Nebraska Operational eHealth Plan

May 2013 · Version 7

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 2013
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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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Individual Access *Where HIE entities store, assemble or aggregate individually identified health information (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 through 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 HIE protocols and use of Direct. A pilot project with SimplyWell was explored but the customization to the SimplyWell application made it cost prohibitive and the project was delayed until funding sources can be identified. Discussions are underway with Microsoft Healthvault to offer physicians the ability to send the office visit summary to their patients using Direct services. Because patients do not have access to information through NeHII, 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 awareness campaign that was released July 2012. The campaign included a consumer microsite that can be accessed at www.connectnebraska.net, public service ads for radio use, a YouTube video, and signage for physicians and provider offices. NeHII also offers a speakers bureau to those organizations who wish to host a speaker on a variety of topics related to healthcare reform.	**Gap Area:** Patients do not currently have access to compiled electronic health information through 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, a CHI hospital. The committee is chaired by the NeHII Privacy Officer, Sara Juster. Access to the NeHII system is still limited to healthcare providers and case managers at the payers. NeHII does not have the capital nor human resources to support consumer access to the HIE. The Microsoft HealthVault solution using Direct services to deliver electronic protected health information (ePHI) to consumers is the direction we are pursuing. The physician will verify the identity of the consumer during the office visit and the office visit summary will be sent to their MS HealthVault account established at the time of the visit using Direct services. The physician will be

			required to sign a Direct services participation agreement with NeHII. The Direct services agreement has been approved by NeHII legal counsel. **Timeline**: NeHII is waiting for the release of Direct 2.0 that will support a HISP to HISP connection from the Axolotl/Optum organization which is expected in Q2 2013. NeHII is also working through the technical and contractual agreements that will be required by Microsoft. NeHII is also considering other vendors to supply this functionality to the HIE.
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 participating provider 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, consumer microsite and the NeHII support desk are the four main avenues to disseminate information to consumers. The support desk is staffed 24 x7 to take calls from consumers. The consumer microsite also offers the ability for consumers to email questions. All HIE 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 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.*	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, individuals have the right to request and review documentation to determine who has accessed their information or to whom it has been disclosed. Consumers can contact the help desk or send an email to get this information. NeHII team members verify what participating facilities have accessed their data and then refer the consumer to the privacy officer at the facility to offer additional detail regarding the names of those that have accessed their information.	Consumer education brochures, the NeHII website, consumer microsite, and the NeHII support desk are the four main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies which include openness and transparency as a guiding principle.	

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 any participating provider. Patients can also contact the NeHII support desk or complete a form on the NeHII website to make a choice on participation. All opt-out decisions are global; there is no ability to opt out on an encounter level or physician specific basis. There is no break the glass functionality. NeHII's Privacy Policies include a section on individual control of information available through the system.	Consumer education brochures, the NeHII website, consumer microsite, and the NeHII support desk are the four 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 opt out of participation when presenting at a participating provider. All opt-out decisions are global; there is no ability to opt out on an encounter level or physician specific basis. . Currently NeHII's vendor, Axolotl/Optum, as most other HIE vendors, does not 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 Hospital, a CHI hospital. 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 Privacy/Security committee puts forward a motion from the committee to the Board of Directors to approve the suggested changes in policy, the motion for approval goes to the NeHII Board of Directors 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, payment and healthcare operations purposes. For health care operations purposes, the use is limited to the extent necessary as defined by the specific use case and date range allocated to the specific use case as approved by the Privacy/Security Committee.	Consumer education brochures, the NeHII website, consumer microsite, and the NeHII support desk are the four 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 the minimum necessary standard.	
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, 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.*	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 in its system. NeHII's privacy policies include a section on amendment of data. NeHII uses OptumInsight's (aka Axolotl) proprietary matching algorithms based on First Name, Last Name, DOB, Gender, Social Security Number (if available), and Medical Record Number (if available). Based on all available information, our matching accuracy is 100%. .	Consumer education brochures, the NeHII website, consumer microsite, and the NeHII support desk are the four main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies which include a section on amendment of data.	

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 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*	NeHII has conducted a thorough assessment of risks and vulnerabilities. NeHII maintains complete audit logs that track access and use of the system. 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 security policies have been reviewed this past month and enhanced to ensure protections are in place for remote work sites as NeHII is a virtual organization staffed by remote workers. 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 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	Consumer education brochures, the NeHII website, consumer microsite, and the NeHII support desk are the four 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. To date, the cost of implementing two-factor authentication has been prohibitive but NeHII will be considering the implementation of two-factor authentication in the next 12 months. **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 Hospital, a CHI hospital. The committee is chaired by the NeHII Privacy Officer, Sara Juster. Once the committee has reviewed 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 Privacy/Security committee puts forward a motion from the committee to the Board of Directors to approve the suggested changes in policy, the motion for approval goes to the NeHII Board of Directors for a second to the motion and then a vote occurs for final approval. Cost considerations for two factor authentication will also be reviewed by the NeHII Finance Committee prior to 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 costs and demand from users. At this time, NeHII plans to address the added costs of two factor authentication when it is mandated.

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.	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. Two factor authentication is being considered as demand for an additional security layer is becoming apparent. 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 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.		NeHII has negotiated in the vendor agreement that costs incurred by federal mandates will be covered by the vendor solution.

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 covered entities or business associates of covered entities under HIPAA, and as such all data providers and users sign business associate agreements. NeHII is hosting an educational workshop in April to educate participants about the HITECH final ruling and the added liability business associates will be held accountable to maintain. 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 require 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, consumer microsite, and the NeHII support desk are the four main avenues to disseminate information to consumers. All participants agree to NeHII's Privacy Policies which address accountability. NeHII distributes a Cyber Security Newsletter on a quarterly basis to stakeholders to disseminate information related to HITECH updates and cyber security risk assessment concepts/processes.	

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)*
Individual Access *Where HIE entities store, assemble or aggregate individually identifiable health information (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 eBHIN's 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 eBHIN's policies and procedures. These are incorporated into the eBHIN 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 eBHIN's 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 website 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, 2013.
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 website accessible to providers.	**Gap Area**: A section about amending records needs to be added to the FAQ's and website 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, 2013.

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 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 content of their shared record is described in the Consent for Release of Information. It is also discussed on the "Information for Consumers" page on the eBHIN website and is included in the FAQ's. eBHIN's 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 made available through the informed consent process with patients in each provider setting. Information is also available via eBHIN's website and patient educational materials. In the development phase, monthly presentations were made to consumer groups.	**Gap:** A section about the ability to request an accounting of disclosures needs to be added to the FAQ and website 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, 2013.
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 the network participation agreement. eBHIN has 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 eBHIN's 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 eBHIN's policies and procedures, consents, and FAQ's. The notice of prohibition on redisclosure is in the eBHIN record data entry workflow, message prior to accessing the system and part of each document created from a record. The 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 information is included in eBHIN's 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, assemble or aggregate IIHI*	eBHIN's policies and procedures require 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 eBHIN's 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.	

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 the system are incorporated in eBHIN's operating procedures and policies. End users are required 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 the data center to assure the information is safeguarded. **Encryption:** Existing protocols are to provide Virtual Private Network connections. **Authentication**: IKE VPN, pre-shared key for authentication **Assurance Level:** 2	eBHIN's operations manual and policies and procedures address safeguards required of eBHIN and network participants.	**Gap Area:** Language needs to be added to FAQ's 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, 2013. **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 eBHIN's 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.	eBHIN's operations manual and policies and procedures outline the auditing requirements	Language needs to be added to the FAQ's to describe accountability systems to the public, including incident 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, 2013.

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 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 was approved by Governor Heineman on May 18, 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. Phase two which includes sending immunization data from third party EMRs through NeHII to NESIIS is live with the pilot facility, Regional West Medical Center. York Community Hospital has offered to be the next in line for this functionality. The third phase of the project will allow for the query function to be sent to NESIIS so that the provider will be able to view the entire record of immunization data that is available through NESIIS and add that data automatically to his/her EHR.

Additional Functionality

NeHII invited stakeholders to participate in a Decision Accelerator to identify services which NeHII could provide and other opportunities. The Decision Accelerator (DA) sponsored by Alegent Creighton and conducted on February 6, 2013 had more than 80 participants who contributed to the discussions that

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

day. The NeHII team has developed a scorecard for ranking the tactical themes identified by the participants.

The services/functionalities which were most highly rated include:

- Partnership with HealthVault/Google for PHR
- Chart Auditing
- Discharge Process
- ACOs/High performance (narrow) network
- Pharmaceutical-patient eligibility for clinical trials
- Frequent flyers
- Leakage for ACOs

NeHII is exploring funding strategies for additional functionality/services identified through the Decision Accelerator. An automated alerting pilot is being developed with PACE (Program of All-Inclusive Care for the Elderly) which will be offered to other organizations seeking the admission, discharge and transfer (ADT) data so that the providers will have knowledge of a patient's admission to a hospital or emergency department. Initially, NeHII will monitor the ADT database to provide immediate notifications when a PACE participant presents at a hospital emergency department so that the primary care provider from PACE will be notified and initiate the follow-up care plan.

Support Health Information Exchange through Medicaid and Other State Programs

The Nebraska Department of Health and Human Services is actively supporting the development of health information exchange in Nebraska through both the Medicaid program and the Division of Public Health.

The Nebraska Department of Health and Human Services Division of Public Health has worked with NeHII to develop bidirectional exchange with the State's immunization registry (NESIIS). NeHII and the Division of Public Health continue to discuss public health reporting through NeHII to the State's syndromic surveillance and disease surveillance systems. The Division of Public Health also worked with Governor Heineman to include $500,000 in General Funds for FY 2013-14 and $500,000 in General Funds for FY 2014-15 for the support of health information exchange in the Governor's budget recommendations. Pending inclusion in the State's final budget, this funding can be used to leverage Medicaid's HITECH 90/10 matching funds from CMS. Dr. Joe Acierno, Chief Medical Officer, is a member of NeHII's Board of Directors.

At this time, Medicaid is collaborating with NeHII and eBHIN on Advance Planning Documents (APDs) requesting HITECH 90/10 funding to support HIE in Nebraska. This funding is intended to assist in development of HIE infrastructure and to help build provider participation. Pending inclusion in the State's final budget, the funding allocated for the support of health information exchange in the Division of Public Health's budget will be used as the State's portion of the HITECH 90/10 funding. Medicaid's EHR Incentive Payment program has seen participation far above original estimates; Medicaid hopes to leverage enhanced funding to help push HIE participation towards the "tipping point" which will enable long-term sustainability. The Medicaid Director, Viviane Chaumont, is a member of the NeHII Board of Directors.

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

Leverage Additional Funding Sources

Both NeHII and eBHIN are trying to leverage additional funding sources.

- Medicaid is collaborating with NeHII and eBHIN on Advance Planning Documents (APDs) requesting HITECH 90/10 funding to support HIE in Nebraska.
- NeHII applied for funding offered through the MITRE Organization to implement single sign-on with a health system to allow for the physician to pass seamlessly from their EMR to the HIE without signing on to the HIE. This is referred to as single sign-on functionality. MITRE offered this funding to support and enhance the use of HIE to offer PDMP services for physicians and providers. NeHII approached Mary Lanning Health Services which uses ePowerDocs in their emergency department as a pilot for this funding opportunity.
- eBHIN's partners have successfully applied for HRSA funding to support planning efforts and EHR deployment. Additional resources have been made available through the Regional Behavioral Health Authorities and private foundations.

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 (EMRLite)

- 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.
- The EMRLite product is being sunset by Optum 4th Q of 2013. CareTracker is being offered at the same price to these physicians to encourage a migration to the new and more sophisticated product.
- 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 in the following table:

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 $2.00 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 24 hospitals are participating in NeHI:

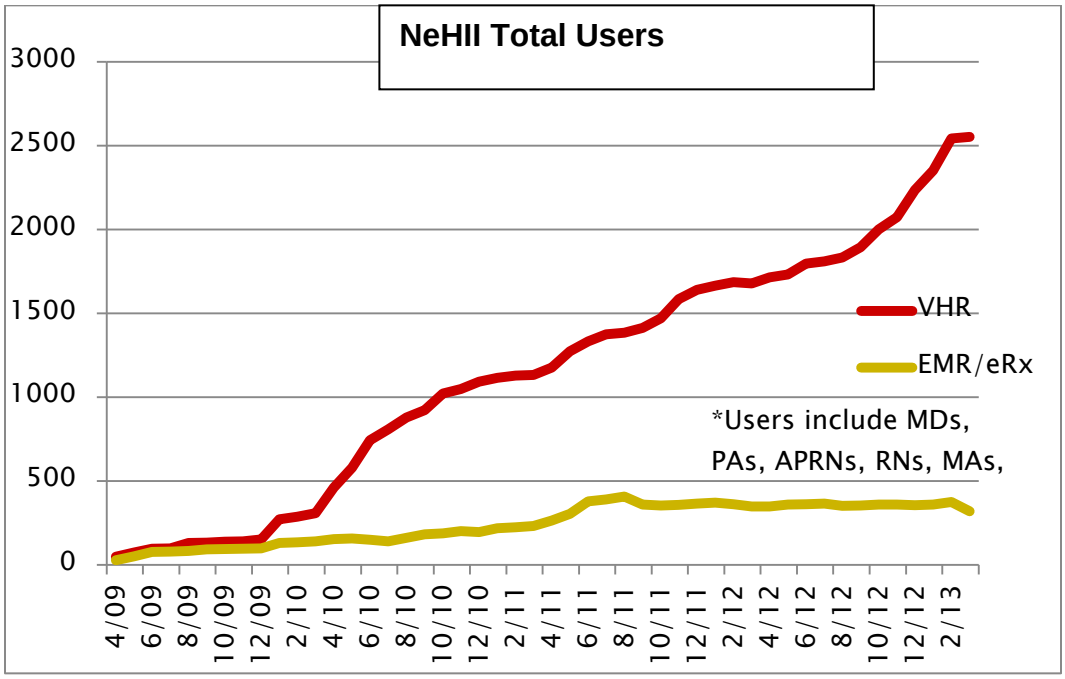
- Avera St. Anthony's Hospital – O'Neill)
- Avera Creighton Hospital – Creighton, NE
- Bellevue Medical Center - Bellevue, NE
- Bergan Mercy Hospital - Omaha, NE
- Children's Hospital and Medical Center - Omaha, NE
- Columbus Community Hospital – Columbus, NE
- Creighton University and Medical Center, 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
- Sidney Regional Medical Center – Sidney, NE
- York General Hospital – York, NE
- Cass County Health System – Atlantic, IA
- Community Memorial Hospital - Missouri Valley, IA
- Mercy Hospital - Corning, IA
- Mercy Hospital - Council Bluffs, IA

Additionally, Blue Cross Blue Shield of Nebraska is participating in NeHII.

Pending implementations include:

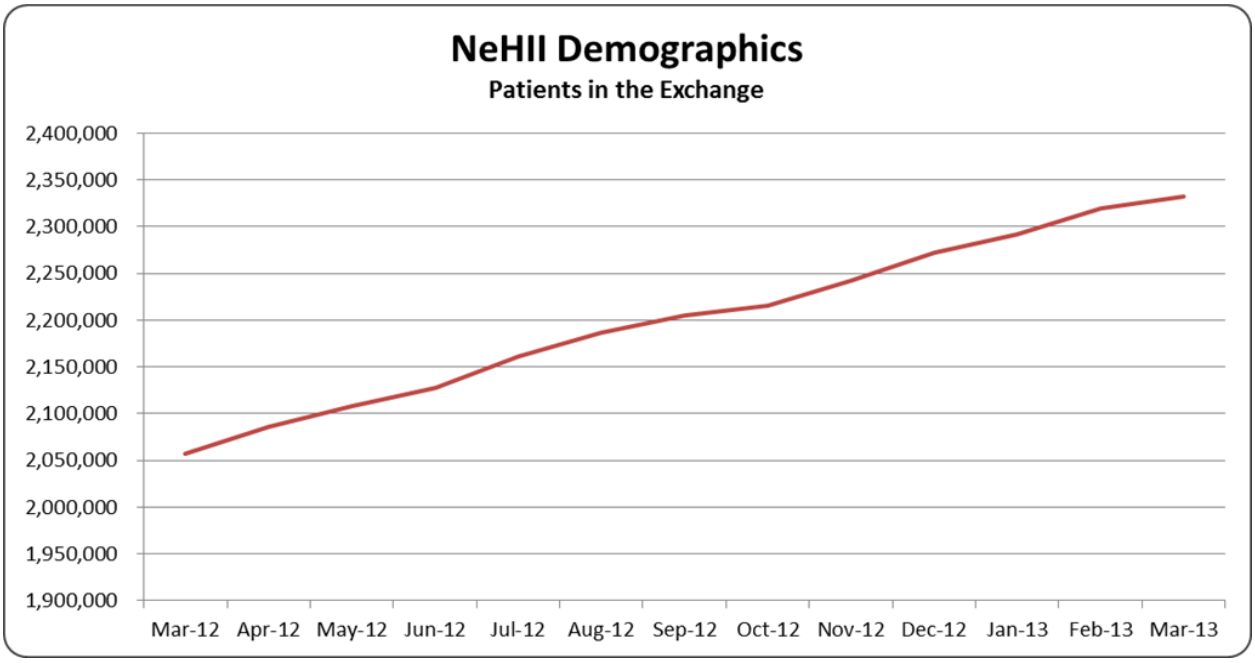
- Antelope Memorial Hospital (Neligh)
- Beatrice Community Hospital (Beatrice)
- Boys Town National Research Hospital (Omaha)
- Chase County Community Hospital (Imperial)
- Cherry County Hospital (Valentine)
- Community Hospital (McCook)
- Community Medical Center (Falls City)
- Community Memorial Hospital (Syracuse)
- Garden County Health Services (Oshkosh)
- Lexington Regional Health Center (Lexington)
- Montgomery County Memorial Hospital (Red Oak, IA)
- Myrtue Medical Center (Harlan, IA)
- Perkins County Health Services (Grant)
- Providence Medical Center (Wayne)
- Tri Valley Health System (Cambridge)
- Coventry Health Care of Nebraska.

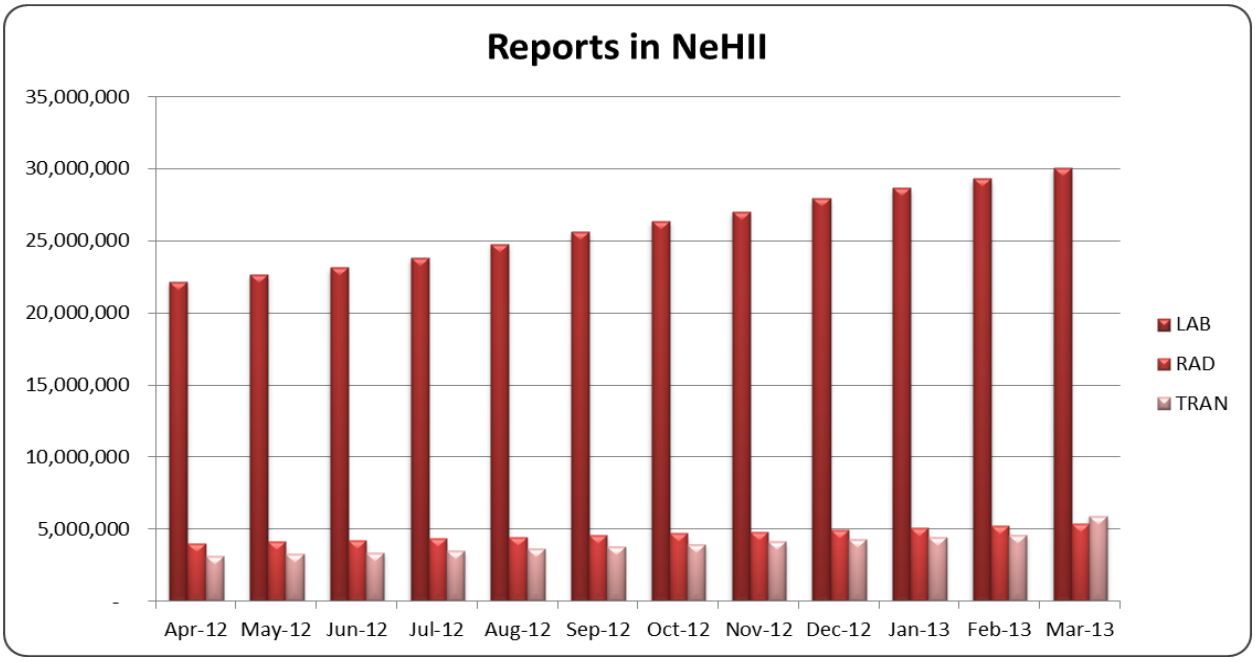
NeHII Users. The number of NeHII users has grown to over 2,900 total users in early 2013, up from 1,288 users in 2010.



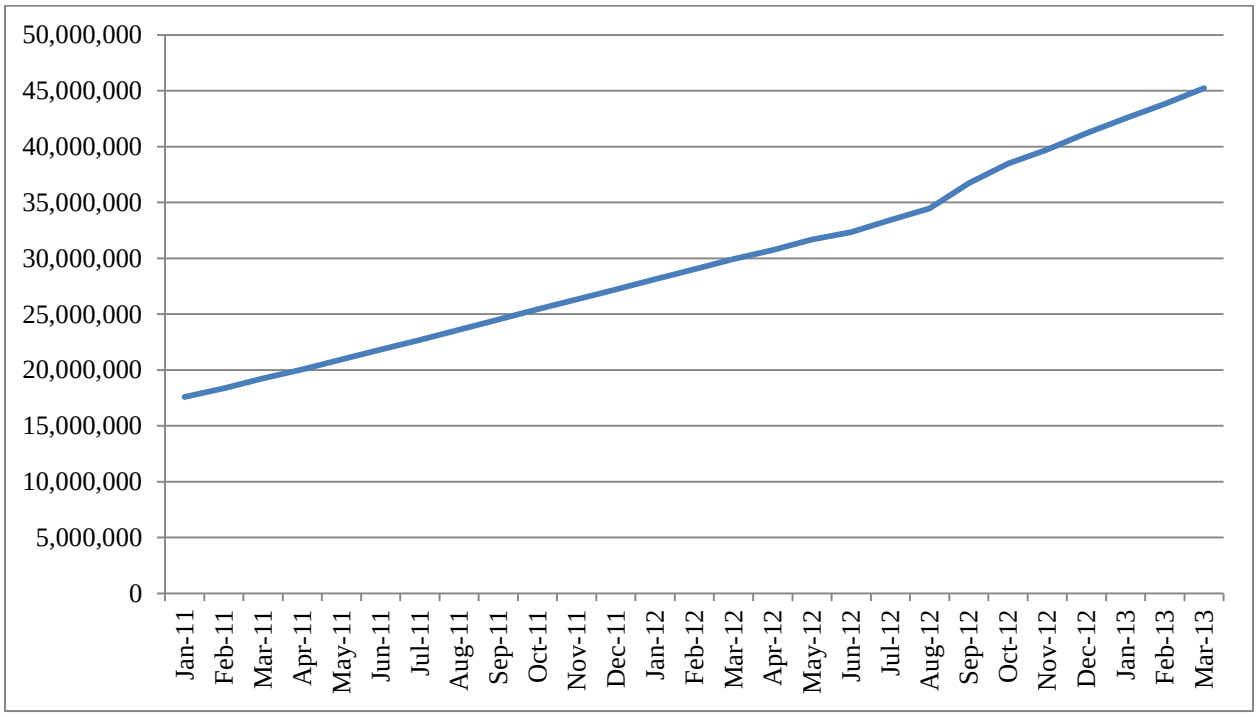
Utilization

Information available through NeHII and utilization of NeHII has also grown as show in the following graphs.





NeHII-Total Requests for Last 12 Months



Demand for Services

Demand for services is increasing. 156 physicians signed participation agreements in the first quarter of 2012, 67 in the second quarter of 2012, 131 in the third quarter of 2012, 81 in the fourth quarter of 2012 and 100 in the first quarter of 2013. 24 hospitals are currently participating in NeHII with 15 hospitals pending implementation.

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 collects license fees from its participants, there remained a $36,000 monthly operating deficit that was addressed in 4th quarter of 2012 in order to achieve long term sustainability. The larger health systems agreed to a temporary fee increase for the next two years to cover the gap between expenses and revenues until additional health systems are added which will alleviate the shortfall.

2012-2013 Priorities

In 2012 a detailed sustainability plan for NeHII was developed by the NeHII Finance Committee under the leadership of Ken Lawonn, the NeHII Finance Committee Chair. The plan identified six priority items. NeHII made significant progress in addressing these areas in 2012 and the first quarter of 2013.

The status of priority items follows:

1. **Payer Participation.** Blue Cross Blue Shield of Nebraska is a current NeHII participant. Coventry Health Care of Nebraska has signed the NeHII Participation Agreement. Upon project completion, Coventry will be able to leverage NeHII functionality to enhance care coordination and management efforts. Discussions continue with United Healthcare and Arbor Healthcare.
2. **State of Nebraska's Financial Support Including Medicaid Participation.** $500,000 in General Funds for FY 2013-14 and $500,000 in General Funds for FY 2014-15 for the support of health information exchange was included in Governor Heineman's budget recommendations. Pending inclusion in the State's final budget, this funding can be used to leverage Medicaid 90/10 matching funds. NeHII engaged Manatt Health Solutions to offer consulting services to Nebraska's Medicaid program to assist in writing the Advanced Planning Document (IAPD) to apply for the funding. At this time, Medicaid is collaborating with NeHII on Advance Planning Documents (APDs) requesting HITECH 90/10 funding to support HIE in Nebraska.
3. **Revised Pricing Structure with the HIE Vendor, Optum**. The agreement has been extended with Optum and a total of $195,000 per year reduction in monthly license fees was obtained. NeHII and Optum have engaged in additional negotiations in the first quarter of 2013.
4. **Expense Reduction for NeHII Operational Support.** Deb Bass was hired as the Chief Executive Officer effective August 1, 2012 thus eliminating her consulting fees. Future employee hiring will occur once the managed services agreement has been renegotiated with Harbinger Partners Inc, the consulting company that offers the managed services consultants.

5. **Establish Strategy for Future Financing with Mutual of Omaha Bank.** A $1.2 million line of credit was finalized with Mutual of Omaha Bank. This credit line establishment will allow NeHII to reduce its account payables to the various vendors until the increased license fees and balanced budget come into effect in 2013. Methodist Health System, Alegent Creighton, and BlueCross BlueShield of NE served as the guarantors of the loan.
6. **Create Consulting Revenues Through HIO Shared Services.** NeHII has launched a subsidiary for profit company called HIO Shared Services and has entered into an agreement with the State of Wyoming to establish HIE in Wyoming which will provide consulting revenues for NeHII. Wyoming Medical Center signed a participation agreement on March 27, 2013 which will make them the first hospital to go live on query model HIE in the state of WY through HIO Shared Services. The implementation of the HIE framework will begin immediately.

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 Shared Behavioral Healthcare record that, with consent, can be made available to behavioral health providers in Network and by DIRECT secure messaging for the NeHII Network providers. 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 HIE 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 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 6 • Organizational work and potential deployment in Regions 3 & 4 • Organizational work and potential deployment in Region 2 and 1 • Governance implementation	Year 2 -3 Year 3-4 Year 5 Ongoing as stakeholders join the network
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--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.
4) ACO organizations with behavioral health referral networks.

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) **Data Management Contracts:** 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 as well as other stakeholders such as ACO's.Operating sustainability will be reached accordingly. The cost is based on the gap funding needed for operations and the build the funds needed for equipment replacement and growth.

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	Began June 2012 – Complete by May 2015
	Direct Secure Messaging	1 organization 1 Provider	Pilot Complete by December 2013
Region 6	HIE	15 Organizations 315 Providers	Began June 2012- Complete by December 2013
Regions 2, 3 & 4	HIE	31 Organizations 100 Providers (Estimated)	HRSA Planning Grant to determine scheduling
Region 1	HIE	8 Organizations 31 Providers	Could begin June 2014

1) Ratio of end user to provider is 7 to 1. The 645 providers licensed on the system represent 34,515 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 Actual	2012-2013 Projected	2013-2014 Projected	2014-2015 Projected	Total
Hosting/Maintenance Fees	0	0	165,435	280,343	339,000	808,603
Access Fees	0	0	92,013	86,500	86,500	212,917
Licensing – One Time	0	71,052	58,407	162,620	184,020	952,643
Reporting & Coordination Services	0	0	624,777	165,000	195,000	465,000
Contract Fees	213,179	342,774	120,906	320,685	256,550	1,590,533
State MIS Contract	0	0	0	175,000	250,000	425,000
Grants	1,147,307	454,228	767237	505,485	41,670	3,270,663
Contributions	128,840	0	0	0	0	128,840
Other/Investments	9,341	1,100	18,000	15,000	15,000	54,341
Total Income	1,498,667	869,084	1,846,775	1,710,633	1,367,740	7,908,540
Expense Category						
Personnel	271,607	433,308	564,324	551,917	538,590	2,329,872
Travel/Meetings	5,740	16,724	15,889	16,245	16,615	70,036
Hardware/Software	549,770	71,052	21,800	202,390	204,020	1,696,750
Maintenance Fees	0	0	98,721	154,034	179,770	455,057
Consultant Contracts	288,727	101,814	295,045	126,064	95,675	918,786
Implementation Fees	0	113,659	633,321	605,337	256,550	1,658,256
Indirect	66,149	44,298	52,044	54,646	48,780	252,933
Total Expense	1,181,993	780,855	1,681054	1,710,633	1,340,000	7,381,690
Net	316,674	88,229	165,721	0	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 five of the six regions of the state. Unfortunately, the capacities and reserves of the individual providers vary 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;
- 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 2013, NeHII now has over 2,900 users up from 1,288 on Dec. 31, 2010. 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. With the proposed Medicaid IAPD application in progress to obtain 90/10 HITECH match funds from CMS, NeHII plans to implement an additional 45 physician practices.

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 2013, over 1,000 physicians working with Wide River TEC are live on a certified EHR and 365 have already met the requirements for stage one meaningful use within the Medicare EHR Incentive Program. Beginning in April 2013, physicians pursuing the Medicaid EHR Incentive Program can achieve meaningful use incentive funds, which should accelerate the state totals in the upcoming months.

Participation of Hospitals

Description: The success of Nebraska's statewide health information exchange requires widespread participation by hospitals. 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 2013, 24 hospitals in Nebraska and Iowa are NeHII participants. An additional 15 hospitals have signed participation agreements and are expected to go live in 2013 and early 2014. When these hospitals go live, approximately 56%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 Optum/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.

With the proposed Medicaid IAPD application in progress to obtain 90/10 HITECH match funds from CMS, NeHII plans to implement an additional 7 major hospitals and 35 CAHs.

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, LTC, home health care providers and one payer have begun using NeHII. Independent physical therapy clinics and Coventry will be users soon. NeHII is continuing to explore opportunities to expand services to other providers including independent labs once an acceptable license fee model is identified. With the proposed Medicaid IAPD application in progress to obtain 90/10 HITECH match funds, NeHII plans to implement 7 FQHCs.

eBHIN will play an important role in connecting behavioral health providers in Nebraska. The eBHIN HIE went live in Southeast Nebraska (Region 5) and in the Panhandle (Region 1) in the spring/summer of 2012 and is now expanding to the Omaha (Region 6) area. Regions 2, 3, and 4 received a HRSA planning grant in the spring of 2012 to plan future integration with eBHIN. With that planning concluded, we are now in the scoping phase for the interoperability work required. A statement of work will be developed to serve as the basis for fund development work required to execute the work 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 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 since its existence in 2009. Roughly 10% of behavioral health consumers opt-out of eBHIN, a very low number given the sensitivity and higher privacy standard for the data.

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 has developed a Consumer Awareness Campaign entitled 'Connect the Docs' with a variety of media offerings. including a YouTube video available on the NeHII consumer microsite www.connectnebraska.net.. eBHIN has involved consumers involved in development of consent, web page, and FAQs.

The consumer education brochure was updated to reflect the additional purpose of public health reporting and incorporate the branding campaign that was completed in 2012 by the Consumer Advisory Council.

eBHIN has involved consumers involved in development of consent, web page, and FAQs. More educational materials need to be developed about the impact of partial records, and why it is important that complete records be available in any treatment setting.

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, Optum/Axolotl, to perform annual security assessments, including intrusion detection and data center audits, and to supply those results to NeHII on an annual basis. Optum/Axolotl has also agreed to provide monthly snapshots listing the NeHII database backups performed. 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 and that each disclosure made with patient consent be accompanied with a prohibition on redisclosure notice. eBHIN has 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 2013, 24 hospitals in Nebraska and Iowa are NeHII participants. An additional 15 hospitals have signed participation agreements and are expected to go live in 2013 and early 2014. When these hospitals go live, approximately 56% of the state's hospital beds will be covered by NeHII. As of April 2012, NeHII now has over 2,900 users up from 1,288 on Dec. 31, 2010.

NeHII's vendor, Optum/Axolotl, also has a proven track record. Optum/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. TouchWorks

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 has developed a sustainable business plan. Funding from the State HIE Cooperative Agreement program has allowed NeHII to accelerate implementation and solidify its revenue stream from licensing fees. NeHII is working with Medicaid to write an IAPD funding application to obtain 90/10 HITECH match funds to support the increased adoption of NeHII across the state and the technical functionalities of the HIE 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. Providers can subscribe to NeHII's Virtual Health Record (VHR) for $20 per provider per month.

Dependence on a Single Health Information Exchange Vendor

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

Potential Impact: Optum/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: Optum/Axolotl has been thoroughly vetted. NeHII selected Optum/Axolotl using a competitive bid process. In addition, NeHII's contract with Optum/Axolotl includes protections such as a termination clause favorable to NeHII.

Optum/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.

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 Lavon Heidemann 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.

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, Chief Executive Officer (CEO) of NeHII is responsible for managing the implementation of the project. Connie Pratt oversees the technical implementations with the assistance of two project managers and one full-time HIT trainer. Day-to-day operations of the exchange, including adoption activities, are the charge of Deb Bass, CEO of NeHII. Deb Bass is responsible for recruiting new providers and participants into the HIE and resolving issues as they arise. NeHII employs additional resources as needed to efficiently operate the exchange.

NeHII has a managed service agreement with Bass & Associates to operate the HIE. Six (6) full time consultants operate under this agreement. Deb Bass, CEO is the only employee of NeHII. There are plans to transition additional Bass & Associates consultants to full time NeHII employees in the next 12 months.

Scope of work: NeHII's managed service agreement utilizes 6 consultants to manage the day to day operations of the HIE.

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

Budget breakout (salary, travel): The managed service agreement 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 & Associates was a competitive bid in 2007.

NeHII is providing management of the statewide health information network. Key staff are identified on the following pages.

Technical Operations

- Deb Bass (Chief Executive Officer)
    - Full Time (100%)
    - Day to Day Operations Management
    - Adoption Strategies
- Sara Juster (Privacy Officer)
    - Part Time
    - Day to Day Privacy Activities
- Connie Pratt (Program Manager)
    - Full Time
    - New Installation Project Management
    - Management and Support
    - Training and Sales Support
- John Gorman (Project Manager)
    - Full Time
    - New Installation Project Management
    - Management and support
    - Training and Sales Support
- Lianne Stevens (Project Manager)
    - Full Time
    - New Installation Project Management
    - Security Officer
    - Management and support
    - Training and Sales Support
- Anne Dworak (Clinical Strategist)
    - Full Time
    - Training
    - Physician Education
    - Workflow Development
    - Physician Engagement
- Jessica Libra (Data Analyst)
    - Full Time
    - Data analytics
    - User Identification and Provisioning
    - Reporting
    - Opt outs
- Jaime Katelman (Executive Assistant)
    - Full Time
    - Admin support
    - Letters and communications
    - Marketing support

Project and Operational Responsibilities				
	Lianne	John	Connie	Jessica
CPI Maintenance				
Merges				X
Replication Errors			X	
Potential Merges				X
Cyber Security				
Partnerships	X			
Risk Assessment	X			
Insurance with SilverStone	X			
Direct		X		
Hospital Implementations				
Avera (St. Anthony's and Creighton)			X	
Beatrice	X			
Boys Town (limited)		X		
Cass County	X			
Chase County	X			
Community Memorial - McCook		X		
Montgomery County	X			
Providence Medical Center			X	
York			X	
Projects				
Blue Button	X			
Payer Access Pilot	X		X	
Single Signon			X	
Immunization Gateway		X		
eBHIN Direct pilot		X		
ONC Reporting	X			
System Operations				
EMR Lite Support			X	
Deleting clinical results			X	
System configurations			X	
Unidentified Reports			X	
JTRAC			X	
Third Party EMRs				
Implementations		X		
Maintenance		X		

Project and Operational Responsibilities				
	Lianne	John	Connie	Jessica
Monthly Tasks				
Security Reports	X			
Board Status Report	X			
Monthly statistics for generic presentation slides				X
Weekly Tasks				
Status Reports	X			
Status Agenda	X			
Statistics				X
Fact Sheet				X
Opt out / opt in letters				X
Daily Tasks				
Userids				
Define and set up				X
Reset passwords				X
Daily Merge Reports				X
Opt outs/opt ins				X
Consumer calls				X

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 meetings.
- 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.

eBHIN

eBHIN's staffing plans including project managers and other key roles are described below:

Existing Staffing Resources		
Position Title	**FTE**	**Description of Role**
Executive Director	1.0 All Years	Responsibilities for marketing and user recruitment, governance set-up, and overall management of the organization. The Executive 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 Executive 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.
Development Project Manager	1.0 All years	Work in collaboration with system administrator, the application vendors and the Executive 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 All years	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.
Operations Manager	1.0 Year 2 & 3	Preparation of financial reports and budgets; invoicing and collections oversight; contract and HR administration; operating policies compliance and communications materials development.

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 2013 will focus on three 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 that have planned implementations in 2012 through 2014. 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 three new hospitals in the second quarter of 2013, followed by beginning implementations on an additional two hospitals per quarter through 2013. Implementation is defined as receiving a minimum of ADT data through a production feed. With the Medicaid proposed IAPD application for 90/10 HITECH funding, the plan is to support an additional seven major hospitals, 35 CAHs, 45 physician practices and seven FQHCs.

NeHII's second objective is to continue the adoption of physicians and other healthcare providers as users of NeHII. A user is defined as having the ability to send or acquire care summary information via the NeHII interface. NeHII currently has over 1200 physicians who have this capability, and plans to grow by 25% in 2013, adding 100 physicians per quarter through the use of query, clinical messaging, and Direct based exchange.

NeHII's final objective in 2013 is to complete special projects as needed to allow providers to meet Meaningful Use objectives and to encourage greater adoption by Nebraska providers. Specifically, NeHII will continue the implementation of Phase 2 of the immunization registry project 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 through bi-directional query exchange to a third party EMR, in 4th quarter. NeHII will begin project planning for eHealth Exchange in the 4th quarter. NeHII is researching implementation of CCD delivery to patients through a PHR solution and the use of Direct.

Immunization Gateway Implementation: NeHII will serve as the universal portal to report the immunization data and also allow for the sharing of the immunization data with all providers. Rather than the State incurring the cost of developing individual interfaces to all the various providers and hospitals which requires development, maintenance and on-going support costs, NeHII will fill that role. This functionality is required to meet meaningful use requirements and qualifies for 90/10 HITECH funding. The cost to support this functionality will be included in the IAPD request for funding.

As noted the implementation of the immunization gateway is a three phased project. Phase one involved sending immunization data from the Axolotl EMRlite users through NeHII to the NESIIS immunization registry and is in production. Phase two includes sending immunization data from third party EMRs through NeHII to NESIIS and is live with the pilot facility, Regional West Physician Clinics. Boys Town is going live in May 2013. The next implementation will be York General Health Care Services. Third phase of the project will allow for the query function to be sent to NESIIS and the provider will then view the entire record of immunization data that is available through NESIIS in a third party EMR.

Direct Services Implementation: One of the requirements from the ONC is to implement the use of Direct services to hospitals and providers across the State that are not capable for a variety of reasons, to participate in query model exchange that NeHII offers. NeHII also serves as the Health Information Services Provider (HISP) for the state of Nebraska and therefore the ONC tracks the use of Direct through the various HISP organizations that are funded by the HIE Cooperative Grants. NeHII team members developed a variety of use cases, a service offering script and identified a pilot project to implement

Direct centering on Pathology Services located in North Platte, NE customers. The pilot project called for using secure email exchange of information rather than fax services. Dr. Delane Wycoff, a NeHII Board Member and partner in Pathology Services offered to participate in the implementation of the pilot project and assisted in the identification of pilot partners.

The use cases for Direct included:

- Physician referrals from NeHII participants to VA Hospital
- Physician referrals between NeHII providers to those providers outside the NeHII network
- Patient information sharing of 42 CFR part 2 ePHI between eBHIN providers and NeHII providers
- Patient information sharing between providers and patients via a personal health record
- Patient information sharing across state lines
- Use by independent labs to send lab results to providers or entities
- Any fax or snail mail transmission of ePHI

NeHII Decision Accelerator Strategic Planning Process

NeHII conducted a Decision Accelerator strategic planning session on February 6, 2013. The goal of the Decision Accelerator was to enlist the input and continued support of current NeHII participants and other healthcare professionals from across the state to determine future strategic direction for the statewide health information exchange in support of Meaningful Use and data analytics.

A scorecard was developed based upon stakeholder input gathered during that session. The scorecard can be found on the following pages.

NeHII	Decision Accelerator Opportunities Scorecard February 6, 2013	Evaluation Categories						
		Revenue Generation Opportunity	Client Demand/ Request by Market	Cost to Procure (HR, Fees, Development)	Availability of Technology	Market Competition	Total	
	Weighting	20%	20%	20%	20%	20%		
Note: Many categories will overlap from group to group	Description	3=High 2=Small 1 = Neutral	3= Use Case 2= General Interest 1= Unknown	3= Low - Less $5K 2 = Medium - $5K-$20K 1= High - $20K+	3= Existing functionality 2= Requires add'l vendor solution 1= Product development	3= Provided only by NeHII 2= Emerging Products 1 = Existing Products		NOTES
Current Technology								
Advanced Directives	Pull Advance Directive information into VHR	1.5	2.38	2.63	2.77	1.9	2.236	
Mobile Devices	Send notification messages to mobile devices	2	2.16	1.75	2.1	1.57	1.916	Example: Notify a physician of a hospital admit or discharge
CCD Exchange	Pull and display CCD records in the VHR and push to requesting providers	2	2.46	1.87	2.55	2	2.176	
Partnership with HealthVault/Google for PHR	Create a Personal Health Record for patients	2.08	2.25	1.75	2.6	1.63	2.062	Allow a patient to receive personal health information from NeHII
Portal - Patient (transport mechanism)	Enable patients to receive health information providers (through Direct) into their PHR	2.08	2.3	2.25	2.7	1.81	2.228	
Imaging	Provide a vendor neutral community imaging portal to host radiology images	2.3	2.23	1.25	2.4	1.91	2.018	Could be a potential cost reduction for facilities, archiving capabilities
Revenue Focus								
Registries - Clinical	Develop patient registries for access by payers/providers	2.33	2.5	1.77	2.44	1.3	2.068	
NwHIN	Connect with E-health exchange for national exchange of clinical data	1.54	2.5	1.22	2.1	2.5	1.972	Could be used across state lines as well as to private HIEs
Quality Reporting	Support ACOs, PCMHs, payers' P4P in developing and running clinical quality reports.	2.23	2.42	1.33	1.65	1.18	1.762	NeHII could receive a percentage of the payment to the physicians, payers to pay for STAR and HEDIS reporting
Medical Banking	Pay by transaction	1.72	1.16	1.71	1.63	1.7	1.584	Example: pay co-pay electronically via smartphone
Secondary Use of Data	To use de-identified data for research purposes, ability to gather information for statistical purposes	2.31	2.38	2.3	2.11	2	2.22	
Quality Management Consulting Services	Provide expertise in extracting information	2.15	1.5	2.14	1.6	1.44	1.766	
Public Health Reporting	Provide syndromic surveillance and electronic lab reporting	1.75	2.75	2	1.5	1.77	1.954	Nebraska: DHHS Other states: Ability to provide information from NE about a specific individual
Alerts - Public Health to NeHII to display in VHR	Ability to display potential 'outbreak' on the VHR	1.25	1.66	2	1.28	2.66	1.77	
Re-admissions	Provide listing of patients being re-admitted within 30 days of discharge	1.91	2.58	2	2.25	2.33	2.214	Patient listing of re-admissions within a community, across the state and across state lines
Fraud prevention for eligibility	Prevent fraud	1.75	1.41	2.42	1.5	235	48.416	Example: Persons A using person B's insurance card
Expansion of Care Team	Provide access to NeHII	2	2.54	2.88	2.9	2.9	2.644	Increase NeHII participation by allowing ambulance providers, physician therapists, nursing homes, etc access to
Chart Auditing	Notification of inappropriate access to patient information	1.54	1.9	2.28	2.77	2.66	2.23	
Transition of Care - Information Management	Create CCD document	1.86	2.16	1.88	2.25	2.22	2.074	
Discharge Process	Management of discharge to decrease re-admission rate	1.91	2.08	2.16	2.37	2.22	2.148	Project RED = An initiative developed to test strategies to improve the hospital discharge process in a way that promotes patient safety and reduces re-hospitalization rates.
ACOs								
Population health management		2.25	2.36	1.55	1.87	1.44	1.894	Example: Based on sex, age. clinical results, etc
Exchange of data - episode of care/bundled care	Measure quality of care based on an episode of care and support episode based payment	2	1.91	1.12	1.5	2	1.706	Example: Hip replacement - report of initial onset through physicial therapy

NeHII	Decision Accelerator Opportunities Scorecard February 6, 2013	Evaluation Categories						
		Revenue Generation Opportunity	Client Demand/ Request by Market	Cost to Procure (HR, Fees, Development)	Availability of Technology	Market Competition	Total	
	Weighting	20%	20%	20%	20%	20%		
Note: Many categories will overlap from group to group	Description	3=High 2=Small 1 = Neutral	3= Use Case 2= General Interest 1= Unknown	3= Low - Less $5K 2 = Medium - $5K-$20K 1= High - $20K+	3= Existing functionality 2= Requires add'l vendor solution 1= Product development	3= Provided only by NeHII 2= Emerging Products 1 = Existing Products		NOTES
Claims & clinical data integration - commercial, Medicare, Medicaid	Leveraging claims data to identify and manage cost of care	2.3	2.72	1	1.25	2	1.854	
PCMH	Care coordinators having enhanced access	2.16	2.54	1.25	1.5	1.44	1.778	
High performance (narrow) network	support narrow networks through quality data	1.9	1.7	2.28	2.57	1.87	2.064	Evidence-based protocols, value-based treatment
Interoperability							0	
Pharmaceutical - patient eligibility for clinical trials	Determine potential patients from NeHII	2.27	1.75	2.83	2.87	2.44	2.432	- Example: Problem lists, med history, demographics - Secondary use, consent, policy changes
Medical Cost Trend								
Frequent flyers	Report on high users of health services	2	2.27	2.85	2.75	2	2.374	
Leakage for ACOs	Patient tracking - using ACO providers or not	2.09	2.36	2	2.57	1.77	2.158	

Milestones

Hospital Implementation

- Implement 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

Provider Participation

- Sign up 100 new provider participants in 2nd quarter
- Sign up 100 new provider participants in 3rd quarter
- Sign up 100 new provider participants in 4th quarter

Immunization Registry Project

- Continue implementation of Phase 2 of Immunization Registry Project in 2nd quarter
- Begin implementation of Phase 3 of Immunization Registry Project in 4th quarter

PHR Connectivity

- Develop plan for PHR Connectivity Project through CCD delivery in 3rd quarter

Last Updated: April 26, 2013

Facility	Start Imp Date	Point Person	Notes
Antelope Memorial Hospital Neligh	2012-09	Merry Sprout	**3/14** - Sent Readiness Assessment and VPN documents **7/1** - waiting for Kevin to get an interface engine - suggested MIrth. Installing new software and should be ready for NeHII implementation in September **8/24** - Contacted Kevin Trease and they are ready to implement. I sent the latest HL7 specs, Readiness Assessment and VPN connectiivty documentation. **11/26** - talked to Merry Sprout who requested the continuation letter to encourage individuals to get the paperwork completed **1/18 -** Received an update from Merry Sprout. They are working on a HIPAA Security Audit and will not have assessment and VPN forms available until after the 30th. **3/15** - Kickoff mtg scheduled for 3/25. Will also completed Readiness Assessment and VPN form while onsite. **4/17** - Received Readiness Assessment and waiting for SOW. Anticipate implementation to begin on 4/22.
Avera Creighton Hospital Creighton	2012-09	Mark Schulte	Will send Readiness Assessment and VPN document in late June **6/13** - Sent documentation to Kathy Quinlavin **8/23** - Received email form Mark Schulte that both organizations (Avera Creighton and Avera St. Anthony's is ready to move forward. Scheduling kick off meeting for September. **9/26** - Held kick-off meeting **10/15** - weekly status meetings in place with a plan to go live in mid-December **11/30** - Will go live on ADT the week of December 3 **12/17** - Live on radiology **1/16** - Live on labs **Note:** Transcriptions will not be sent for at least 6 months due to lack of software

Avera St. Anthony's Hospital O'Neill	2012-09	Ron Cork	Will send Readiness Assessment and VPN document in late June **6/13** - Sent documentation to Kathy Quinlavin **8/23** - Received email form Mark Schulte that both organizations (Avera Creighton and Avera St. Anthony's is ready to move forward. Scheduling kick off meeting for September. **9/26** - Held kick-off meeting **10/15** - weekly status meetings in place with a plan to go live in mid-December **11/30** - Will go live on ADT the week of December 3 **12/17** - Live on radiology **1/16** - Live on labs **Note:** Transcriptions will not be sent for at least 6 months due to lack of software
Beatrice Community Hospital	2012-11	Rex Riley	**7/27** - Sent Readiness Assessment and VPN documentation, sample project plan and kick off meeting agenda. **8/ 13** - Talked to Sebastian Sullivan and they will be ready to begin implementation in November **11/7** - introductory call for new CIO, Rex Riley **12/3** - sent HL7 specs, LOINC coding spreadsheet, etc to Rex Riley **1/10** - conducted Kickoff Meeting w/Anne Dworak, Connie Pratt **2/15** - ADT message sample sent for mapping **2/21 -** ADT validation started**;** LOINC code spreadsheet completed **3/11 -** LAB message sample sent **4/15** - All feeds are being sent to test. A tentative go-live date will be set the last week of April. **4/23** - ADT data feed Go Live is scheduled for 5/13
Boys Town Research Hospital Omaha	2012-11	Ann Ducey	**8/24** - confirmed with Ann Ducey that they will move forward in October. Sending Readiness Assessment and VPN connectivity form **10/3** - received implementation documents **11/26** - held kick off meeting **12/3** - weekly meetings scheduled **12/7 -** Working on getting VPN live and ADT testing to begin. **12/14 -** Completed VPN and look to begin ADT testing at beginning of year. **1/18** - Began ADT and Lab testing this week **3/15** - ADT & Lab Data feed go-live pushed back to 5/1 due to BT operational delays.

Cass County Health System Atlantic, IA	2012-08	Steve Stark	**8/28** - Received Readiness Assessment and VPN **10/9** - Held kick off meeting **10/14** - weekly status meetings are scheduled **12/3** - live with ADT with clinical results following the week of December 17 **12/18** - Received RAD sign-off **1/20** - LAB and TRN testing in progress; NeHII brochure distribution to patients started **1/25** - RAD data feed move to production scheduled for January 28 **1/28** - RAD data feed live in production **3/04** - LAB data validation complete; ready for signoff **3/19 -** Cass County is live on NeHII
Chase County Community Hospital Imperial	2012-12	Jennifer Harris	**2/21** - Received Readiness Assessment **3/28** - Received VPN document **8/20** - Conference call with Jennifer Harris and Dustin (IT person at Chase County). They are ready to go if they do not have to pay duplicate interface fees. Blake Heidecker should get back to Deb on 8/24. **9/6** - Talked to Jennifer Harris and they are ready to move forward-paperwork complete **10/31** - Kick off meeting complete **11/8** - Working on VPN connectivity **01/21** - received email from Jennifer Harris that decision is to delay NeHII implementation until Centriq is installed in Fall 2013
Columbus Community Hospital Columbus	2012-05	Cheryl Tira	Readiness Assessment and VPN documents complete and sent to Axolotl **5/15** - NeHII team going to Columbus for kick-off meeting **5/18** - Sample ADT information has been sent and mapped. Lab information sent on Friday and will be mapped by 5/22. **6/4** - Sent sample radiology reports **8/20** - They will go live in September **9/13** - Will go live in September (ADT is currently live) **10/8** - Columbus is live on NeHII
Cherry County Hospital Valentine	2013-05	Brent Peterson	Will send Readiness Assessment and VPN document in May to Brent Peterson **5/29** - Sent VPN connection and Readiness Assessment form to Mr. Peterson **7/28** - Talked to Brent Petersen and they have not implemented their EMR yet **12/1** - sent extension letter **3/19** - Talked to Brent Petersen and they probably will not begin implementation until first quarter 2014

Community Hospital McCook	2012-09	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. **7/13** - The interface analyst has been out for surgery and will be out again in August. I am sending Lori documentation for the CCD document. I have changed the date to September as she said her interface analyst would be available then. Also sent questionnaire to send the CCD document **12/3** - Talked to Lori Beeby, sent kick off meeting agenda and asked for a kick off meeting the week of 12/17 **1/21** - Talked to Lori Beeby. She is tentatively looking for a date in February **3/4** - Kick off meeting is scheduled for 3/27-3/28 **3/28** - Had the kick off meeting. Implementation will probably begin during the summer of 2013
Community Medical Center Falls City	2013-10	Brian Evans	Due to implementation of NextGen, this facility will not move forward until second quarter 2013 **7/11** - Received email from Brian Evans that implementation will begin in October, 2013 **12/1** - Sent extension letter **3/19** - Exchanging voice mails
Community Memorial Hospital Syracuse	2013-04	Matt Steinblock	Numerous phone calls and email. They want to implement now but doesn't want to pay double for extra interfaces. Healthlnad only allows for 4 interfaces and charges $1750 for each additional interface. If they interface with NeHII now, they will have to pay an additional $7,000 when they upgrade in addition to the $12,000 **10/1** - Matt talked to Deb about a fee structure to hold their place for implementation **12/1** - sent extension letter **3/5** - Talked to Matt Steinblock and they will be ready to implement third quarter 2013
Garden County Health Services Oshkosh	TBD	Dee Dee Waltman	**9/20** - Will be doing a demo tomorrow **11** - Deb talked to Dee Dee **12/1** - sent extension letter **3/8** - Talked to Dee Dee Waltman and sent paperwork to begin implementation **4/19** - Deb Bass making a NeHII presenation

Lexington Regional Health Center Lexington	TBD	Robb Hanna	**11/17** - Sent paperwork and generic project plan **10/1** - Received email from Robb Hanna asking for contact information for someone who has McKesson Paragon and is on NeHII. I sent information for Michelle Musgrave from Mary Lanning **12/1** - sent extension letter **2/18** - Left voice mail for Robb Hanna **3/4** - Left voice mail for Robb Hanna **4/22** - Left voice mail and sent email to Robb Hanna
Montgomery County Memorial Hospital Red Oak, IA	2012-08	Ron Kloewer / Tammy Philby	**10/12** - Meetings are scheduled every two weeks. Client is deciding if they want to install a new integration engine **11/29** - sent email requesting status update **1/08** - received email from Tammy Philby letting me know they will be sending date availability for a call soon **2/12** - Anne Dworak and Lianne Stevens met with Ron Kloewer, CIO and Tammy to discuss physician engagement and NeHII implementation; Ron in final negotiations with EMR vendor **2/22 -** final agreement with EMR vendor completed; awaiting word from hospital on next step **4/15** - ready to move forward with the implementation process **4/18** - Kickoff meeting is scheduled for 5/08
Myrtue Medical Center Harlan, IA	2013-02	David Sirek	**7/20** - Received Participation Agreement **8/18** - They plan to begin implementation in the first quarter of 2013. **2/23 -** Notified by CIO David Sirek that implementation cannot start until August due to EMR upgrade
Perkins County Health Services Grant	2012-12	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. **7/16** - After talking to Jennifer Baumgartner, I will be contacting Blake Heidecker as Perkins will be upgrading early in 2013 to ensure there will not be double charges. **11/21** - Received VPN form **1/9** - Resent Readiness Assessment **1/15** - Demo and NeHII Annual meeting update scheduled for February 26 **3/2** - They will not upgrade until they go live on the Centriq version of Healthland which will

Plainview Area Health System Plainview	Unknown	Rick Gamel	**5/1** - Contacted Rick Gamel about implementation. He indicated that everything is handled to Omaha. I have talked to Susan Lorkovic at Alegent. **5/17** - After reviewing everything with Susan Lorkovic, I will be contacting Rich the week of May 21. Plainview can implement on NeHII if they have the staff and funds to do so. **11/30** - Sent an email to Rick to get a status as to a decision. Plainview has decided not to move forward since they will be integrated on the Alegent EPIC system.
Providence Medical Center Wayne	2012-10	Weston Lundgren	**4/13** - Anxious to get started with NeHII. Sending Readiness Assessment and VPN documentation and will contact mid-May. **6/4** - Sent emails with availble times for Friday, June 8 **6/8** - They have decided not to begin implementation until October, 2012. I will be contacting them in September. **10/15** - Held kick off meeting and presented to the Board of Directors. Will be scheduling weekly meetings **11/12** - working on VPN connectivity - complete **1/22** - Introductory meeting with NextGen **3/15** - SOW complete. **4/12** - Interface costs from NextGen is high. Providence must go to Board for approval.
Sidney Regional Health System 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 **7/12** - Began weekly implementations meetings **8/20** - ADT, lab and radiology results look good. Waiting for transcription reports. Tentatively plan to go live the third week of September. **9/11** - Will go live with ADT on 9/24 and clinical results on 10/2 **10/10** - Sidney Regional Medical Center is live on NeHII
TriValley Health Center Cambridge	2013-06	Scott Stransberg	**6/4** - Will be implementing their EMR in November 2012. Implementation postponed until after November. **6/30** - Their implementation will not begin until at least second quarter, 2013 **12/1** - Extension letter sent **3/19** - left voice mail for Scott Strasberg **4/22** - left voice mail and sent email to Scott Strasberg

York General Hospital York	2012-09	John Temple	**3/2** - Signed NeHII Participation Agreement **4/6** - Sent Readiness Assessment and VPN documentation **5/11** - Sent signed CPSI document and completed Readiness Assessment document **8/22** - Scheduled the kick off meeting for Wednesday, September 12. **9/11** - implementation in progress **11/15** - York is live on ADT feed and plans to go live on lab, radiology and transcription on 12/12 **12/12** - York live on radiology and transcription **1/15** - Waiting for sensitive data list to go live on lab **3/11** - Approval to go live on lab feed **3/18** - York is live on NeHII

NeHII--Hospital Participation

4/30/13

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	17			
Nemaha County Hospital	Auburn	20			
Memorial Community Health	Aurora	14			
Rock County Hospital	Bassett	24			
Beatrice Community Hospital & Health Center	Beatrice	25			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
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
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	22			22
Good Samaritan Health System	Kearney	165			
Richard H. Young Hospital	Kearney	61			
Kimball County Hospital	Kimball	20			
Lexington Regional Health Center (Tri County)	Lexington	25			25
BryanLGH Medical Center - East	Lincoln	374			
BryanLGH Medical Center - West	Lincoln	290			
Lincoln Surgical Hospital	Lincoln	21			
Madonna Rehabilitation Hospital	Lincoln	87			
Madonna Rehabilitation LTC Hospital	Lincoln	96			

		# Beds	Live May 2012	By end of 2012	By end of 1213
Nebraska Heart Hospital	Lincoln	63			
Saint Elizabeth Regional Medical Center	Lincoln	260			
Niobrara Valley Hospital	Lynch	20			
Community Hospital	McCook	25			25
Kearney County Health System	Minden	10			
Saint Mary's Hospital	Nebraska City	18			
Antelope Memorial Hospital	Neligh	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
Boys Town National Research Hospital - West	Omaha	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
Valley County Health System	Ord	16			
Annie Jeffrey Memorial County Health Center	Osceola	21			
Garden County Hospital	Oshkosh	10			10
Osmond General Hospital	Osmond	21			
Alegent Health-Midlands Hospital	Papillion	121	121	121	121
Pawnee County Memorial Hospital	Pawnee City	17			
Pender Community Hospital	Pender	21			
Alegent Health Plainview Hospital	Plainview	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	166	166	166	166
Memorial Health Care Systems	Seward	24			
Sidney Regional Medical 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	12			
Cherry County Hospital	Valentine	25			25
Saunders County Health Services	Wahoo	16			
Providence Medical Center	Wayne	25			25
Saint Francis Memorial Hospital	West Point	25			
York General Hospital	York	25			25
Bellevue Medical Center	Bellevue	91	91	91	91

		# Beds	Live May 2012	By end of 2012	By end of 1213
Methodist Women's Hospital	Omaha	112	112	112	112
Nebraska Spine Hospital	Omaha	34	34	34	34
Hospital Beds Total		**6748**	**3285**	**3357**	**3766**
% Hospital Beds			**48.7%**	**49.7%**	**55.8%**
# of Nebraska Hospitals		**97**	**15**	**17**	**33**
% of Nebraska Hospitals			**15.5%**	**17.5%**	**34.0%**

eBHIN
Electronic Behavioral Health Information Network

Timelines and Milestones—eBHIN

eBHIN Implementation Plan May 2013 - 2014				
Activity	**May-July 2013**	**Aug-Oct 2013**	**Nov 2013-Jan 2014**	**Feb-April 2014**
Region 5 - HIE Implementation	Deployed for: OUR Homes ACT	Deployed for: People's Health Center		Deployed for: Bryan Health
Region 5 – EPM Deployment	Completed at Cornhusker Place and Saint Monica's Home	Completed at Community Mental Health Center		
Region 5 – EMR Deployment		Started at CenterPointe & Touchstone	Completed at CenterPointe & Touchstone Started at Houses of Hope	Completed at Houses of Hope Started at Cornhusker Place and Saint Monica's
Region 6 – HIE Deployment Completed Year 1: ARCH NOVA Douglas County CMHC	Deployed for: Catholic Charities Salvation Army Friendship Program	Deployed for: Region 6 Behavioral Healthcare Santa Monica LFS	Deployed for: LHRC OneWorld CHC	Deployed for: Alegent BAART Community Alliance Telecare
DIRECT Secure Messaging Pilot	Obtain NextGen HISP licensing	Delineate workflow, stakeholders adopt agreements, provider addresses assigned	DIRECT Pilot completed	Application offered to all Network Providers
Provide Network Access to NeHII VHR	Develop DEA schedule for all eBHIN prescribers. Execute Adoption Agreements	Develop workflow and execute technical work	Deploy and test workflow – offer capability to network	
Activity	**1st Quarter**	**2nd Quarter**	**3rd Quarter**	**4th Quarter**
Regions 2, 3 & 4	Readiness Assessment completed Statement of Work for LWSI transport developed	Fund development efforts begin	Continue Fund development	Funding secured

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.

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 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 **Program Priority Area**	Support meaningful use	The % of community pharmacists activated for e-prescribing will be tracked. Pharmacies which are not accepting e-prescriptions will be surveyed to learn more about barriers. The % of physicians e-prescribing will be tracked.	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.

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?
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 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.)	A study will be done to determine if the rate of redundant diagnostic radiology testing has decreased since the implementation of HIE.

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 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.	

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 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: Survey will be utilized to determine provider satisfaction with HIE.

Study Population: A list of healthcare providers will be obtained from the Health Professionals Tracking Service (HPTS) including:

1. HIE users and non-users including eBHIN and Direct Services
2. Providers from urban and rural practices
3. Providers from large and small practices such as tertiary or primary hospitals
4. 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:

A survey to evaluate provider satisfaction with HIE will include questions in several domains such as:

- Which providers are using HIE?
- What are the characteristics of those not participating in HIE? Why did they choose not 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 the providers have concerns about HIE?
- What improvements/enhancements would the providers like to see?

The survey will be developed based on existing questionnaires and finalized by expert review. Three physicians will independently review the survey tool and provide feedback to ensure clarity, completeness, and face validity.

The survey will be distributed by mail and email to enhance convenience with responding and potentially increase participation rate. 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 using basic descriptive statistics to assess providers' satisfaction with HIE.

Consumer Satisfaction

Specific Research Question: What are the consumers' 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 clinics, local public health departments, and community organizations.

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

Primary Objective: To describe the information within NeHII that emergency room physicians are looking for when prescribing controlled substances, and how often that information is available.

Study Design: Prospective cohort study

Study Population: Up to 100 Emergency Department physicians will be recruited via a list provided by NeHII.

Data Sources and Data Collection Methods:
Access to NeHII will be provided to Emergency Department practitioners for the 4 month study period. Participants will receive a biweekly survey on usage of NeHII for PDMP and a final survey at study

conclusion. An online survey will be emailed to participants every two weeks during the four month study period. A final online survey will be emailed upon study completion.

The surveys will contain questions to address a variety of domains regarding use and satisfaction with HIE as PDMP.

Biweekly Online Survey Question Domains:

- How often do providers access NeHII for PDMP?
- What information are providers looking for?
- How often do providers find the information they desire?
- Does using NeHII for PDMP in the ER facilitate its use for other purposes?
- How does usage change over time?

Final Online Survey Question Domains:

- What practice and provider characteristics are associated with PDMP usage patterns?
- Who within the Emergency Department do providers feel is best suited to using the HIE?
- Are providers satisfied with HIE in the Emergency Department for PDMP?
- Did access to HIE for PDMP purposes succeed in preventing prescription drug misuse?
- What improvements/ enhancements would providers like to see to the HIE for PDMP use?

Data Analysis: Qualitative and quantitative data will be tabulated and analyzed using basic descriptive statistics to determine utility and satisfaction of providers with HIE as PDMP in the Emergency Department.

Evaluation Program Results Report

April 2013

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INTRODUCTION

A team of researchers at the University of Nebraska Medical Center (UNMC) has been tasked with the evaluation of the state Health Information Exchange (HIE). The evaluation is intended to determine whether Nebraska has achieved a functioning eHealth environment with widespread participation by providers and consumers as well as whether investments in eHealth have led to improvements in health care quality and efficiency in Nebraska. Current progress, and results where available, for each research project are described below. HIE in Nebraska currently consists of the Nebraska Health Information Initiative (NeHII) and the Electronic Behavioral Health Information Network (eBHIN).

PROVIDER SATISFACTION WITH HIE

Objectives: Determine how satisfied providers are with HIE in Nebraska.

Progress: We have developed a survey to assess provider satisfaction with HIE. Expert physicians have reviewed the survey to establish face validity. We have recently obtained an approval from the Institutional Review Board (IRB) and are planning to mail the survey to approximately 5600 providers in Nebraska. The contact information for providers has been obtained from the Health Professional Tacking Service at UNMC. Survey materials also include a digital QR code to scan with a smartphone, allowing providers to complete the survey online instead of the mailed copy. Analysis of survey results is expected to begin within the coming month as data collection is completed. Results are forthcoming.

CONSUMER SATISFACTION

Objectives: Determine consumer concerns surrounding health information security and privacy, as well as awareness and expectations of health information technology.

Progress: IRB approval has been obtained and the first several focus groups are scheduled for April and May, 2013. Focus group sites range from the Nebraska panhandle to Omaha and may occur in person or via the telehealth network. Recruitment is occurring via health departments or local community organizations. Data collection is anticipated to continue into June, 2013. Focus groups will be recorded and transcribed. Data will be analyzed to identify common themes on information security and privacy, as well as health information technology.

E-PRESCRIBING

Objectives: To identify unintended discrepancies that occur during e-prescribing and subsequent dispensing to indicate the presence of medication errors.

Progress: Completed and submitted to an academic journal for review.

Results: A total of 602 prescriptions written by 33 prescribers for 480 patients were evaluated from the 3 ambulatory care clinics (Table 1).

We were able to identify some documentation referring to the dispensed prescription for 90% of the prescriptions evaluated. For about 10% of the prescriptions, however, there was no documentation available in the patient's chart (either prescribers notes or nursing documentation) to indicate that a patient was evaluated in the office or contacted the clinic via phone or e-mail on or near the date the

prescription was dispensed. It is likely that most of these prescriptions were associated with refill requests (no patient visit) that were mis-identified as new prescriptions. For an additional 6% of the prescriptions, there was insufficient documentation to determine drug, dose, and/or duration of therapy, leaving between 76 and 92% of the prescriptions available for a full evaluation at each clinic (Table 2). In cases where prescriber intent could not be ascertained, a comparison between the clinic's electronic prescription and the pharmacy label was still made. Because we did not identify any prescriptions with more than one discrepancy, an overall discrepancy rate for each clinic (from physician note to the prescription label) can be estimated by adding the discrepancy rate between the physician note and clinic e-prescribing software to the discrepancy rate between the clinic e-prescribing software and the pharmacy label (MD/EHR) + (EHR/PHARM) (Table 3).

Table 1: Demographics

	Family Medicine Clinic w/Affiliated Pharmacy	**Family Medicine Clinic w/Independent Pharmacy**	**Pediatric Clinic w/Independent Pharmacy**
Total Rx	191	212	199
# of Patients	150	179	151
Male (%)	73 (38%)	82 (39%)	111 (56%)
# of Prescribers	16	10	7
# Rx's / Age Group			
0-2	10	6	80
3-12	7	11	93
13-18	2	8	24
19-65	156	147	2
>65	16	40	0

The most frequent discrepancies identified were associated with generic substitution followed by differences in package size (inhalers, creams/ointments), differences in concentration (250mg/5ml substituted for 125mg/ml with appropriate volume adjustment), and differences in dosage form (liquid dispensed instead of a solid dosage form). It is unlikely that these discrepancies are errors. While efficiency may be reduced in cases where the pharmacy contacts the physician to clarify package size or get authorization for substitution, the risk of these discrepancies leading to patient harm is remote. These discrepancies are not further characterized in our analysis. Refills were not included in our analysis because they were rarely available in a prescriber's note.

Table 2: Prescriber Intent

	Family Medicine Clinic w/Affiliated Pharmacy Rx=191	Family Medicine Clinic w/Independent Pharmacy Rx=212	Pediatric Clinic w/Independent Pharmacy Rx=199
Prescriber Note Available (%)	181 (94.8%)	177 (83.5%)	183 (92%)
Prescriber Intent Available	176 (92.1%)	176 (83%)	152 (76.4%)

Discrepancies: Adult Clinics

Discrepancies between physician intent and the EHR (MD/EHR) were rare in the two adult clinics with a total discrepancy rate of approximately 1% (4 of 352) (Table 3). Discrepancies were more common between the clinic's EHR and pharmacy label (EHR/PHARM), with most of those observed in the clinic with integrated clinic and pharmacy software (2.5%; 10 of 403). Two discrepancies (both associated with one patient) were the result of prescriptions being written for the wrong patient. The prescriptions were discontinued at the clinic and re-written for another patient on the same day. The unintended prescriptions, however, were filled by the pharmacy. The patient never picked up the prescriptions, but there was no documentation at the pharmacy that the prescriptions should have been voided.

Differences between the directions included on the electronic prescription and the directions on the prescription label were the most common type of discrepancy observed in the adult clinics. In each case, more information was recorded in the e-prescription than the pharmacy label. For example, a 25mg dose of amitriptyline was to be taken "with her 50mg dose for a total dose of 75mg". The directions on the pharmacy label stated "take one tablet by mouth once daily". It is possible that these additional instructions were provided to the patient; however, not including the additional details on the pharmacy label may increase the likelihood that an error will occur. Other discrepancies included: drug (doxycycline substituted for minocycline without documentation authorizing the therapeutic substitution), frequency (twice daily vs. every 6 hours), duration (12 days vs. 14 days), and dose/volume (inhale 0.3ml vs. inhale 1 vial).

Discrepancies: Pediatric Clinic

Discrepancies between the prescriber's intent and the clinic's e-prescribing software (MD/EHR) were more common in the pediatric clinic (3.9%; 6 of 152) compared to the adult clinics, while discrepancies between the e-prescription and pharmacy label (EHR/PHARM) were similar (1.5%; 3 of 199). Only one of the 9 pediatric discrepancies involved an oral solid dosage form in contrast to the adult clinic where the vast majority of prescriptions were for tablets or capsules. Dosage forms associated with pediatric discrepancies included: oral liquids, ophthalmic/otic drops, and creams/ointments (Table 3).

Discrepancies involving duration of therapy and directions for administration were most common. Duration discrepancies included both different lengths of treatment (e-Rx: 5ml three times daily for 5 days; Pharmacy Label 5ml 3 times daily for 10 days) and omission of stop dates (e-rx: 2.5ml three times daily X 14 days; Pharmacy Label: 2.5ml three times daily - 160ml was dispensed). As with the adult

clinic, discrepancies between directions for use were due to more information being included in the physician's note or e-prescription than what was included on the pharmacy label (ex. Prescriber note: "As needed for cold sore. Take with onset of symptoms but prior to eruption of lesions"; e-RX and Pharmacy Label; "Take 1 tablet twice a day". Other pediatric discrepancies identified included wrong drug (Clinic note: Pulmicort; e-RX and Pharmacy Label: Albuterol), dose or volume (Clinic note: 5ml; e-RX and Pharmacy Label: 2.5ml) and frequency (Clinic note: four times daily; e-RX and Pharmacy Label: twice daily).

Table 3: Unintended Discrepancies

	Family Medicine Clinic w/Affiliated Pharmacy		**Family Medicine Clinic w/Independent Pharmacy**		**Pediatric Clinic w/Independent Pharmacy**	
	MD/EHR (Rx=176)	EHR/PHARM (Rx=191)	MD/EHR (Rx=176)	EHR/PHARM (Rx=212)	MD/EHR (Rx=152)	EHR/PHARM (Rx=199)
Discrepancies (%)	3 (1.7%)	8 (4.2%)	1 (0.6%)	2 (0.9%)	6 (3.9%)	3 (1.5%)
Patient	2					
Drug					1	
Dose or volume		1			1	
Strength / Concentration						
Frequency		1	1	1	1	
Duration		1			1	2
Directions		4		1	2	1
Prescription Quantity	1	1				

MD/EHR = Discrepancies identified between the prescriber's notes and the clinic's e-Prescribing software.

EHR/PHARM = Discrepancies identified between the clinic's e-Prescribing software and the pharmacy label.

The total numbers of prescriptions differ because physician intent was not always discernable from the patient's chart.

Pediatric Discrepancies: Within a Provider's note or e-Prescription

Eleven additional discrepancies not included in Table 3 were identified within the prescriber's note (1 discrepancy) or the clinic e-prescription (10 discrepancies) at the pediatric clinic (Table 4). Table 3 only includes discrepancies among the three data sources. Similar discrepancies were not observed in either of the adult clinics. The most common categories of the "within source" discrepancies involved dose (5) and frequency of administration (3). Most dose discrepancies were associated with the volume of oral liquids or nebulized solutions to be administered. Discrepancies were also noted between the number of drops (both oral and ophthalmic) the prescriber intended and what was entered into the EHR. In the majority of cases, it appeared that the prescriber wanted to provide additional detail, but was limited by

choices available in the e-prescribing software. When this occurred, the prescriber would select the available option that was most similar to their intended prescription, and then would clarify in an "additional instructions" field. For example, the directions for use in the e-prescribing software read "1 drop daily" while the "additional instructions" field read "1 dropper daily". In all but one case, pharmacists identified the correct information (as indicated by the prescriber's note). In one case, the pharmacy didn't identify the 14-day duration of treatment in the "additional instructions" field and dispensed the prescription without a stop date. The volume dispensed, however, allowed for treatment to continue beyond 14 days.

Table 4: Discrepancies within Clinic notes or EHR; Pediatric Clinic

	Within Clinic Note **Rx=152**	**Within Clinic EHR** **Rx=199**
Total (%)	(%)	(%)
Patient	0	0
Drug	0	0
Dose or volume	0	5
Concentration	0	0
Frequency	0	3
Duration	1	0
Directions	0	2
Quantity	0	0

Interpretation and Implications: This study is consistent with research demonstrating that unintended discrepancies occur more commonly in free text data entry fields as opposed to selecting an option from a drop down menu. But we also found that discrepancies occurred when the desired option was not available from a drop down menu, requiring the prescriber to choose the closest option and clarify the prescription elsewhere. Both types of discrepancies could potentially result in medication errors. This provides a challenge to software developers. They must reduce the number of free text fields while also making sure that the options desired by prescribers are readily available or easily customizable. This is particularly important for clinicians who regularly prescribe medications other than tablets or capsules. This includes pediatricians, dermatologists and oncologists, whose therapies are often based on age, weight, or body surface area and who commonly use liquid, otic, ophthalmic, and topical dosage forms. Discrepancies within the e-prescribing software may be reduced if the prescriber was able to choose "refer to additional instructions" as an option in the drop down list of directions rather than being forced to populate the field with an incorrect option. Prescribers must take advantage of customization when available so that discrepancies that could lead to medication errors are not being purposely entered into electronic prescriptions. While this type of customization is available in some e-prescribing software, the number of prescribers who are taking advantage of this option is unknown.

RADIOLOGY AND LABORATORY DATA

Primary Objective: To determine if access to results of diagnostic laboratory and radiology tests through the HIE reduces the rate of redundant testing.

Progress: The evaluation team is waiting to hear the status of the data analytics tool. There have been preliminary discussions about using a tool to complete this study. If available, the data would provide a more clear look at the utilization of the HIE and true repeat testing. If the tool is not available by May 15th, the team will resume with the planned evaluation.

UTILIZATION OF MEDICATION HISTORY

Objectives: To determine if access to formulary and eligibility information improves medication adherence and generic utilization rates by making such information available at time of prescribing.

Progress: The current lack of medication histories in NeHII makes this evaluation project challenging. Until we find out whether this will be resolved, we are considering other projects to address the value of medication histories. A final decision will be made by May 15th.

VALUE OF HIE IN EMERGENCY DEPARTMENT

Objectives: To describe the information within NeHII that emergency room physicians are looking for when prescribing controlled substances, and how often that information is available.

Progress: We researchers have worked with NeHII to provide training and HIE access to the participating physicians during the 4-months study period. We have developed a bi-weekly survey for Emergency Department (ED) providers to determine frequency of HIE access and successful use, as it pertains to the prescription drug monitoring in the ED. This survey has been designed for minimal workflow disruption and is anticipated to require less than five minutes to complete. A second longer survey on provider and practice characteristics in addition to satisfaction with features of the HIE will be conducted at study completion. We have submitted IRB application and are expecting approval shortly. The study will begin once NeHII has ensured that medication history will be present for the planned 4- month study duration.

Nebraska State HIE Tracking Program Progress

	May 2012		March 2013	
Program Priority	**Status as of December 2011**	**Target for December 2012**	**Status as of December 2012**	**Target for December 2013**
% of pharmacies participating in e-prescribing	**90% on network** **88% active** **Source**: Surescripts Data Dec. 2011	**95% on network** **93% active**	**95% on network** **93% active** **Source:**Surescripts Data Dec. 2012	**96% on network** **94% active**
	National Actual: 92%	**National Goal: 94%**	**National Actual: 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%**	**47%** **Source:** UNMC lab census conducted in January 2013	**50%**
% of labs sending electronic lab results to providers using LOINC	**15%** **Source:** UNMC lab census conducted in March 2012	**20%**	**22%** **Source:** UNMC lab census conducted in January 2013	**30%**
% of hospitals sharing electronic care summaries with unaffiliated hospitals and providers	**34%** **Source:** AHA Survey, 2010	**35%**	**37%** **Source:** 2012 AHA survey	**43%**
	National Actual: 27%	**National Goal: 45%**	**National Actual: 35%**	**National Goal: 50%**
% of ambulatory providers electronically sharing care summaries with other providers	**N/A**	**N/A**	**4%**	**6%**
				National Goal: 20%

	May 2012		March 2013	
Program Priority	**Status as of December 2011**	**Target for December 2012**	**Status as of December 2012**	**Target for December 2013**
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%	100%	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%	100%	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%	100%	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%	100%	100%

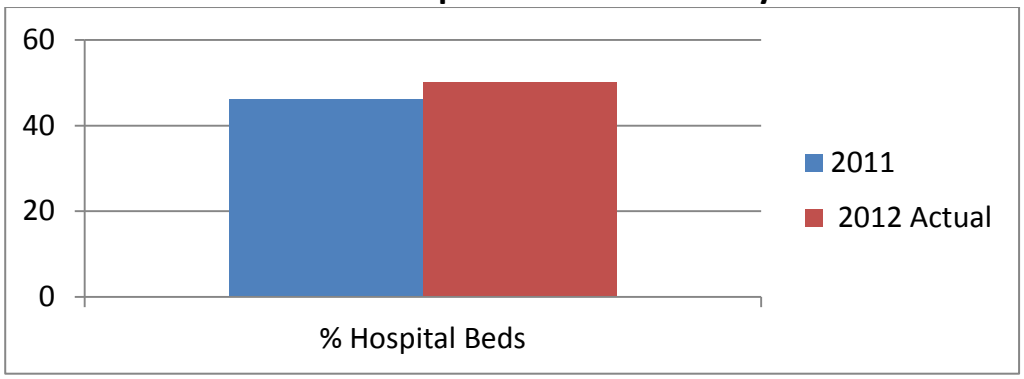
Structured format: Documentation of discrete data using controlled vocabulary, creating fixed fields within a record or file, or another method that provides clear structure to information (is not completely free text)

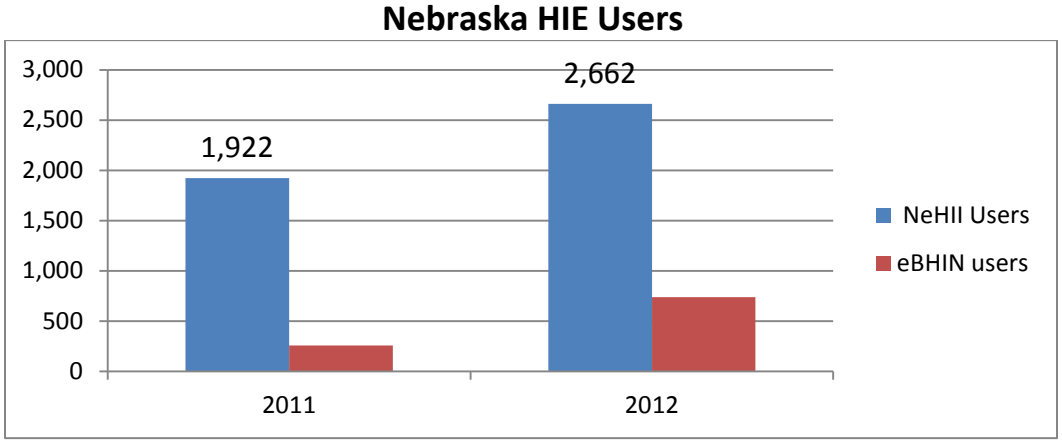
Nebraska HIE Goals and Tracking

January 2013

Participating Hospitals—NeHII

% of Nebraska Hospital Beds Covered by NeHII



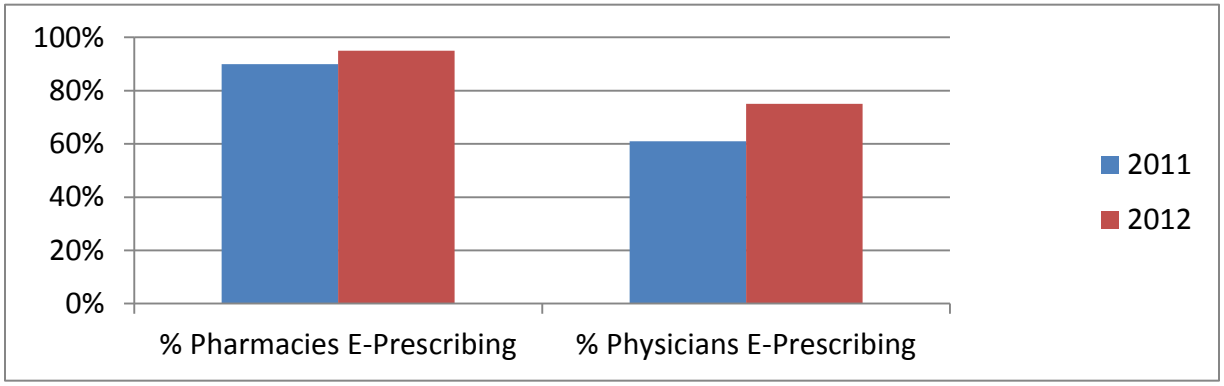


Nebraska HIE Metrics

Measure	Baseline 2011	Target 2012	Actual 2012	Target 2013
Individual users enabled for query-based exchange through NeHII	1,922 total users	2,500 total users	2,662 total users	3062
Individual users enabled for query-based exchange through eBHIN	259 providers with EPM/0 providers on HIE	905 total users	217 individual HIE users from 11 organizations. Additionally, eBHIN has 264 EHR users and 257 EPM users	300 HIE 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	27 hospitals	22 hospitals **Participating Hospitals--NeHII** • Bellevue Medical Center - Bellevue, NE • Bergan Mercy Hospital - Omaha, NE • Children's Hospital and Medical Center - Omaha, NE • Creighton University Medical Center – Omaha, NE • Great Plains Regional Medical Center – North Platte, NE	39 Dependent upon implementation progress of private HIEs within Nebraska health systems and HITECH 90/10 matched funding approval

	• 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		• 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 • Regional West Medical Center - Scottsbluff • Columbus Community Hospital – Columbus • Sidney Regional Medical Center - Sidney • Avera Creighton - Creighton • Avera St. Anthony's – O'Neill Note: Hospitals under implementation at the close of 2012 include: • Beatrice Community Hospital • Boys Town Hospital • Cass County Hospital (Atlantic, IA) • York General Hospital • Providence Medical Center (Wayne)	
% of Nebraska Hospital Beds Participating in Query-Based Exchange through NeHII	46%	60%	51%	56 - 62%

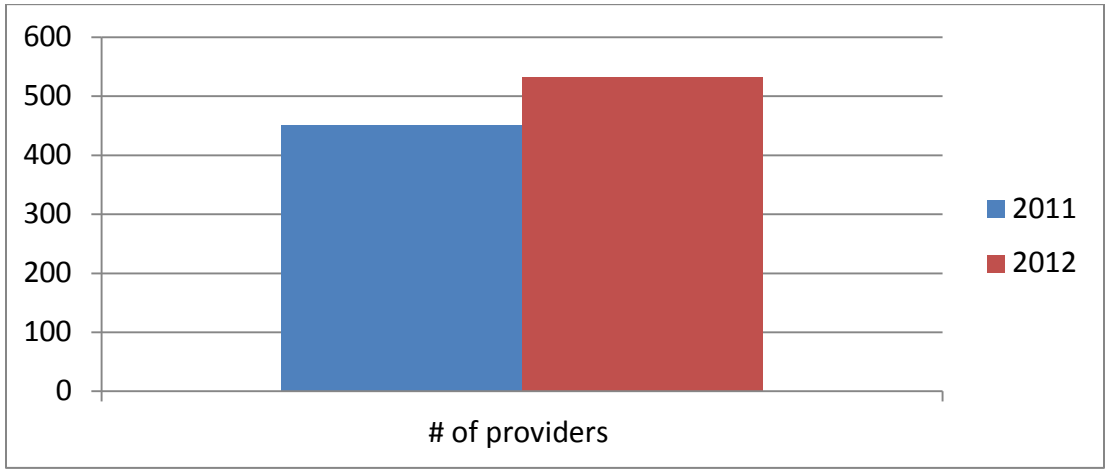
Hospital Behavioral Health Units Participating in eBHIN	0	3	0	3
Laboratories actively participating in query-based exchange	17 hospital-based laboratories (14 Nebraska and 3 Iowa) **Hospital-Based Laboratories Participating in NeHII** • Bellevue Medical Center - Bellevue, NE • Bergan Mercy Hospital - 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	22 hospital-based laboratories • Bellevue Medical Center - Bellevue, NE • Bergan Mercy Hospital - Omaha, NE • Children's Hospital and Medical Center - Omaha, NE • Creighton University 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 • Regional West Medical Center - Scottsbluff • Columbus Community Hospital – Columbus • Sidney Regional Medical Center - Sidney • Avera Creighton - Creighton • Avera St. Anthony's – O'Neill	39 hospital-based laboratories Dependent upon implementation progress of private HIEs within Nebraska health systems and HITECH 90/10 matched funding approval



E-Prescribing Adoption

Measure	Baseline 2011	Target 2012	Actual 2012	Target 2013
% of community pharmacies activated for e-prescribing	90%	95%	95% Nov. 2012	96%
% of physicians e-prescribing	56%-61% depending upon the estimate of the number of physicians used 1,962 physicians e-prescribing (Dec. 2011)	75%	69%-74% depending upon the estimate of the number of physicians used 2,517 physicians e-prescribing (Dec. 2012)	89%

Providers Submitting to Immunization Registry



Providers Submitting to Immunization Registry/Public Health Reporting

Measure	Baseline 2011	Target 2012	Actual 2012	Target 2013
Total Number of Providers Submitting to Immunization Registry	450**	750	532*	750
Number of Providers Submitting to Immunization Registry Electronically	136	436	193*	436
# of labs submitting data to NEDSS	16	20	17	23
# of hospitals submitting data to the syndromic surveillance system	16	24	17	24
# of ambulatory providers/clinics submitting syndromic surveillance data		12	1	12

***It is important to note that this is the number of "distinct" connections we have with facilities/vendors and some of these facilities/vendors send for multiple facilities/locations. For example – Mollen Immunization Clinics is counted as "1" connection but they send for all WalMart and Sam's Club locations across the State of NE. Same thing for Shopko – they are 1 connection but send for all locations in NE. Some vendors send data for multiple participating clinics – they may be listed as 1 "connection" but send for multiple facilities.**