2/17** - Sent email asking for status **3/8** - Received email and resent the Readiness Assessment and VPN document
TriValley Health Center Cambridge	TBD	Scott Stransberg	**4/10** - Have left numerous phone calls (monthly since October) with no returns. Left last voice mail on April 10.
York General Hospital York	TBD	John Temple	**3/2** - Signed NeHII Participation Agreement **4/6** - Sent Readiness Assessment and VPN documentation

NeHII--Hospital Participation 5/7/2012

Hospital Name	City	# Beds	Live May 2012	By end of 2012	By end of 1213
Brown County Hospital	Ainsworth	23			
Boone County Health Center	Albion	25			
Box Butte General Hospital	Alliance	25			
Harlan County Health System	Alma	19			
West Holt Memorial Hospital	Atkinson	18			
Nemaha County Hospital	Auburn	20			
Memorial Community Health	Aurora	14			
Rock County Hospital	Bassett	24			
Beatrice Community Hospital & Health Center	Beatrice	25			
Dundy County Hospital	Benkelman	14			
Memorial Community Hospital & Health System	Blair	21			
Morrill County Community Hospital	Bridgeport	20			
Jennie M Melham Memorial Medical Center	Broken Bow	23			
Callaway District Hospital	Callaway	12			
Tri Valley Health System	Cambridge	25			25
Litzenberg Memorial County Hospital	Central City	20			
Chadron Community Hospital and Health Services	Chadron	25			
Columbus Community Hospital Inc.	Columbus	47		47	47
Cozad Community Hospital	Cozad	21			
Creighton Area Health Services	Creighton	23		23	23
Crete Area Medical Center	Crete	24			
Butler County Health Care Center	David City	20			
Jefferson Community Health Center	Fairbury	25			
Community Medical Center Inc.	Falls City	24			24
Franklin County Memorial Hospital	Franklin	14			
Fremont Area Medical Center	Fremont	90			
Warren Memorial Hospital	Friend	14			
Fillmore County Hospital	Geneva	20			
Genoa Community Hospital	Genoa	19			
Gordon Memorial Hospital	Gordon	25			
Gothenburg Memorial Hospital	Gothenburg	12			
Saint Francis Medical Center	Grand Island	159			
Perkins County Health Services	Grant	20		20	20
Mary Lanning Memorial Hospital	Hastings	170	170	170	170
Thayer County Memorial Hospital	Hebron	19			
Henderson Health Care Services	Henderson	13			
Phelps Memorial Health Center	Holdrege	25			
Chase County Community Hospital	Imperial	25		25	25
Good Samaritan Health System	Kearney	165			
Richard H. Young Hospital	Kearney	61			
Kimball County Hospital	Kimball	20			
Tri County Hospital	Lexington	25			25
BryanLGH Medical Center - East	Lincoln	374		374	374
BryanLGH Medical Center - West	Lincoln	290		290	290
Lincoln Surgical Hospital	Lincoln	21			
Madonna Rehabilitation Hospital	Lincoln	175			

Nebraska Heart Hospital	Lincoln	63			
Saint Elizabeth Regional Medical Center	Lincoln	260			
Niobrara Valley Hospital	Lynch	20			
Community Hospital	McCook	25		25	25
Kearney County Health System	Minden	25			
Saint Mary's Hospital	Nebraska City	18			
Antelope Memorial Hospital	Neligh	25		25	25
Faith Regional Health Services	Norfolk	227			
Great Plains Regional Medical Center	North Platte	116	116	116	116
Oakland Memorial Hospital	Oakland	18			
Ogallala Community Hospital	Ogallala	18			
Alegent Health-Bergan Mercy Medical Center	Omaha	400	400	400	400
Alegent Health-Immanuel Medical Center	Omaha	356	356	356	356
Alegent Health-Lakeside Hospital	Omaha	157	157	157	157
Boys Town National Research Hospital	Omaha	31		31	31
Boys Town National Research Hospital - West	Omaha	36		36	36
Children's Hospital	Omaha	145	145	145	145
Creighton University Medical Center	Omaha	334	334	334	334
Lasting Hope Recovery Center	Omaha	64			
Midwest Surgical Hospital	Omaha	19			
Nebraska Methodist Hospital	Omaha	423	423	423	423
Nebraska Orthopaedic Hospital	Omaha	24			
Select Specialty Hospital - Central	Omaha	52			
The Nebraska Medical Center	Omaha	635	635	635	635
Avera St. Anthony's Hospital	O'Neill	25		25	25
Valley County Health System	Ord	16			
Annie Jeffrey Memorial County Health Center	Osceola	21			
Garden County Hospital	Oshkosh	10			
Osmond General Hospital	Osmond	25			
Alegent Health-Midlands Hospital	Papillion	121	121	121	121
Pawnee County Memorial Hospital	Pawnee City	17			
Pender Community Hospital	Pender	21			
Plainview Area Health System	Plainview	16		16	16
Webster County Community Hospital	Red Cloud	16			
Howard County Community Hospital	Saint Paul	25			
Alegent Health-Memorial Hospital	Schuyler	25	25	25	25
Regional West Medical Center	Scottsbluff	164	164	164	164
Memorial Health Care Systems	Seward	24			
Memorial Health Center	Sidney	25		25	25
Brodstone Memorial Hospital	Superior	25			
Community Memorial Hospital	Syracuse	18			18
Johnson County Hospital	Tecumseh	18			
Tilden Community Hospital	Tilden	20			
Cherry County Hospital	Valentine	25		25	25
Saunders County Health Services	Wahoo	16			
Providence Medical Center	Wayne	25		25	25
Saint Francis Memorial Hospital	West Point	25			
York General Hospital	York	25			25
Bellevue Medical Center	Bellevue	91	91	91	91
Methodist Women's Hospital	Omaha	112	112	112	112
Nebraska Spine Hospital	Omaha	34	34	34	34

NeHII--Hospital Participation 5/7/2012

Hospital Name	City	# Beds	May 2012	By end of 2012	By end of 1213
Brown County Hospital	Ainsworth	23			
Boone County Health Center	Albion	25			
Box Butte General Hospital	Alliance	25			
Harlan County Health System	Alma	19			
West Holt Memorial Hospital	Atkinson	18			
Nemaha County Hospital	Auburn	20			
Memorial Community Health	Aurora	14			
Rock County Hospital	Bassett	24			
Beatrice Community Hospital & Health Center	Beatrice	25			
Dundy County Hospital	Benkelman	14			
Memorial Community Hospital & Health System	Blair	21			
Morrill County Community Hospital	Bridgeport	20			
Jennie M Melham Memorial Medical Center	Broken Bow	23			
Callaway District Hospital	Callaway	12			
Tri Valley Health System	Cambridge	25			25
Litzenberg Memorial County Hospital	Central City	20			
Chadron Community Hospital and Health Services	Chadron	25			
Columbus Community Hospital Inc.	Columbus	47		47	47
Cozad Community Hospital	Cozad	21			
Creighton Area Health Services	Creighton	23		23	23
Crete Area Medical Center	Crete	24			
Butler County Health Care Center	David City	20			
Jefferson Community Health Center	Fairbury	25			
Community Medical Center Inc.	Falls City	24			24
Franklin County Memorial Hospital	Franklin	14			
Fremont Area Medical Center	Fremont	90			
Warren Memorial Hospital	Friend	14			
Fillmore County Hospital	Geneva	20			
Genoa Community Hospital	Genoa	19			
Gordon Memorial Hospital	Gordon	25			
Gothenburg Memorial Hospital	Gothenburg	12			
Saint Francis Medical Center	Grand Island	159			
Perkins County Health Services	Grant	20		20	20
Mary Lanning Memorial Hospital	Hastings	170	170	170	170
Thayer County Memorial Hospital	Hebron	19			
Henderson Health Care Services	Henderson	13			
Phelps Memorial Health Center	Holdrege	25			
Chase County Community Hospital	Imperial	25		25	25
Good Samaritan Health System	Kearney	165			
Richard H. Young Hospital	Kearney	61			
Kimball County Hospital	Kimball	20			
Tri County Hospital	Lexington	25			25
BryanLGH Medical Center - East	Lincoln	374		374	374
BryanLGH Medical Center - West	Lincoln	290		290	290
Lincoln Surgical Hospital	Lincoln	21			
Madonna Rehabilitation Hospital	Lincoln	175			

Nebraska Heart Hospital	Lincoln	63			
Saint Elizabeth Regional Medical Center	Lincoln	260			
Niobrara Valley Hospital	Lynch	20			
Community Hospital	McCook	25		25	25
Kearney County Health System	Minden	25			
Saint Mary's Hospital	Nebraska City	18			
Antelope Memorial Hospital	Neligh	25		25	25
Faith Regional Health Services	Norfolk	227			
Great Plains Regional Medical Center	North Platte	116	116	116	116
Oakland Memorial Hospital	Oakland	18			
Ogallala Community Hospital	Ogallala	18			
Alegent Health-Bergan Mercy Medical Center	Omaha	400	400	400	400
Alegent Health-Immanuel Medical Center	Omaha	356	356	356	356
Alegent Health-Lakeside Hospital	Omaha	157	157	157	157
Boys Town National Research Hospital	Omaha	31		31	31
Boys Town National Research Hospital - West	Omaha	36		36	36
Children's Hospital	Omaha	145	145	145	145
Creighton University Medical Center	Omaha	334	334	334	334
Lasting Hope Recovery Center	Omaha	64			
Midwest Surgical Hospital	Omaha	19			
Nebraska Methodist Hospital	Omaha	423	423	423	423
Nebraska Orthopaedic Hospital	Omaha	24			
Select Specialty Hospital - Central	Omaha	52			
The Nebraska Medical Center	Omaha	635	635	635	635
Avera St. Anthony's Hospital	O'Neill	25		25	25
Valley County Health System	Ord	16			
Annie Jeffrey Memorial County Health Center	Osceola	21			
Garden County Hospital	Oshkosh	10			
Osmond General Hospital	Osmond	25			
Alegent Health-Midlands Hospital	Papillion	121	121	121	121
Pawnee County Memorial Hospital	Pawnee City	17			
Pender Community Hospital	Pender	21			
Plainview Area Health System	Plainview	16		16	16
Webster County Community Hospital	Red Cloud	16			
Howard County Community Hospital	Saint Paul	25			
Alegent Health-Memorial Hospital	Schuyler	25	25	25	25
Regional West Medical Center	Scottsbluff	164	164	164	164
Memorial Health Care Systems	Seward	24			
Memorial Health Center	Sidney	25		25	25
Brodstone Memorial Hospital	Superior	25			
Community Memorial Hospital	Syracuse	18			18
Johnson County Hospital	Tecumseh	18			
Tilden Community Hospital	Tilden	20			
Cherry County Hospital	Valentine	25		25	25
Saunders County Health Services	Wahoo	16			
Providence Medical Center	Wayne	25		25	25
Saint Francis Memorial Hospital	West Point	25			
York General Hospital	York	25			25
Bellevue Medical Center	Bellevue	91	91	91	91
Methodist Women's Hospital	Omaha	112	112	112	112
Nebraska Spine Hospital	Omaha	34	34	34	34

	# Beds	May 2012	By end of 2012	By end of 1213
Hospital Beds Total	**6769**	**3283**	**4295**	**4412**
% Hospital Beds		**48.5%**	**63.5%**	**65.2%**
# of Nebraska Hospitals	**97**	**15**	**30**	**35**
% of Nebraska Hospitals		**15.5%**	**30.9%**	**36.1%**

eBHIN Implementation Plan 2012 - 2013				
Activity	**1st Quarter**	**2nd Quarter**	**3rd Quarter**	**4th Quarter**
Region 5 - HIE Implementation	Deployed for: Blue Valley Behavioral Health Centerpointe Child Guidance Center Community Mental Health Center Cornhusker Place Houses of Hope Lincoln Medical Education Partnership Lutheran Family Services Mental Health Association Region 5 Systems St. Monicas	Deployed for BryanLGH		
Region 5 – EPM Deployment	Completed at CenterPointe Started at Houses of Hope	Completed at Houses of Hope Started at St. Monica's	Completed at St Monicas Started at Cornhusker Place	Completed at Cornhusker Place Started at Community Mental Health Center
Region I – EPM Deployment	Started at Cirrus House	Completed at Cirrus House Started at Human Services	Completed at Human Services Started at Western Community Health resources (WCHR)	Completed at WCHR Started at Northeast Panhandle Substance Abuse Center (NEPSAC)

Activity	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Region I – HIE Deployment		Deployed for: Box Butte General Hospital Cirrus House Crossroads Human Services Inc. NEPSAC Panhandle MH Center Regional West Med Center WCHR		
Region 6 – HIE Deployment	Organizational work started with Technology assessment across all 31 sites	Gap Analysis performed and individual needs addressed	Training and deployment Plan Finalized Intercompany Agreements Executed	Deployment completed: Alegent ARCH BAART Catholic Charities Community Alliance Douglas County CMHC Friendship Program LFS LHRC NE Urban Indian Health NOVA OneWorld CHC Region 6 Behavioral Healthcare Salvation Army Santa Monica Telecare

Activity	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Regions 2, 3 & 4	Organizational Work begins with Cross Regional Kick-off Meeting	Readiness Assessment Completed across 17 sites	Assessment Analysis and Gaps Identified	Implementation Strategies and Recommendations Finalized
Region V and Council Bluffs FQHC – DIRECT Secure Messaging	Discovery related to NextGen HIE Portal Capability for Provider Directory Linkage Policies and procedures development to support BH Care record exchange	Pilot Capability with Simulated Data between both settings for closed loop referral from FQHC into BH Setting	Wait for opportunity for authentic patient data	Wait for opportunity for authentic patient data

Nebraska State HIE Cooperative Agreement

Evaluation Plan

AIM

To determine if Nebraska has achieved a functioning eHealth environment with widespread participation by providers and consumers and if investments in eHealth have led to improvements in health care quality and efficiency in Nebraska.

Key Evaluation Questions

- **Has Nebraska achieved a functioning eHealth environment with widespread participation by providers and consumers?**
    - Did participation in health information exchange by hospitals, physicians, and other providers increase?
    - Did the exchange of structured lab results increase?
    - Did care summary exchange increase?
    - Did pharmacy and prescriber participation in e-prescribing increase?
    - Did utilization of Direct increase?
    - Has usage of eBHIN's medication reconciliation module increased?
    - Has the number of providers electronically submitting data to the immunization registry increased?
    - Has the number of labs submitting data electronically to the Nebraska Electronic Disease Surveillance System (NEDSS) increased?
    - Has the number of hospital emergency departments submitting syndromic surveillance data increased?
    - Are most consumers willing to have their health information available through NeHII?
    - Are behavioral health consumers willing to have their information available through eBHIN?

- **Have investments in eHealth led to improvements in health care quality and efficiency in Nebraska?**
    - How satisfied are the providers with HIE?
    - What are the consumer concerns surrounding health information security and privacy?
    - What are the levels of awareness and expectations of health information technology among consumers?
    - What is the discrepancy rate between what the physician intended to prescribe and what is dispensed at the pharmacy? What are the common causes of medication errors that reach the patient?

- Does access to the results of diagnostic laboratory and radiology tests through the health information exchange reduce rate of redundant testing?
- Does access to formulary and eligibility information improve medication adherence and generic utilization rates by making that information available at the time of prescribing?
- What HIE data elements would be useful in the ER setting?
- What information not currently available in the HIE would be useful?
- What are the barriers to using HIE?
- Would changes in equipment, personnel, or care delivery be necessary to access HIE data in the emergency room setting?

Evaluation Framework

The following logic model shows the relationships between Nebraska's strategic and operational plans, State HIE Cooperative Agreement funding and activities, outputs, outcomes, and impact.

Nebraska State HIE Logic Model

State Plan	State HIE Grant		Intended Results		
	Inputs	**Activities**	**Outputs**	**Outcomes**	**Impact**
Vision Goals Objectives	Grant Funding Personnel Equipment	HIE development activities	Expanded HIE capabilities	Functioning eHealth environment with widespread participation by providers and consumers	Improvements in health care quality and efficiency

Nebraska's State HIE Evaluation framework ties tier one outcome measures and tier two impact measures to objectives in Nebraska's strategic eHealth plan.

Nebraska State HIE Evaluation Framework

Focus Area	Objectives	Tier One Outcome Measures—Is Nebraska achieving a functioning eHealth environment with widespread participation by providers and consumers?	Tier Two Impact Measures—Are investments in eHealth leading to improvements in health care quality and efficiency in Nebraska?

HIE Development	Support the development and expansion of health information exchanges to improve the quality and efficiency of care	NeHII will track the number of hospitals using NeHII.	
HIE Development	Support the development and expansion of health information exchanges to improve the quality and efficiency of care	NeHII will track the number of physicians using NeHII.	Focus groups of providers will be convened to determine what they see as the benefits and challenges of using health information exchange and health IT.
HIE Development	Support the development and expansion of health information exchanges to improve the quality and efficiency of care	NeHII will track participation of long-term care facilities, pharmacists, dentists, home health providers, chiropractors, etc. eBHIN will track behavioral health providers participating in health information exchange.	
Care Summary Exchange Lab Results Delivery E-Prescribing **Program Priority Area**	Support meaningful use		Focus groups of providers will be convened to determine what they see as the benefits and challenges of using health information exchange and health IT, including cares summary exchange, lab results delivery, and e-prescribing.

HIE Development	Support the development of interconnections among health information exchanges in the state and nationwide	NeHII and eBHIN will develop policies, procedures, and technical infrastructure to exchange data between the two HIEs.	
Care Summary Exchange **Program Priority Area**	Support meaningful use Support the development of interconnections among health information exchanges in the state and nationwide	The exchange of patient care summaries within NeHII will be tracked. The exchange of patient care summaries between NeHII and eBHIN will be tracked. ONC will provide data on: • % of hospitals sharing electronic care summaries with providers outside their system (AHA); • % of hospitals sharing electronic care summaries with hospitals outside their system (AHA); • % of hospitals sharing electronic care summaries with ambulatory providers outside their system (AHA); • % of ambulatory providers sharing care summaries with other providers (NAMCS).	
E-Prescribing	Support meaningful use	The % of community pharmacists activated for e-prescribing will be tracked. Pharmacies which are not accepting e-prescriptions	A study of e-prescribing usage and errors will be conducted to learn more about the benefits of e-prescribing and the prevalence and sources of errors.

Program Priority Area		will be surveyed to learn more about barriers.	
E-Prescribing **Program Priority Area**	Support meaningful use	The % of physicians e-prescribing will be tracked.	
Lab Results Delivery **Program Priority Area**	Support meaningful use	The number of labs participating in NeHII will be tracked. ONC will provide data on: • % of hospitals sharing laboratory results electronically with providers outside their system (AHA, roll up); • % of hospitals sharing laboratory results electronically with hospitals outside their system (AHA); • % of hospitals sharing laboratory results electronically with ambulatory providers outside their system (AHA); • % of office-based	A study will be done to determine if the rate of redundant diagnostic radiology testing has decreased since the implementation of HIE.

		physicians able to view lab results electronically (NAMCS); • % of office-based physicians able to send lab orders electronically (NAMCS). Labs will be surveyed annually to determine their ability to send lab results in a structured format and their ability to send lab results using LOINC. NeHII will query the number of lab queries when/if this functionality is available. (This information will not be available until NeHII has implemented the Axolotl Discovery Reporting Tool. This tool is still in development.)	
HIE Development Quality of Care	Support the development and expansion of health information exchanges to improve the quality and efficiency of care Support meaningful use		A study will be done to determine what is the value of health information exchange in the emergency department.

HIE Development Quality of Care	Support the development and expansion of health information exchanges to improve the quality and efficiency of care Support meaningful use	Use of the eBHIN medication reconciliation module through each transition of care from one healthcare setting to another will be tracked to see if usage increases.	A study will be done to determine if there a decrease in re-hospitalization of behavioral health patients associated with a single episode of care i.e. demonstrating reduction in the 30-day readmission rate.
HIE Development Public Health	Support meaningful use Encourage the electronic exchange of public health data	The number of providers electronically submitting data to the immunization registry will be tracked.	
HIE Development Quality of Care	Support meaningful use Encourage the electronic exchange of public health data	The number of labs electronically submitting data to NEDSS will be tracked.	
HIE Development Quality of Care	Support meaningful use Encourage the electronic exchange of public health data	The number of hospital emergency departments electronically submitting syndromic surveillance data will be tracked.	
HIE Development	Support the development of a sustainable business model for building and maintaining health information exchange in Nebraska	NeHII and eBHIN will develop sustainable business models which will be included in plan updates submitted to ONC.	

HIE Development Privacy and Security	Ensure the security of health information exchange	eBHIN and NeHII will have 0 reportable data breaches.	
HIE Development Privacy and Security Consumer Engagement	Continue to address health information security and privacy concerns of providers and consumers		Focus groups of consumers will be held to determine what they see as benefits and concerns.
HIE Development Privacy and Security Consumer Engagement	Build awareness and trust of health information technology	The opt-out rate from NeHII will be tracked. eBHIN will track their opt-in rate.	
Consumer Engagement	Improve health literacy in the general population	ONC will provide data on: • % of ambulatory care physicians able to provide patients with clinical summaries for each visit (NAMCS, Q19I); • % of hospitals capable of providing patients with an electronic copy of their health information (AHA, Q8).	

Key Evaluation Research Projects

Provider Satisfaction with HIE

Specific Research Question: How satisfied are the providers with HIE?

Study Design: Focus groups and surveys will be utilized to determine provider satisfaction with HIE.

Study Population: A list of HIE users will be obtained from NeHII. Non-users will be recruited for a list of medical clinics obtained from the Health Professionals Tracking Service (HPTS). We will randomly select participants to focus groups and conduct continuous recruitment to include:

1. Pharmacies who do not accept e-prescriptions (as requested by the State)
2. HIE users and non-users including eBHIN and Direct Services
3. Providers from urban and rural practices
4. Providers from large and small practices such as tertiary or primary hospitals
5. All primary healthcare providers including: MD, DO, RN, PA, NP, Pharmacists, MD office managers who interact with HIE system.

Data Sources and Data Collection Methods:

We anticipate conducting 4 to 5 focus groups with 8 to 10 participants in each group. The following are partial list of questions to be discussed during focus groups to gain understanding of the providers' satisfaction with HIE.

- Which providers are using HIE?
- What are the characteristics of those not participating in HIE? Why did they choose not to participate? What would encourage them to participate?
- What are the providers using the HIE to do?
- Are providers satisfied with the ease of use and integration into their work flow?
- Do providers feel that they are better able to provide care by having more complete patient information at the point of care?
- Do the providers have concerns about HIE?
- What improvements/enhancements would the providers like to see?
- What software are the providers using?
- What are the advantages and disadvantages of sharing health information?

Survey questions and response options will be based on feedback and discussion obtained during focus groups to gain a broader understanding of the provider satisfaction with HIE. We will use the last focus group to pilot test a draft of the questionnaire. We will also ask experts in the field to review the survey draft for clarity, completeness, and to establish face validity.

An e-mail distribution list of all healthcare clinics will be purchased from the Health Professionals Tracking Service (HPTS). The survey will ask questions about practice and usage of HIE, practice location and type, years in practice, satisfaction with the current system, areas of concern, and suggested areas

for improvement. This survey will help provide an overview of provider satisfaction with HIE and potential future directions for NeHII.

Data Analysis: Qualitative and quantitative data will be tabulated and analyzed to assess providers' satisfaction with HIE.

Consumer satisfaction

Specific Research Question: What are the consumer concerns surrounding health information security and privacy? What are the levels of awareness and expectations of health information technology among consumers?

Study Design: Focus groups will be conducted to determine consumer satisfaction with HIE.

Study Population: Consumers will be recruited randomly from several clinics.

Data Sources and Data Collection Methods:

We will conduct up to ten focus groups with 8-10 participants in each group. We will strive to have a diverse group of participants including younger and older adults, women, and minorities. Focus group discussions will help provide information on the consumers' satisfaction with HIE, questions, and concerns.

The following types of questions will be discussed during the focus groups:

- What are the characteristics of consumers who opt out?
- Why do they choose to opt-out?
- What strategies could be used to better inform the consumers?
- What do patients think about HIE? What concerns do patients have about HIE?
- Are they satisfied with their experiences with NeHII and eBHIN?
- What do they see as the benefits of health information exchange?
- What do consumers know about e-prescribing?
- Are they satisfied with e-prescribing?
- Do they use a Personal Health Record (PHR)? Are they interested in using a PHR?
- Are the consumers experienced with information technology in healthcare?
- What do they want in a PHR? How do they see health IT helping them to better manage their health and their health care?
- Do patients want access to lab results?
- Have they directly accessed lab results?
- Are the consumers receiving summary information after visits to their physicians? Is this information useful to them?
- How comfortable are the consumers with sharing medical information electronically?

- What do consumers think about data transfer? Are they concerned with network or data storage vulnerability?
- How would the consumers like to be educated about HIE? Who should be responsible for consumer education?
- What role should the local and state government have in HIE?

Data Analysis: Qualitative data from focus groups will be tabulated and analyzed to assess consumers' satisfaction with HIE.

E-Prescribing

Specific Research Questions:

What is the discrepancy rate between what the physician intended to prescribe and what is dispensed at the pharmacy? What are the common causes of medication errors that reach the patient?

Study Design:

The study will use a retrospective, observational design.

Study Population:

Prescriptions transmitted electronically between primary care clinics and community pharmacies will be evaluated. We will identify an initial pilot site to refine the research methodology. One physician clinic and one retail pharmacy will be recruited for the pilot project. After completion of the pilot study, up to four additional sites will be recruited (2 urban, 2 rural).

Data Sources and Data Collection Methods:

The following information will be collected.

1. **Physician Intent:** What the physician intended to prescribe - identified from the patient's chart / clinic notes.
2. **e-Prescription:** What was initially sent from the physician's office using the e-prescribing software.
3. **Dispensed Medication:** What was dispensed by the pharmacy – identified from participating pharmacy records.

Data Collection:

The participating pharmacies will identify new prescriptions (refills will be excluded) written by participating providers during a defined study period. Information contained on the prescription label will be recorded. The prescription data gathered at the pharmacy will be taken to the prescriber's clinic. Details of the prescriptions that were electronically sent from the physician's office will be gathered

from the clinic's electronic prescribing software. A trained research nurse will record physician intent by reviewing notes associated with the clinic visit where the electronic prescription was generated. The encrypted de-identified dataset will be returned to UNMC for analysis.

Follow-up:
When discrepancies are identified, the investigators will contact the physician's office and/or the pharmacy to determine why the discrepancy occurred.

Data Analysis:

Overall rates and causes of discrepancies will be reported.

Radiology and laboratory data

Specific Research Question: Does access to the results of diagnostic laboratory and radiology tests through the health information exchange reduce rate of redundant testing?

Study Design: Retrospective cohort study

Study Population: Patients of participating payers (Blue Cross and Blue Shield and/or Medicaid) with a qualifying diagnostic laboratory or radiology test.

Data Sources and Data Collection Methods: Claims data from participating payers will be utilized. Using a basket of diagnostic radiology procedures, developed via literature review and expert panel, we will quantify the number of procedures repeated within three time periods (24 hours, 7 days, and 30 days). To begin to evaluate the impact of the HIE on the rate of repeated procedures, we will perform a subgroup comparison among patients seen in a single system for their entire episode of care, patients seen in multiple systems that are member of the HIE, and patients seen in multiple systems where one or more providers did not participate in the HIE.

Data Analysis: The rates of redundant testing for a basket of procedures will be compared between the three cohorts of patients. Chi-square analysis and logistic regression models will be used to compare the rates of repeated tests in the specified time periods.

Utilization of Medication Histories

Specific Research Question: Does access to formulary and eligibility information improve medication adherence and generic utilization rates by making that information available at the time of prescribing?

Study Design: Retrospective cohort study

Study Population: Prescribers with a qualifying from a participating payer (Blue Cross and Blue Shield and/or Medicaid).

Data Sources and Data Collection Methods: Prescription claims data from participating payers will be used to determine the primary non-adherence, medication adherence, and generic utilization rates between e-prescribers with access to medication histories through the HIE and those without. We will calculate quarterly rates for overall prescribing and by medication class.

Data Analysis: Chi-square and logistic regression models will be used to compare the rates between the cohorts.

Value of HIE in Emergency Department

Specific Research Questions:

The main objective of the focus groups is to determine and discuss the following questions:

- What HIE data elements would be useful in the ER setting?
- What information not currently available in the HIE would be useful?
- What are the barriers to using HIE?
- Would changes in equipment, personnel, or care delivery be necessary to access HIE data in the emergency room setting?

Study Design: Focus groups

Study Population:

Four focus groups will be conducted in the following hospital types:

1. Urban trauma center
2. Urban tertiary care hospital
3. Rural primary care hospital (excludes Omaha and Lincoln)
4. Critical access hospital

Data Sources and Data Collection Methods:

Up to ten healthcare providers that regularly provide care to emergency room patients will be included in each focus group. At a minimum, each group will consist of an ER physician and nursing staff. The focus group may also include members from other services such as radiology and pharmacy.

Data Analysis:

Qualitative data from focus groups will be tabulated and analyzed to assess the value of HIE in the Emergency Room setting.

Tracking Program Progress

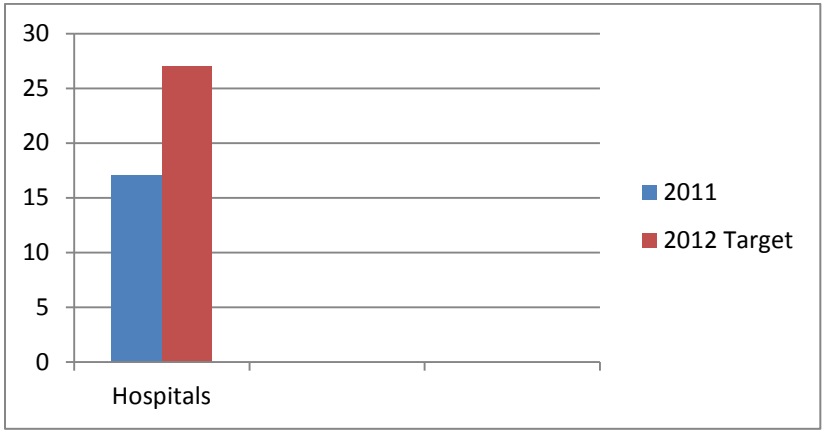
	Report May 2012		Report January 2013		Report January 2014	
Program Priority	**Status as of December 2011**	**Target for December 2012**	**Status as of December 2012**	**Target for December 2013**	**Status as of December 2013**	**Target for end of grant period**
% of pharmacies participating in e-prescribing	**90%** **Source**: Surescripts Data Dec. 2011 National Actual: 92%	**95%** National Goal: 94%		National Goal: 95%		
% of labs sending electronic lab results to providers in a structured format	**20%** **Source:** UNMC Lab census conducted in March 2012	**25%**				
% of labs sending electronic lab results to providers using LOINC	**15%** **Source:** UNMC Lab census conducted in March 2012	**20%**				
% of hospitals sharing electronic care summaries with unaffiliated hospitals and providers	**34%** **Source:** AHA Survey, 2010 National Actual: 27%	**35%** **National Goal:** 45%		National Goal: 55%		
% of ambulatory providers electronically sharing care summaries with other providers	**27%** **Source:** NAMCS survey, 2010 National	**31%** National Goal: 40%				

	Report May 2012		Report January 2013		Report January 2014	
Program Priority	**Status as of December 2011**	**Target for December 2012**	**Status as of December 2012**	**Target for December 2013**	**Status as of December 2013**	**Target for end of grant period**
	Actual: 31%			National Goal: 50%		
Public Health agencies receiving ELR data produced by EHRs or other electronic sources using HL7 2.5.1 LOINC and SNOMED.	100% **Source:** NDHHS Division of Public Health	100%				
Immunization registries receiving electronic immunization data produced by EHRs in HL7 2.3.1 or 2.5.1 formats using CVX code.	100% **Source:** NDHHS Division of Public Health	100%				
Public Health agencies receiving electronic syndromic surveillance hospital data produced by EHRs in HL7 2.3.1 or 2.5.1 formats (using CDC reference guide).	100% **Source:** NDHHS Division of Public Health	100%				
Public Health agencies receiving electronic syndromic surveillance ambulatory data produced by EHRs in HL7 2.3.1 or 2.5.1.	100% **Source:** NDHHS Division of Public Health	100%				

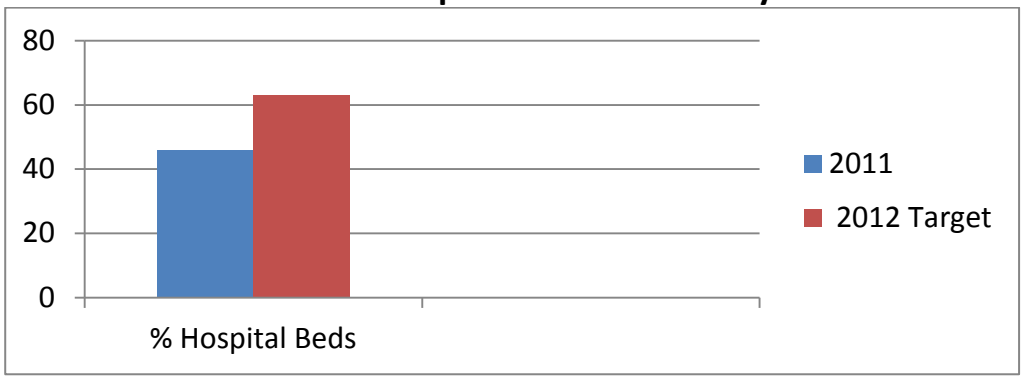
Structured format: Documentation of discrete data using controlled vocabulary, creating fixed fields within a record or file, or another method that provides clear structure to information (is not completely free text)

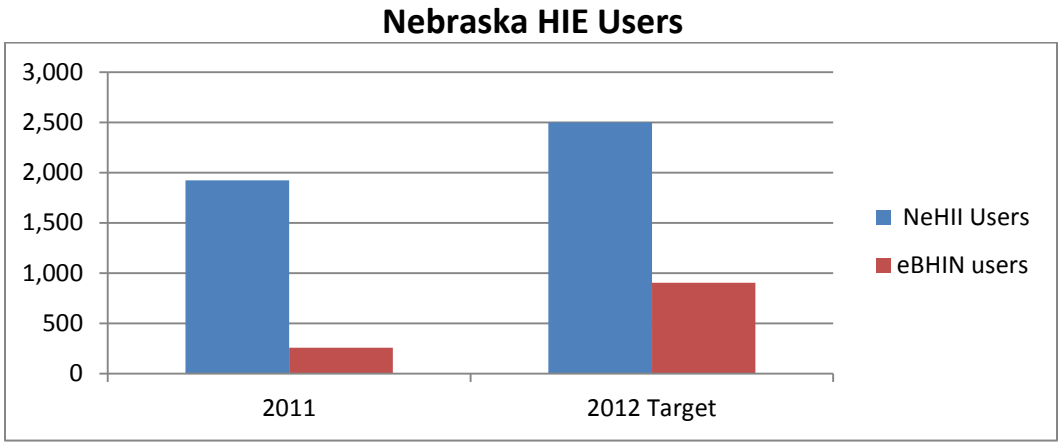
Nebraska HIE Goals and Tracking
2012

Participating Hospitals—NeHII



% of Nebraska Hospital Beds Covered by NeHII

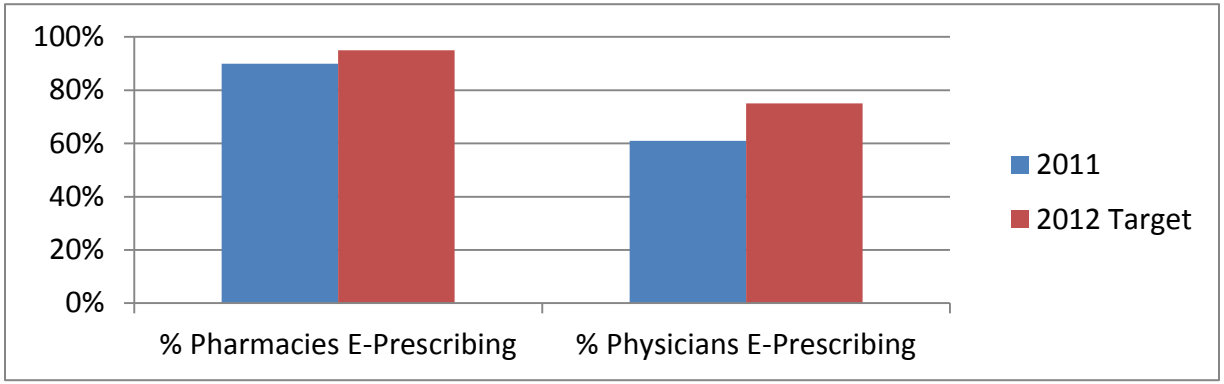




Nebraska HIE Metrics

Measure	Baseline 2011	Target 2012
Individual users enabled for query-based exchange through NeHII	1,922 total users	2,500 total users
Individual users enabled for query-based exchange through eBHIN	259 providers with EPM/0 providers on HIE	905 total users
Acute Care Hospitals Actively Participating in Query-Based Exchange through NeHII	17 hospitals (14 Nebraska and 3 Iowa) **Participating Hospitals--NeHII** • Bellevue Medical Center - Bellevue, NE • Bergan Mercy Hospital - Omaha, NE • Children's Hospital 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	27 hospitals

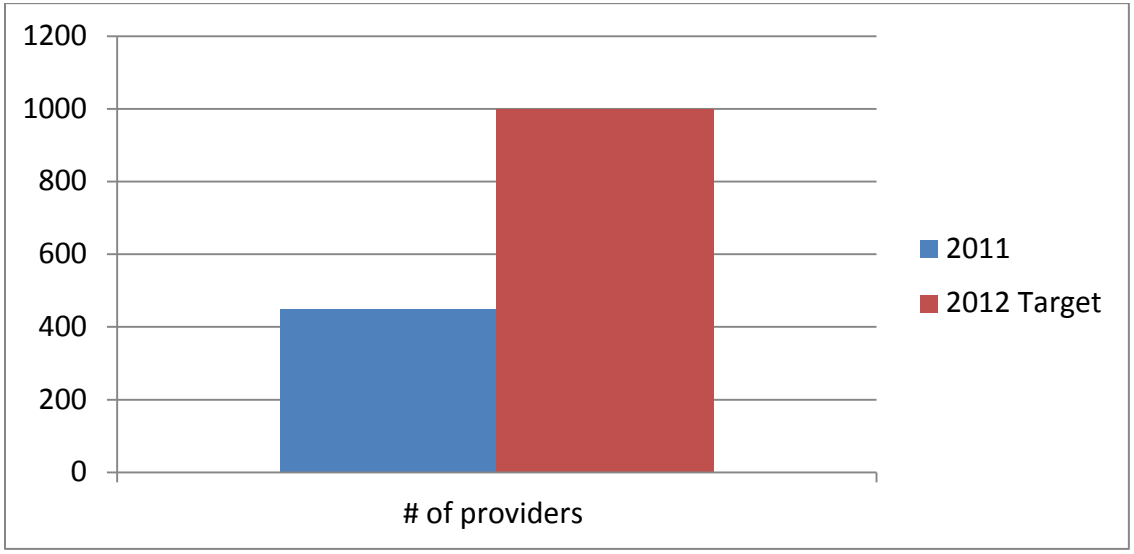
	• Methodist Women's Hospital – Omaha, NE • Midlands Hospital -Papillion, NE • Nebraska Spine Hospital - Omaha, NE • The Nebraska Medical Center - Omaha, NE • Community Memorial Hospital - Missouri Valley, IA • Mercy Hospital - Corning, IA • Mercy Hospital - Council Bluffs, IA	
% of Nebraska Hospital Beds Participating in Query-Based Exchange through NeHII	46%	60%
Hospital Behavioral Health Units Participating in eBHIN	0	3
Laboratories actively participating in query-based exchange	17 hospital-based laboratories (14 Nebraska and 3 Iowa) **Hospital-Based Laboratories Participating in NeHII** • Bellevue Medical Center - Bellevue, NE • Bergan Mercy Hospital - Omaha, NE • Children's Hospital 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 • Community Memorial Hospital - Missouri Valley, IA • Mercy Hospital, Corning, IA • Mercy Hospital – Council Bluffs, IA	1 independent reference lab and 27 hospital-based laboratories



E-Prescribing Adoption

Measure	Baseline 2011	Target 2012
% of community pharmacies activated for e-prescribing	90%	95%
% of physicians e-prescribing	61%	75%

Providers Submitting to Immunization Registry



Providers Submitting to Immunization Registry/Public Health Reporting

Measure	Baseline 2011	Target 2012
Total Number of Providers Submitting to Immunization Registry	450**	1,000
Number of Providers Submitting to Immunization Registry Electronically	136	
# of labs submitting data to NEDSS	16	20
# of hospitals submitting data to the syndromic surveillance system	16	14
# of ambulatory providers/clinics submitting syndromic surveillance data		12