
Nebraska Operational eHealth Plan

Sept. 7, 2010

This edition of Nebraska's Operational eHealth Plan presents Nebraska's plan to develop statewide health information exchange. As the eHealth Council continues to address the development of health information exchange and the adoption of health IT, the plan will be updated. Frequent revisions are anticipated due the quickly changing health IT environment. Please check the Nebraska Information Technology Commission's website (www.nitc.nebraska.gov) for the most recent edition.

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Executive Summary

Coordination of eHealth activities in the state is facilitated by the Nebraska Information Technology Commission's eHealth Council. The strategic plan, developed by the eHealth Council and published in October 2009, lays out the state's vision, goals, objectives, and strategies for implementing statewide health information exchange and supporting the Meaningful Use of health information technology. This operational plan provides more detailed information on how Nebraska plans to develop statewide health information exchange and work toward the achievement of Meaningful Use of electronic medical records. In order to simplify planning, this operational plan focuses primarily on the first two years of Nebraska's State HIE Cooperative Agreement Program and on those activities necessary for implementing the agreement. Through the cooperative agreement, Nebraska will receive approximately \$6.8 million to Nebraska for the development of statewide health information exchange. The State HIE Cooperative Agreement Program is administered by the U.S. Department of Health and Human Services Office of the National Coordinator for Health IT.

Nebraska's approach to establishing a statewide health information exchange includes:

- **Utilizing a Statewide Integrator.** As the state's only active health information exchange with a statewide focus, the Nebraska Health Information Initiative (NeHII) will act as the statewide integrator and lead health information exchange (HIE) for Nebraska.
- **Supporting Existing Specialty Exchanges and Regional Health Information Organizations.** Stakeholders in Nebraska have invested in specialty exchanges, including the Electronic Behavioral Health Information Network (eBHIN) and the Nebraska Statewide Telehealth Network. eBHIN will connect behavioral health providers in the 16-county Region V service area, with future plans to offer the applications to other regions in the state as time and resources allow. These efforts will be supported and leveraged. The Nebraska Statewide Telehealth Network connects the state's hospitals, providing two way-interactive video for patient consultations, continuing medical education, and administrative meetings.
- **Integrating with Medicaid.** The Department of Health and Human Services Division of Medicaid and Long-Term Care has submitted a HIT Planning APD (Advanced Planning Document) to the Centers for Medicare and Medicaid Services (CMS) to initiate the process to access funds available only through state Medicaid agencies. In the short term, these planning funds will allow Medicaid to plan the approach to development of the Medicaid role in both supporting the statewide integrator in achievement of their stated goals, and to explore the possibilities for Medicaid in reaching its goals to fully adopt electronic capabilities commensurate with national HIT/HIE objectives. In the longer term, additional HIT/HIE funds are available through CMS to Medicaid agencies that will considerably further the development and implementation of e-health capabilities.
- **Supporting Quality Improvement.** Effective health information exchange will utilize the underlying technology to improve the health of all Nebraskans while transforming health care delivery through the meaningful use of health

information. The overall purpose is to provide quality outcomes as efficiently as possible.

- **Supporting Meaningful Use.** Demonstrating Meaningful Use of certified electronic health records is central to ARRA-funded programs, including the State HIE Cooperative Agreement program. Nebraska's statewide health information exchange is committed to providing the applications necessary for eligible providers and hospitals to meet Stage One requirements in year one.
- **Integrating with Public Health.** Public health is a state responsibility and needs to be integrated into efforts to create a statewide health information network. Nebraska has invested in several systems which will interface with the statewide health information network. Discussions with public health representatives are underway to determine public health requirements and to develop a solution that meets those requirements.
- **Coordinating with Other Efforts.** NeHII and the eHealth Council will coordinate with Wide River Technology Extension Center and Metro Community College, a participant in the Community College Consortia program. Issues related to broadband access will be addressed through Nebraska's Broadband Mapping and Planning project.
- **Providing and Documenting Value.** The business models of eBHIN and NeHII are based on the development of solutions which are cost-effective and provide the greatest return on investment.
- **Demonstrating Sustainability.** Nebraska's integrator, NeHII, has been operational since the spring of 2009 and has a sustainable business model. Future growth will solidify NeHII's sustainability. Although not yet operational, eBHIN has developed a business plan showing sustainability.
- **Safeguarding Privacy and Security.** 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. Additionally, the Nebraska Department of Health and Human Services' Licensure Unit, the Nebraska Attorney General's Office, and the U. S. Department of Health and Human Services' Office of Civil Rights share responsibilities for health information security and privacy enforcement.
- **Complying with Standards and Certification Processes.** NeHII and the state's regional and specialty exchanges are committed to the utilization of national standards and certification.
- **Providing governance.** In Nebraska, both the private and public sectors will share responsibilities for governance of health information exchange. This type of relationship between state government and the private sector has been described as the Private Sector-Led Electronic HIE with Government Collaboration model.

Technical Architecture

NeHII, as the statewide integrator and lead HIE, will provide the technical infrastructure. NeHII utilizes a “hybrid-federated” method of data exchange where federated databases are stored in a common data center on separate edge servers to avoid co-mingling of data. eBHIN plans to utilize enterprise architecture and will connect with NeHII. Both NeHII and eBHIN plan to offer the services necessary to meet Meaningful Use requirements.

Business and Technical Operations

NeHII’s hybrid-federated model includes shared services and provider directories designed to coordinate communication across the state while reducing administrative overhead to the system. The shared services and repositories which will be available to all NeHII participants include a Master Patient Index, Record Locator Service, and Provider Directory.

Governance

The Nebraska Information Technology Commission’s eHealth Council is responsible for developing the state’s eHealth plan, coordinating stakeholders, and providing oversight and accountability. The eHealth Council will also be directly involved in making recommendations regarding privacy and security, interoperability, fiscal integrity, business and technical operations, and universal access for Nebraska’s statewide health information exchange.

As the statewide integrator, NeHII will assume the primary responsibility for implementing statewide health information exchange in Nebraska. NeHII was formed by a collaboration of Nebraska hospitals and health systems, private entities, state associations, healthcare providers, independent labs, imaging centers and pharmacies. Representatives of these entities and the Lt. Governor sit on the Board of Directors of NeHII.

Lt. Governor Rick Sheehy is the State HIT Coordinator. He is responsible for the coordination of eHealth activities within the State of Nebraska.

Privacy and Security

Ensuring privacy and security is a priority of the eHealth Council and the state’s health information exchanges. The eHealth Council and its Health Information Security and Privacy Committee have engaged in many activities which address privacy and security, including reviewing Nebraska’s laws and developing consumer education materials. NeHII and eBHIN have carefully developed privacy and security policies. The Nebraska Department of Health and Human Services’ Licensure Unit, the Nebraska Attorney General’s Office, and the U. S. Department of Health and Human Services’ Office of Civil Rights share responsibilities for health information security and privacy enforcement.

Finance

Funding from the State HIE Cooperative Agreement program will support the further development of eBHIN and NeHII. Nebraska has developed a detailed schedule, including benchmarks and targets.

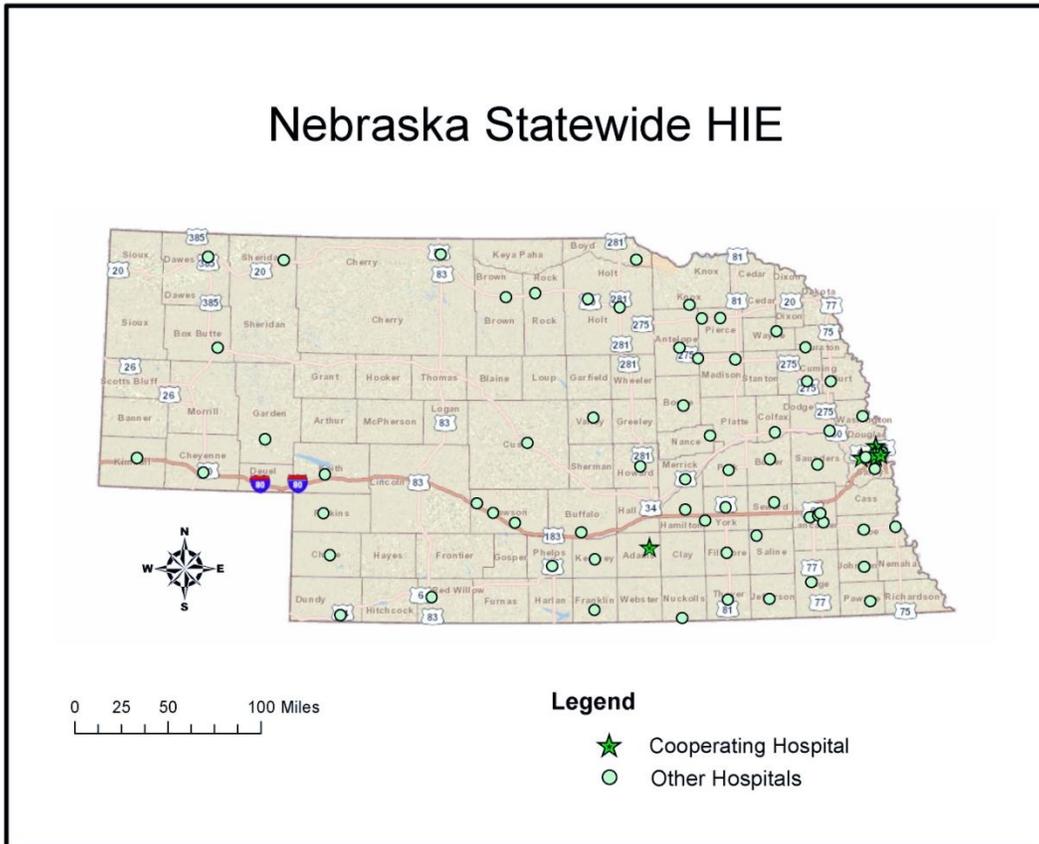
Highlights

Nebraska has already made great strides in developing health information exchange in the state. The following information highlights Nebraska's current status and Nebraska's future plans.

- As of Feb. 2010, eight hospitals with a total of 2,370 beds are participating in statewide health information exchange through NeHII. These hospitals account for approximately 36% of the hospital beds in Nebraska.
- As of Feb. 2010, over 1.5 million patients have health information available through NeHII. This includes 1.1 million Nebraskans—over 60% of Nebraska's population.
- As of Feb. 2010, 415 physicians and staff are using NeHII's Electronic Medical Record or Virtual Health Record.
- As of Feb. 2010, over 3,000 prescriptions have been sent electronically, faxed or printed through NeHII.
- By the end of the third quarter of 2010, at least five additional hospitals are expected to be participating in NeHII, bringing the percentage of hospital beds in participating hospitals to 44%.
- Early in year one of the grant, NeHII will have the capability to connect to the NHIN.
- By October 2010, eBHIN is expected to launch and begin piloting. eBHIN will connect to NeHII, creating a statewide health information exchange.
- Public health officials have been meeting to define requirements and will work with NeHII and NeHII's vendor to develop a public health application.
- By the end of year one of the grant, six labs and imaging facilities are expected to be connected to NeHII.
- State HIE and Medicaid planning efforts will be coordinated. Nebraska is expected to complete its State Medicaid HIT Plan for Medicaid by December 2010.

Mapping Our Progress

The following map shows the location of Nebraska hospitals currently participating in statewide health information exchange. Currently participants are concentrated in the Omaha area. Additional hospitals in Omaha and other areas of the state are expected to connect to NeHII in 2010. This map will be updated to map our progress.



Benchmarks and Targets

Measures—NeHII	Jan. - March 2010 Actual	April- June 2010 Target	July- Sept. 2010 Target	Oct.- Dec. 2010 Target
Number of Clients				
<ul style="list-style-type: none"> Number of clients in the Master Patient Index 	1,544,570	1,700,000	1,800,000	1,900,000
<ul style="list-style-type: none"> Number of Nebraska clients in the Master Patient Index 	1,138,107	1,200,000	1,250,000	1,300,000
<ul style="list-style-type: none"> Total patients that have Opted Out 	27,032	28,800	29,800	30,800
<ul style="list-style-type: none"> Total patients Opting back In 	2,092	2,100	2,200	2,300
Provider Information				
<ul style="list-style-type: none"> Number of successful matches within a facility/across the community 	155,642	158,755	165,105	168,407
<ul style="list-style-type: none"> Number of physicians and staff using the Virtual Health Record (VHR) 	296	912	1078	1312
<ul style="list-style-type: none"> Number of physicians and staff using the EMR 	137	281	404	516
<ul style="list-style-type: none"> Total number of physicians using VHR or the EMR 	327	1027	1327	1627
Hospital Information				
<ul style="list-style-type: none"> Number of hospitals participating 	8	15	15	15
<ul style="list-style-type: none"> % of hospitals participating 	8	16	16	16
<ul style="list-style-type: none"> Percent of hospital beds covered 	36	44	44	44
Public Health Information				
<ul style="list-style-type: none"> State systems connected 	0	0	0	0
<ul style="list-style-type: none"> Local health departments connected 	0	0	1	1
<ul style="list-style-type: none"> Percent of public health departments connected 	0			
Payer Information				
<ul style="list-style-type: none"> Number of payers participating 	1	1	1	1
Laboratory and Imaging Facility Information				
<ul style="list-style-type: none"> Number of labs and imaging facilities connected 	3	4	4	4

• Percent of lab and imaging facilities connected	0	0	0	0
Specialty Exchange Connections				
• Number of specialty exchanges connected	0	0	0	0
Number of Requests in the System:				
• Total Requests completed since May 1, 2009	374,664	476,646	596,984	740,889
• Total Requests completed in less than 2 seconds	360,665	458,087	573,104	710,513
• Requests completed this quarter	83,907	101,982	120,338	143,905
Total Number of Prescriptions Sent Electronically, Faxed or Printed				
• Electronic	3,799	5,323	7,022	8,772
• Printed	127	160	210	263
• RxHUB Mail Order	19	22	26	31
Number of prescriptions sent this quarter	1,219	1,279	1,356	1,452
Total Number of Results Sent to Exchange				
• LAB	5,710,419	7,248,804	8,890,310	10,553,251
• RAD	1,622,869	1,974,498	2,343,709	2,723,995
• Transcription	781,472	1,044,999	1,321,702	1,603,939
Number of Results Sent to Exchange this Quarter				
• LAB	1,507,475	1,537,625	1,641,506	1,662,941
• RAD	344,734	351,629	369,211	380,286
• Transcription	255,851	263,527	276,703	282,237
Meaningful Use Measures Offered				
• Number of Meaningful Use measures offered	3			

Meaningful Use Measures Currently Offered:

- E-prescribing
- Electronically exchanging key clinical information
- Electronically checking insurance eligibility information

Measures—eBHIN	Jan. - March 2010	April- June 2010	July- Sept. 2010	Oct.- Dec. 2010
Number of Clients				
<ul style="list-style-type: none"> Number of clients in the Master Patient Index 			592,000	592,000
<ul style="list-style-type: none"> Total patients that have Opted Out 			280	460
<ul style="list-style-type: none"> Total patients Opting back In 				
Provider Information				
<ul style="list-style-type: none"> Number of physicians and staff participating 			383	776
<ul style="list-style-type: none"> Total number of clinicians using VHR or the EMR 			71	78
Number of Requests in the System:				
<ul style="list-style-type: none"> Total Requests completed since May 1, 2009 			3,500	9,250
<ul style="list-style-type: none"> Requests completed this quarter 			3,500	5750
Total Number of Prescriptions Sent Electronically, Faxed or Printed				
<ul style="list-style-type: none"> Electronic 				
<ul style="list-style-type: none"> Printed 				
<ul style="list-style-type: none"> RxHUB Mail Order 				
<ul style="list-style-type: none"> Number of Prescriptions Sent Electronically, Faxed or Printed this Quarter 				
Meaningful Use Measures Offered				
<ul style="list-style-type: none"> Number of Meaningful Use measures offered 				

Introduction

Health information technology (Health IT), often referred to as eHealth, promises to improve the quality of patient care and consumer safety, as well as enhance public health efforts. Over the past several years, progress has been made in addressing many of the barriers which have limited the adoption of health IT. Additionally, the American Recovery and Reinvestment Act provides significant funding for health IT. The State Health Information Exchange Cooperative Agreement through the Office of the National Coordinator will provide approximately \$6.8 million to Nebraska for the development of statewide health information exchange.

Coordination of eHealth activities in the state is facilitated by the Nebraska Information Technology Commission's eHealth Council. The strategic plan, developed by the eHealth Council and published in October 2009, 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. This operational plan provides more detailed information on how Nebraska plans to develop statewide health information exchange and work toward the achievement of Meaningful Use of electronic medical records.

Vision

The vision for eHealth in Nebraska, as stated by the eHealth Council in the state's strategic eHealth plan, is presented below:

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

Goals

The eHealth Council identified the following goals in the state's strategic eHealth Plan. These goals will be achieved while ensuring the privacy and security of health information, which is an essential requirement in successfully implementing health information technology and exchanging health information:

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

Scope

The implementation of health information exchange and the achievement of Meaningful Use in Nebraska is an extremely complex endeavor. In order to simplify planning, this operational plan focuses primarily on the first two years of Nebraska's State HIE Cooperative Agreement Program and on those activities necessary for implementing the agreement. The eHealth Council recognizes that the full implementation of health information exchange and the achievement of Meaningful Use is broader and will take more than two years. It is anticipated that future plans will cover years three and four of the cooperative agreement. Due to rapid developments in health information technology and policies, this plan will likely need to be updated frequently. The state's strategic plan will continue to take a broader view of eHealth and will also likely require frequent updating.

Nebraska's Approach to Establishing Statewide HIE

Nebraska's approach to establishing a statewide health information exchange includes:

- Utilizing a statewide integrator;
- Supporting existing specialty exchanges and regional health information organizations;
- Integrating with Medicaid;
- Supporting quality improvement;
- Supporting Meaningful Use;
- Integrating with public health;
- Coordinating with other efforts;
- Providing and documenting value;
- Demonstrating sustainability;
- Safeguarding privacy and security;
- Complying with standards and certification processes; and
- Providing governance.

Utilizing a Statewide Integrator

A statewide integrator connects regional and specialty health information exchanges, public health systems, integrated delivery systems, and other health information systems into an integrated system. It is an efficient and effective way to leverage investments in health information technology made by disparate stakeholders. From its inception, NeHII has envisioned improving health outcomes across the state through the exchange of health information. As the only active health information exchange with a statewide vision, the Nebraska Health Information Initiative (NeHII) is well-positioned to serve as the statewide integrator.

NeHII successfully completed a pilot project in the spring of 2009, exchanging health information among participants in the Omaha area. Alegant Health, Children's Hospital and Medical Center, Methodist Health System, The Nebraska Medical Center, and BlueCross BlueShield of Nebraska participated in the pilot project. Since then NeHII has continued to add physicians and hospitals. In January 2010, Mary Lanning Memorial Hospital in Hastings began exchanging health information through NeHII. As of Feb. 2010, over 400 physicians and staff are using NeHII's EMR or Virtual Health Record.

Over 1.5 million patients in Nebraska and neighboring states of Iowa and Missouri have health information available through NeHII.

NeHII will be responsible for implementing statewide health information exchange through the federally funded State Health Information Exchange Cooperative Agreement program. NeHII will serve two functions: (a) as an integrator for health providers, health organizations and health information exchanges requesting facilitation to connect to the NHIN and/or with each other, and (b) as a health information exchange offering services in its own right. NeHII will provide the technical infrastructure for the sharing of health information throughout the state.

Supporting Existing Specialty Exchanges

Stakeholders in Nebraska have invested in specialty exchanges, including the Electronic Behavioral Health Information Network (eBHIN) and the Nebraska Statewide Telehealth Network. These efforts will be supported and leveraged.

The **Electronic Behavioral Health Information Network** will connect behavioral health providers in the 16-county Region V service area, with future plans to offer the applications to other regions in the state as time and resources allow. eBHIN will participate in statewide health information exchange by connecting to NeHII. Initial potential participants include Blue Valley Behavioral Health Center, BryanLGH Medical Center, CenterPointe, Child Guidance Center, Community Mental Health Center, Cornhusker Place, Houses of Hope, Lincoln Council on Alcoholism and Drugs, Lutheran Family Services, Mental Health Association, Region V Systems, and St. Monica's Home. eBHIN partners have received several grants including a planning grant from the U.S. Department of Health and Human Services Agency for Healthcare Research and Quality (AHRQ) in 2004, an AHRQ Ambulatory Care Grant in 2008, a three-year Rural Health Network Development Grant from the U.S. Department of Health and Human Services' Health Resources and Services Administration in 2008, Region V Systems, and a grant from the Nebraska Information Technology Commission.

The **Nebraska Statewide Telehealth Network** connects the state's hospitals, providing two way-interactive video for patient consultations, continuing medical education, and administrative meetings. Additionally, the telehealth network provides access to teleradiology services. The Nebraska Statewide Telehealth Network is an important component in Nebraska's efforts to expand access to specialist services in rural areas of the state. The telehealth network in itself does not operate a data set. The network is complementary to the State's efforts to implement health information exchange, because through health information exchange, electronic health records can be made available in the treatment setting to enhance the remote care provided.

Integrating with Medicaid

The Nebraska Medicaid Program (Medicaid) is a member of the e-Health Council. The Director of Medicaid holds a seat on the NeHII Board of Directors. Medicaid is undertaking a significant planning effort related to system support that places it in an ideal position to design the development and ultimate adoption of a system suite to accommodate the various components of the e-health objectives and to enhance its contributions to the state-wide HIE effort. In that regard, Medicaid has submitted a HIT Planning APD (Advanced Planning Document) to the Centers for Medicare and Medicaid Services (CMS) to initiate the process to access funds available only through state

Medicaid agencies. In the short term, these planning funds will allow Medicaid to plan the approach to development of the Medicaid role in both supporting the statewide integrator in achievement of their stated goals, and to explore the possibilities for Medicaid in reaching its goals to fully adopt electronic capabilities commensurate with national HIT/HIE objectives. In the longer term, additional HIT/HIE funds are available through CMS to Medicaid agencies that will considerably further the development and implementation of e-health capabilities.

Supporting Quality Improvement

Effective health information exchange will utilize the underlying technology to improve the health of all Nebraskans while transforming health care delivery through the meaningful use of health information. The overall purpose is to provide quality outcomes as efficiently as possible. In its role as a facilitator of improved health care quality, the health information exchange enhances the use, effectiveness and, therefore, the *value* of the information. All investments in it must ultimately be linked to quality improvement and success of the endeavor determined by clear advancements in the safety, quality, efficiency and effectiveness of care.

As Nebraska's health information exchange evolves to support meaningful use it shall promote adherence to evidence-based care through the use of clinical decision support tools that are consensus-based, developed by expert entities, such as leading professional societies, and which target quality measures endorsed through a stakeholder consensus process, e.g. National Quality Forum (NQF).

Supporting Meaningful Use

Demonstrating Meaningful Use of certified electronic health records is central to ARRA-funded programs, including the State HIE Cooperative Agreement program. Criteria for demonstrating Meaningful Use are being developed by the Centers for Medicare and Medicaid Services (CMS). The American Recovery and Reinvestment Act of 2009 authorizes the Centers for Medicare & Medicaid Services (CMS) to provide reimbursement incentives for eligible professionals and hospitals who demonstrate Meaningful Use of certified electronic health records. Meaningful Use will be phased in three stages.

Nebraska's statewide health information exchange is committed to providing the applications necessary for eligible providers and hospitals to meet Stage One requirements in year one. NeHIE already offers some of the applications required for Meaningful Use. These applications include:

- E-prescribing;
- Electronically exchanging key clinical information; and
- Electronically checking insurance eligibility information.

Future applications include:

- Reporting quality measures to CMS or the States;
- Sending reminders to patients per patient preference for preventive/ follow up care;
- Checking insurance eligibility electronically from public and private payers;
- Submitting claims electronically to public and private payers;

-
- Providing patients with an electronic copy of their health information upon request;
 - Submitting electronic data to immunization registries and actual submission where required and accepted;
 - Providing electronic submission of reportable lab results (as required by state or local law) to public health agencies and actual submission where it can be received; and
 - Providing electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice.

This list could change in response to any changes made to the Meaningful Use requirements.

All providers, regardless of their ability to qualify for Medicaid or Medicare incentives, will be able to utilize the expanded services available through NeHII.

Integrating with Public Health

Public health is a state responsibility and needs to be integrated into efforts to create a statewide health information network. Nebraska has invested in several systems which will interface with the statewide health information network. Nebraska was one of the beta sites for the National Electronic Disease Surveillance System development and currently receives 90% of all reportable diseases through electronic information exchange. Nebraska has developed a centralized immunization registry and collects syndromic surveillance data.

The Public Health/eHealth Work Group identified opportunities to develop interfaces between health information exchanges and public health data systems. The Stage One public health objectives which are included in the current definition of Meaningful Use were identified as the highest priority. Those objectives are listed below:

- Capability to submit electronic data to immunization registries and actual submission where required and accepted;
- Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice; and
- Capability to provide electronic submission of reportable lab results (as required by state or local law) to public health agencies and actual submission where it can be received (hospitals only).

Discussions with public health representatives are underway to determine public health requirements and to develop a solution that meets those requirements.

Coordinating with Other Efforts

Nebraska will coordinate with other efforts in the state related to health information exchange. The technology extension center serving Nebraska will likely be a key component in helping providers adopt electronic health records. CIMRO of Nebraska was awarded a grant from the Office of the National Coordinator to provide technical assistance to providers in adopting electronic medical records. CIMRO of Nebraska doing business as the Wide River Technology Extension Center will be a key player in the state's health IT efforts. NeHII and the eHealth Council will work with Wide River

Technology Extension Center to coordinate efforts. NeHII and the eHealth Council will also work with Metro Community College, a participant in the Community College Consortia program. Issues related to broadband access will be addressed through Nebraska's Broadband Mapping and Planning project.

Providing and Documenting Value

Health information exchange must offer value to consumers, providers, payers, public health, and other stakeholders. Offering value is the only way to achieve a critical mass of users and to develop a sustainable revenue stream. The business models of eBHIN and NeHII are based on the development of solutions which are cost-effective and provide the greatest return on investment. The criteria for achieving Meaningful Use will likely expand the number of services which are cost-effective.

Demonstrating Sustainability

Recipients of funding from the State HIE Cooperative Agreement program have demonstrated sustainability. Nebraska's integrator, NeHII, has been operational since the Spring of 2009 and has a sustainable business model. Future growth will solidify NeHII's sustainability. Although not yet operational, eBHIN has developed a business plan showing sustainability.

Safeguarding Privacy and Security

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. Additionally, the Nebraska Department of Health and Human Services' Licensure Unit, the Nebraska Attorney General's Office, and the U. S. Department of Health and Human Services' Office of Civil Rights share responsibilities for health information security and privacy enforcement.

Nebraska has laid the groundwork for consumer and provider education efforts. The Nebraska Health Information Security and Privacy Work Group has developed a consumer brochure and content for a website with information on health information security and privacy. Funds from the State HIE Cooperative Agreement Program will be used to develop the website and to print brochures. NeHII has also developed marketing materials for consumers. The NeHII website (www.nehii.org) contains a consumer brochure, online opt-out form, and a list of participating providers. NeHII has also designed a marketing campaign to inform consumers about NeHII as NeHII rolls out across the state.

NeHII, the state's regional and specialty exchanges, and the eHealth Council will work together to provide information to consumers and to support consumer engagement. The draft definition of Meaningful Use included in the Notice of Proposed Rule Making which was published in December 2009 includes several objectives related to the engagement of patients and families. These objectives are being incorporated into the business and technical operations of NeHII and eBHIN. Changes may be need to be made to Nebraska's plans as the definition of Meaningful Use is further revised and finalized.

Complying with Standards and Certification Processes

NeHIE and the state's regional and specialty exchanges are committed to the utilization of national standards and certification. NeHIE is committed to exceeding HHS-adopted interoperability standards. In its current production state, NeHIE requires communication using standard transactions sets such as X12, HL7, NCPDP, and HITSP. NeHIE also plans to actively pursue HIE certification through CCHIT as soon as standards are released. The EMR product currently offered by NeHIE and its vendor Axolotl is CCHIT certified for ambulatory care. Finally, NeHIE will work with Axolotl to achieve EHNAC certification in 2010, and will continue to work with national organizations to review, refine, and meet standard privacy and security requirements.

Providing Governance

In Nebraska, both the private and public sectors will share responsibilities for governance of health information exchange. This type of relationship between state government and the private sector has been described as the Private Sector-Led Electronic HIE with Government Collaboration model.

Coordination with Related Programs

Nebraskans have a history of working cooperatively, dating back to the days of the pioneers. That spirit of cooperation still exists today. Nebraskans have learned the importance of working cooperatively and leveraging resources. The State of Nebraska will coordinate health IT ARRA-funded activities through the Nebraska Information Technology Commission’s eHealth Council and the State HIT Coordinator. The eHealth Council will regularly receive reports on the following programs and will discuss coordination of efforts. Lt. Governor Sheehy, Nebraska’s State HIT Coordinator, will be actively involved in addressing any coordination issues identified by the eHealth Council. As the statewide integrator and lead HIE, NeHII will also be involved in coordination activities.

The table below summarizes how efforts will be coordinated. The programs included in the table have been identified as key programs with which the Nebraska will coordinate health information exchange efforts. This list may be revised as necessary.

Program	Key Entity	Coordination
Broadband		
Broadband Mapping and Planning	Nebraska Public Service Commission in cooperation with the University of Nebraska, Nebraska Information Technology Commission, and Nebraska Department of Economic Development	<p>Lt. Governor Rick Sheehy and NITC staff are involved in both broadband and eHealth initiatives and are coordinating eHealth and broadband activities as needed. Lt. Governor Sheehy and NITC staff will coordinate through e-mail, informal conversations, and occasional meetings as necessary. Regular updates will be given to the eHealth Council.</p> <p>Through the broadband planning program, regional technology committees will be formed. The regional technology committees will provide a vehicle for addressing any issues with broadband access encountered.</p> <p>The eHealth Council will regularly receive reports and will discuss coordination of efforts.</p>
BTOP/BIP	TBA	Lt. Governor Sheehy and NITC staff are actively involved in broadband discussions in the state and will coordinate through e-mail, informal conversations, and occasional

		<p>meetings as necessary.</p> <p>The eHealth Council will regularly receive reports and will discuss coordination of efforts.</p>
Health IT		
Regional Extension Center	Wide River Technology Extension Center	<p>Coordination with Wide River Technology Extension Center will be done both formally and informally. Wide River Technology Extension Center is represented on the NITC eHealth Council. The NITC, NeHII, and eBHIN participate in Wide River Technology Extension Center's advisory board. The eHealth Council will regularly receive reports and will discuss coordination of efforts.</p> <p>More detailed information can be found in the operational plan.</p>
Community College Consortium Program	Metro Community College	<p>Metro Community College in Omaha is participating in the Community College Consortium program. Several members of the eHealth Council have been invited to participate in the program's advisory group.</p> <p>The eHealth Council will regularly receive reports and will discuss coordination of efforts.</p>
Beacon Communities	TBA	<p>If Nebraska receives a Beacon Communities grant, coordination will be done both formally and informally. Representatives of the state's two applicants in the most recent round are on the eHealth Council. As necessary, NITC and NeHII staff will coordinate through e-mail, informal conversations, and occasional meetings as necessary.</p> <p>The eHealth Council will regularly receive reports and will discuss</p>

		coordination of efforts.
Federally Funded Health Care Programs		
Medicaid	Nebraska Department of Health and Human Services, Division of Medicaid and Long-Term Care	<p>Coordination with Medicaid will be done both formally and informally. The Medicaid Director is a member of the eHealth Council and the NeHII Board of Directors. Medicaid and Nebraska Department of Health and Human Services staff members have participated in the work group responsible for developing the state's eHealth plans.</p> <p>Lt. Governor Sheehy and the Governor's Office communicate regularly with the eHealth Manager and Medicaid Director to discuss any issues related to coordination.</p> <p>The eHealth Council will regularly receive reports and will discuss coordination of efforts.</p>
Epidemiology and Laboratory Capacity Cooperative Agreement Program	Nebraska Department of Health and Services, Division of Public Health	The eHealth Council will regularly receive reports and will discuss coordination of efforts.
Medicare		TBD in year 2
VA		TBD in year 2
DOD		TBD in year 2
IHS		TBD in year 2

Wide River Technology Extension Center

The eHealth Council and NeHII will work closely with the Regional Extension Center for Nebraska. Discussions with CIMRO of Nebraska/Wide River Technology Extension Center began with CIMRO's submission of a pre-application and have continued.

Roles of Partners

eHealth Council. The eHealth Council will facilitate coordination with NeHII, the state's regional and specialty exchanges, and Wide River Technology Extension Center. The eHealth Council will also provide oversight for the implementation of the State HIE Cooperative Agreement Program. In that role, the eHealth Council may be involved in

identifying and resolving any issues identified and sharing feedback as part of formative evaluation.

NeHII. As the statewide integrator, NeHII will have responsibility for implementation of the State HIE Cooperative Agreement Program. NeHII will be involved in all phases of provider implementation of health information exchange. NeHII and Wide River Technology Extension Center will be jointly responsible for coordination of implementation activities.

Regional and Specialty Exchanges. Efforts will be made to involve the regional and specialty exchanges in all phases of implementation. eBHIN is represented on Wide River Technology Extension Center.

Wide River Technology Extension Center. Wide River Technology Extension Center will be actively involved in all phases of provider implementation of Electronic Health Records. NeHII and Wide River Technology Extension Center will be jointly responsible for coordination of implementation activities.

Department of Health and Human Services (DHHS) Division of Medicaid and Long-Term Care. The DHHS Division of Medicaid and Long-Term care will partner in outreach efforts to providers.

Points of Coordination and Time Line

Planning and Start Up Phase (Dec 2009-July 2010)

- **Overlapping Partnerships.** The NeHII Board of Directors, the NITC eHealth Council, and Wide River Technology Extension Center Advisory Board have several overlapping members and member organizations. A chart at the end of this section shows the overlapping membership of the NeHII Board of Directors, the eHealth Council, and the Wide River Technology Extension Center Advisory Board.
- **Coordination of Activities by Staff and Advisory Boards.** Staff and advisory boards will work to coordinate activities and planning.
- **Cross Training of Staff.** Staff of NeHII and Wide River Technology Extension Center will be cross-trained so that they can better coordinate activities and answer questions of providers. Staff of the state's regional and specialty exchanges will also be invited to participate in cross training.
- **Alignment of Strategic Initiatives.** The eHealth Council, Wide River Technology Extension Center, and NeHII will work together to prioritize activities and align strategic initiatives.

Marketing and Educational Activities (April 2010-December 2012)

- **Cross Referrals and Cooperative Marketing Efforts.** Wide River Technology Extension Center will work with NeHII and the state's regional and specialty exchanges on cooperative marketing efforts and cross-referrals. The DHHS Division of Medicaid and Long-Term Care, the Nebraska Hospital Association, and the Nebraska Medical Association have also expressed interest in participating in cooperative marketing efforts.

Provider Implementation (May 2010-December 2014)

(NeHII, Regional and Specialty Exchanges, Wide River Technology Extension Center)

- **Coordination of Provider Training and Implementation Activities.** Wide River Technology Extension Center, NeHII and the state’s regional and specialty exchanges will coordinate provider training and implementation activities.
- **Identification and Resolution of Issues.** Wide River Technology Extension Center, NeHII, and the state’s regional and specialty exchanges will cooperatively identify any issues providers may have and work together to resolve those issues.
- **Sharing of Best Practices and Lessons Learned.** Wide River Technology Extension Center, NeHII, and the state’s regional and specialty exchanges will share best practices and lessons learned. The eHealth Council will assist partners in disseminating best practices and lessons learned.

Provider Post Implementation (September 2010-December 2014)

- **Sharing Feedback.** Wide River Technology Extension Center, NeHII and the state’s regional and specialty exchanges will share feedback as part of formative evaluation.
- **Sharing Success Stories.** Wide River Technology Extension Center, NeHII, and the state’s regional and specialty exchanges will share best practices and lessons learned. The eHealth Council will assist partners in disseminating best practices and lessons learned.

Membership

The following table illustrates the overlapping membership of the NeHII Board of Directors, eHealth Council, and Wide River Technology Extension Center.

NeHII Board of Directors	NITC eHealth Council	Wide River Technology Extension Center-Proposed Advisory Board Membership
<p>NeHII Elected Directors</p> <ul style="list-style-type: none"> • President: Harris Frankel, MD, <i>Goldner, Cooper, Cotton, Sundell, Frankel, Franco Neurologists, Omaha, NE</i> • Vice President: Ken Lawonn, <i>Alegent Health System, Omaha, NE</i> • Secretary: George Sullivan, Mary Lanning Memorial Hospital, 	<p>The State of Nebraska/Federal Government</p> <ul style="list-style-type: none"> • Steve Henderson, Office of the CIO • Senator Annette Dubas, Nebraska Legislature • Steve Urosevich, Department of Correctional Services • Congressman Jeff Fortenberry, represented by Marie Woodhead 	<ul style="list-style-type: none"> • <i>Nebraska Medical Association</i> • <i>Nebraska Hospital Association</i> • <i>Nebraska Pharmacists Association</i> • <i>Nebraska Rural Health Association</i> • <i>Nebraska Health Information Initiative</i> • COPIC • <i>University of Nebraska Medical Center, Center for Rural</i>

<p>Hastings, NE</p> <ul style="list-style-type: none"> • Treasurer: Steve Martin, <i>Blue Cross and Blue Shield of Nebraska</i> • Delane Wycoff, MD - <i>Pathology Services PC, North Platte, NE</i> • Michael Westcott, MD - Alegent Health System, Omaha, NE • Lisa Bewley - Regional West Medical Center, Scottsbluff, NE • Roger Hertz - Methodist Health System, Omaha, NE • Bill Dinsmoor - The Nebraska Medical Center, Omaha, NE • Ken Foster – BryanLGH Health System, Lincoln, NE • Gary Perkins – Children’s Hospital & Medical Center, Omaha, NE • Vivianne Chaumont, <i>Director of DHHS Division of Medicaid and Long-Term Care, Lincoln, NE</i> <p>NeHII Appointed Directors</p> <ul style="list-style-type: none"> • Lt. Gov. Rick Sheehy, <i>Chair, NITC</i> • Kevin Conway - Professional Organizations, <i>Nebraska Hospital Association, Lincoln, NE</i> • Deb Bass - Executive Director, Bass & Associates Inc., Omaha, NE • Sandy Johnson, Consumer 	<p>Health Care Providers</p> <ul style="list-style-type: none"> • Lianne Stevens, The Nebraska Medical Center • Dr. Delane Wycoff, Pathology Services, PC and <i>Nebraska Medical Association</i> <ul style="list-style-type: none"> ○ Dr. Harris A. Frankel, <i>Goldner, Cooper, Cotton, Sundell, Frankel, Franco Neurologists, Omaha, NE and Nebraska Medical Association (alternate)</i> • Joni Cover, <i>Nebraska Pharmacists Association</i> • September Stone, Nebraska Health Care Association • John Roberts, <i>Nebraska Rural Health Association</i> <p>eHealth Initiatives</p> <ul style="list-style-type: none"> • Donna Hammack, Nebraska Statewide Telehealth Network and St. Elizabeth Foundation • Ken Lawonn, <i>NeHII</i> and <i>Alegent Health</i> • Harold Krueger, Western Nebraska Health Information Exchange and Chadron Community Hospital • Wende Baker, <i>Electronic Behavioral Health Information Network</i> and Region V Systems <p>Public Health</p> <ul style="list-style-type: none"> • Sue Medinger, Department of Health and Human Services, Public Health Assurance • Jeff Kuhr, Three Rivers Public Health Department, 	<p><i>Health Research</i></p> <ul style="list-style-type: none"> • <i>Electronic Behavioral Health Information Network</i> • <i>State of Nebraska Department of Health and Human Services, Division of Medicaid and Long-Term Care</i> • <i>Nebraska Information Technology Commission e-Health Council</i>
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<p>Representative</p>	<p>Fremont</p> <ul style="list-style-type: none"> ○ Rita Parris, Public Health Association of Nebraska, alternate • Kay Oestmann, Southeast District Health Department <ul style="list-style-type: none"> ○ Shirleen Smith, West Central District Health Department, North Platte, alternate • Dr. Keith Mueller, <i>UNMC College of Public Health and Center for Rural Health Research</i> • Joel Dougherty, OneWorld community Health Centers <p>Payers and Employers</p> <ul style="list-style-type: none"> ○ Susan Courtney, <i>Blue Cross Blue Shield</i> ○ Vivianne Chaumont, Department of Health And Human Services, <i>DHHS Division of Medicaid and Long-Term Care</i> <p>Consumers</p> <ul style="list-style-type: none"> ○ Nancy Shank, Public Policy Center ○ Alice Henneman, University of Nebraska-Lincoln Extension in Lancaster County <p>Resource Providers, Experts, and Others</p> <ul style="list-style-type: none"> ○ Joyce Beck, Thayer County Health System ○ Kimberly Galt, Creighton University School of Pharmacy and Health Professions ○ <i>Wide River Technology Center</i> 	
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	<i>Lt. Governor Rick Sheehy, Chair, NITC</i>	
	<i>Anne Byers, NITC and eHealth Council Staff</i>	

Additionally, Wide River Technology Extension Center and the NITC eHealth Council are both represented on the NeHII Consumer Advisory Council.

Medicaid

The eHealth Council recognizes the significant role of the Medicaid program in setting state-level health information technology policy and in promoting the adoption and meaningful use of electronic health records. Medicaid and DHHS staff participate in state HIE cooperative agreement program activities on an ongoing basis at a variety of levels and capacities. The Director of Medicaid holds a seat on the NITC eHealth Council and NeHII Board of Directors. Medicaid and DHHS staff participated in the workgroup responsible for developing the state's eHealth plans. Additional and ongoing coordination with Medicaid will occur as the eHealth plans are implemented, new work groups are formed, and as Medicaid develops the State Medicaid HIT Plan.

The following table outlines the required activities and the coordination that is occurring or will be conducted with the Medicaid program.

Required Activities	Coordination
Provide representation of the state Medicaid program in governance structure	The Director of Medicaid holds a seat on the NeHII Board of Directors and on the NITC eHealth Council.
Coordinate provider outreach and communications with the State Medicaid Program	Medicaid and DHHS staff participated in the work group responsible for developing the state's eHealth plans and will continue to participate in implementation activities and work groups established by the eHealth Council, including provider outreach and communication efforts.
Identify common business or health care outcome priorities	Medicaid and DHHS staff collaborated in developing the health information technology goals, strategies, priorities and objectives reflected in the state's eHealth plan and will continue active participation as the plan is implemented.
Leverage, participate in and support all Beacon Communities, Regional Extension Centers and ONC funded workforce projects in its jurisdiction	Medicaid is represented on the Advisory Council of the Wide River Technical Extension Center, the state's regional extension center grantee. The eHealth Council will continue to promote and support federal HIT initiatives and projects impacting Nebraskans.
Align efforts with State Medicaid agency to meet Medicaid requirements for meaningful use	The eHealth Council recognizes the importance of Medicaid in promoting the adoption and meaningful use of electronic health records and will continue to coordinate with Medicaid to support the goals and administrative requirements of the program.

Workforce Development Initiatives

The eHealth Council and NeHII welcome the opportunity to coordinate with developing workforce development initiatives. Metro Community College is participating in the Community College Consortia program. Partnerships and roles of partners will become better defined as workforce development initiatives are further developed.

Nebraska Information Technology Commission and eHealth Council. The eHealth Council includes representatives of the University of Nebraska, University of Nebraska Medical Center, and Creighton University. Additionally, eHealth Council work group members have included representatives of the University of Nebraska Medical Center, Creighton University, and Bellevue University. In addition to the eHealth Council, the Nebraska Information Technology Commission also has an Education Council with representatives of K-12 and higher education. These contacts will facilitate coordination with educational institutions participating in workforce development initiatives, providers, and health information exchanges. The eHealth Council will serve as a convener and facilitator.

NeHII. As the statewide integrator, NeHII has established contacts with Metro Community College. NeHII will play a key role in working both with providers and educational institutions to place graduates. As curriculum development initiatives unfold, NeHII will play a role in working with educational institutions on curriculum development.

Regional and Specialty Health Information Exchanges. eBHIN serves as an important connection between providers.

Participating Educational Institutions. Metro Community College is participating in the Community College Consortia program. Nebraska has five other community colleges which offer medical technology programs. Bellevue University offers a management program in health informatics. Nebraska also has two medical schools: Creighton University and the University of Nebraska Medical Center.

Broadband Mapping and Access

The Nebraska Public Service Commission received funding from the National Telecommunications and Information Administration (NTIA) for a broadband mapping project in early 2010. The project includes a broadband planning component which will identify barriers to the adoption of broadband and IT services, create and facilitate local technology planning teams, and collaborate with broadband service providers to encourage broadband deployment. Issues related to broadband access for health care providers will be addressed through local technology planning teams. Nebraska successfully demonstrated the effectiveness of local technology planning teams in 2002-2005. The planning component will utilize the following approaches:

1. Regional planning teams will be formed to conduct regional assessments, prioritize needs, and develop strategies to address needs.
2. Nebraskans will be surveyed about their computer and Internet usage, challenges and desires for the future.
3. Regional forums will be conducted to present broadband mapping and mail survey results, to solicit feedback, and to kick off regional planning efforts.
4. Businesses will be surveyed through the Business Retention and Expansion process to identify the strengths and challenges they face in utilizing technology.
5. Seven to 10 focus groups will be held with anchor institutions and utility providers as well as populations with low usage rates to gain understanding into the barriers from their perspective.
6. Regional technology plans as well as a statewide report and recommendations will be developed and presented to the Nebraska Information Technology Commission, Nebraska Public Service Commission, Department of Economic Development and University of Nebraska Lincoln. These plans will be made publicly available through the project website.

Roles of Partners

Nebraska Public Service Commission. The Nebraska Public Service Commission is spearheading the state's broadband mapping initiative and will be involved in an advisory role in the broadband planning component. The Nebraska Public Service Commission is represented on the project's advisory group, the NITC Community Council. Reports and recommendations from the project will be shared with the Nebraska Public Service Commission.

Nebraska Information Technology Commission (NITC). The mission of the Nebraska Information Technology Commission is to make the State of Nebraska's investment in information technology infrastructure more accessible and responsive to the needs of its citizens regardless of location while making government, education, health care and other services more efficient and cost effective. The Nebraska Information Technology Commission has advisory groups on state government, education, communities, eHealth, and GIS as well as a Technical Panel. The Nebraska Information Technology Commission (NITC) Community Council will act as the state's advisory group on

broadband planning. Other NITC advisory groups may also be consulted. Members of the Community Council represent libraries, economic development, workforce development, telecommunications providers, and the Nebraska Public Service Commission.

University of Nebraska Lincoln Extension (UNL Extension). University of Nebraska Lincoln is the land grant institution for the State of Nebraska. Extension Educators have facilitated technology planning, visioning, and taught information technology sessions ranging from the basics of using the Internet to teaching businesses e-commerce strategies. In addition, educators have created curriculum to help communities and businesses create online presences. University of Nebraska–Lincoln Extension’s mission is to help Nebraskans enhance their lives through research-based information. Local extension offices are located in 87 counties serving all 93 counties of the state.

State of Nebraska Department of Economic Department (DED). The Nebraska Department of Economic Development (DED) is the official lead economic development agency for Nebraska with approximately 70 staff to support all 93 counties. Created by the Legislature in 1967, DED’s emphasis is growing and diversifying the state’s “economic base.” DED provides quality leadership and services that enable Nebraska communities, businesses, and people to succeed in a global economy. The Department believes that broadband and information technology are the foundation for competing in the global economy and thus, support the utilization of broadband for a variety of efforts ranging from entrepreneurship to business recruitment.

The strategic partners have split responsibilities for carrying out this project in such a way that the strengths of each are fully maximized, and all partners have pledged significant resources to support this project. The partners will be responsible for recruitment of participants, volunteer coordination, technical assistance, and the hiring of a project manager. The project manager will be responsible for leadership of the project under the guidance of the Strategic Partners. This person will report to the Community Council - submitting reports to the PSC, NITC, UNL Extension and DED.

The strategic partners have a proven track record of promoting technology development in communities. The Nebraska Information Technology Commission Community Council, University of Nebraska, and Nebraska Department of Economic Development have partnered with other entities in the state including the Nebraska Public Service Commission to help communities and regions develop technology plans. From 2002-2005, project partners under the umbrella of Technologies Across Nebraska, helped 21 of 435 communities develop local plans to utilize technology to enhance development opportunities. Through the program, participating communities and regional groups receive a \$2,500 mini grant and assistance from the University of Nebraska Extension and the Nebraska Information Technology Commission. A detailed workbook helped simplify the assessment and planning process for communities. The impact of the program was significant in improving access to broadband services, identifying technology training needs, and jumpstarting community technology projects. Since then project partners have collaborated on several projects. Through the Podcasting Across Nebraska project, partners helped communities develop video and audio content to promote local attractions and events. More recently, partners have worked with Nebraska communities to develop websites as a tool for enhancing community growth.

Coordination with Other States

Nebraska has engaged in discussions with other states and is committed to coordinating efforts with other states. Some of the activities in which representatives of Nebraska have participated include:

- Health Information Security and Privacy Collaborative
- State Level HIE
- Axolotl Users Group
- National Standards Advisory Groups (CCHIT HIE Certification, Public Health Data Standards)

Technical Architecture

A statewide HIE is a “system of systems.” Through Nebraska’s statewide health information exchange, participating health information systems will work together within a defined architecture which consists of a set of principles, patterns and processes used to guide the exchange of health information.

Stakeholders include:

- Care delivery organizations and specialty providers;
- Organizations that operate personal health records (PHRs) and consumer applications;
- HIEs;
- Independent labs;
- Pharmacies;
- Physicians;
- Consumers;
- Clinics;
- Payers and pharmacy benefit managers;
- Public health; and
- Government Organizations.

Many of these organizations have their own health IT systems and networks. NeHII will provide the umbrella architecture to integrate these networks.

NeHII’s Hybrid Federated Model

NeHII, as the statewide integrator and lead HIE, will provide the technical infrastructure. NeHII utilizes a “hybrid-federated” method of data exchange where federated databases are stored in a common data center on separate edge servers to avoid co-mingling of data. The patient index, provider directory, and record locator service are all centralized to ensure efficient retrieval of information by the end user.

Some of the advantages of this model are:

- Improved public health disease surveillance;
- Reduced cost by avoiding data normalization;
- Enhance Security of patient clinical information;
- Efficient use of limited network bandwidth; and
- Greater flexibility and scalability for a statewide exchange.

Participating organizations, such as hospitals, labs, clinics, and government organizations create and maintain health information. These organizations are referred to as Data Providers. Each data provider connected to NeHII will be provisioned an edge server, a database server that resides outside the participants firewall in the

vendor's data center adding an additional layer of security. The data on this edge server will encompass Laboratory Reports, Radiology Reports, Transcription Reports, and Admission/Discharge/Transfer, or ADT, data. The servers are all located in a secure environment with complete backup and disaster recovery capability.

The edge servers are interconnected via a centralized Master Patient Index (MPI) and Record Locator Service (RLS). The edge server is populated using a secure Virtual Private Network, or VPN, in standard HL7 format. All data at rest or in motion is 128-bit encrypted, preventing access to the information without a unique key known only to NeHII users. As a part of the process to populate the edge server with clinical data, the Master Patient Index (MPI) and the Record Locator Service (RLS) are updated with index entries denoting that the patient has records available on a facility's edge server. These MPI and RLS indexes are maintained on the Interoperability Hub, and central application server which facilitates message transmission and fulfillment.

Providers and, eventually patients, will access the data stored in the exchange via an Application Service Provider, or ASP model. This model ensures the data is secure and readily accessible via the Internet, yet the data leaves no footprint at individual sites, thereby greatly reducing the risk of data being seen by those not permitted to view that data. To further enhance security of this sensitive data, Data Users will only be able to access the data if approved via the NeHII credentialing process. The following diagram illustrates NeHII's architecture.



The following table represents the different categories of users that access health information via NeHII:

Participant	Participant Type	Participant Description	Access Method
Healthcare Facility	Data Provider	Hospitals, Labs, Radiology Centers, 3 rd Party EMR	Edge servers populated via VPN connection, utilizing HL7 Standards
Physicians	Data User	Physicians	ASP via Internet
Public Health	Data User/Data Provider	State and Local Public Health, Immunization Registries	HL7 File Transfer; ASP via

			Internet
Health Plans	Data Provider	Insurance Companies	Flat File Eligibility Feed; X12 Standards
Patients	Data User	Healthcare Consumers	ASP via Internet
Partners	Data Provider/Data User	SimplyWell; PHR providers	To Be Determined
Regional & Specialty Health Information Exchanges	Data User & Data Provider	Electronic Behavioral Health Information Network	Edge servers populated via VPN connection, utilizing HL7 Standards; ASP via Internet

eBHIN's Enterprise Architecture

The eBHIN HIE will include software with enterprise architecture for the service area represented by Region V systems in southeast Nebraska and the behavioral healthcare providers contracting with the Region. The system is designed utilizing a core data set that is already in use by publicly funded behavioral health providers across the state. This will make it possible to offer these services to the other behavioral health regions and the providers they serve as time and resources allow. Enterprise architecture is a software solution that operates on a single database supporting the unique requirements of multiple organizations, multiple practices, and multiple locations. By implementing enterprise solutions, behavioral healthcare providers will cut costs, eliminate mistakes, improve consumer care, make smarter decisions, meet regularity requirements, and reduce time spent on clinical and administrative processes. Specifically the system will be able to:

- Maintain continuity of data across providers and the Regions;
- Reduce redundant data entry of ASO required data;
- Improve consumer safety through clinical data sharing;
- Gain the ability to report at any level (provider, Region, system, state);
- Decrease cost of deploying and maintaining software across Regions; and
- Accomplish all of the above while complying with HIPAA.

With patient consent, eBHIN will be able to provide a behavioral health care record to NeHII through an interface and will also be able to import medical records into the Central Data Repository (CDR), thereby making medical treatment records available to behavioral health providers.

eBHIN's technical architecture is illustrated below.



Additional information on eBHIN's technical architecture can be found in the appendix.

Protection of Health Data

NeHII

Protection of personal health information has been a critical priority of NeHII since its inception. Consumer trust in the exchange of this sensitive data is required to encourage participation and buy-in among citizens and users alike. Consumer participation is essential in physician adoption activities, as all need to confidently participate to ensure the system and its data are used to the fullest efficiency available. To ensure that all records contained in NeHII are secure, NeHII has undertaken several key steps in policy and enforcement tracts.

Prior to any data being exchanged, NeHII gathered privacy and security officers from five hospitals and a health plan together with healthcare legal experts to develop the NeHII Privacy Policies, NeHII System Security Policies, and NeHII Baseline Security Policies. These policies are now considered national standards as other states and HIEs acquire the rights to use these same policies by executing license agreements with NeHII. The policies are provided free of charge to any non-profit HIE upon agreement that the HIE will share any changes made back with NeHII.

To become registered to use NeHII, all participants must sign a participation agreement with NeHII that in part requires them to adhere to the privacy and security policies. In addition, each time a user retrieves information about a patient from the system, they are required to accept the Terms and Conditions, and to certify they have a treatment or payment relationship with the patient. All access is logged in the NeHII Audit database, and reports are generated to ensure appropriate use is occurring.

NeHII hopes to continue driving the discussion of the privacy and security of health information through upcoming meetings with the Office of the National Coordination and other HIES across the country.

From a technological perspective, NeHII relies on Axolotl's proven security framework, currently successfully running in production in many HIEs across the country. This framework utilizes a number of functions to ensure the data is used according to the published privacy and security policies. These are outlined below:

Application	Description	Functionality
Master Patient Index	Index of all patients with records in the system	Ensures patients with records at multiple facilities are combined into one comprehensive record
Record Locator Service	Index of all clinical records in the system	Speeds retrieval of records while ensuring the records are attached to the correct patient
User Authentication	Login and password access requirements	Ensures participants can only access approved records with patient consent
Audit Logs	Logs of every activity undertaken	Used to report access and trigger alerts of potential unauthorized access

In addition, there are a number of procedural functions that are used to validate users, and to ensure those users are using the system appropriately.

Procedure	Description	Functionality
Credentialing	Verification of User Identity	Ensures only physicians or staff are using the HIE—and only for appropriate uses
Privacy Policies	Board-approved Privacy Requirements	Places requirements on users to protect patient records
Security Policies	Board-approved Security Requirements	Places requirements on users regarding security of the system
Terms of Use	Rights of the user	Must be acknowledged at every use
Privacy & Security Committee	Board Committee as outlined in the bylaws	New functionality must be approved by this committee in addition to the Board.
Privacy Officer	Board appointed Officer responsible for Privacy of records	Sub-contract from one of the hospital participants
Security Officer	Board appointed Officer responsible for Security of the application	Sub-contract from one of the hospital participants

eBHIN

Protection of personal health information is also a priority for eBHIN. eBHIN will ensure the physical security of data through a combination of policies, procedures, and physical restrictions to the data center and remote locations. Data will be secured in a controlled environment, protected from unauthorized access. Daily backups will be secured in an off-site vault to ensure survivability in the event of system failure or disaster. Policies and procedures will be in place to manage compliance with HIPPA standards at both the data center and the remote locations. All access will require two levels of authentication. Passwords will be “complex” and set to be changed periodically by the user.

Data will be encrypted using an SSL connection between the user and the web server. In addition, identity will be masked through the use of a proxy server. This combination will make the data meaningless to an outsider and also protect the identity of eBHIN as the owner of the data.

SSL ensures that whatever you transfer between a browser and web server is secure. Even if someone were to intercept it, they would see only meaningless code since it's encrypted. A proxy server is a mediating server between a browser and web server. It will be used to disguise the IP addresses and other information related to eBHIN.

For wireless connections, routers will be secured using two level authentication. Data will be encrypted. The wireless network will be monitored for intruders. Downloads to devices will be encrypted and policies set to require periodic changes to passwords.

In addition, data traffic will be scanned for such things as viruses, spyware, adware, malware, and Trojans using a commercially available suite of protection products such as MacAfee.

Alignment with NHIN

NeHII currently has clinical records for over 1.5 million patients within the exchange. Of those, only 1.1 million are Nebraska residents, meaning NeHII is currently exchanged medical records across state-lines for more than 400K patients. A majority of these patients come from Iowa, which shares a common border with Nebraska's largest city of Omaha. However, other states are represented as patients travel to Nebraska for treatment.

In addition, NeHII currently received data from hospitals outside the state through affiliations with member facilities. Alegend Health in Omaha, for instance owns hospitals in Iowa, and data from those hospitals can be accessed through the NeHII exchange.

Finally, NeHII has been recognized nationally as a leader in HIE, and the success of NeHII has opened many avenues for the exchange regarding state-to-state collaboration. NeHII is currently working with representative of Iowa, Kansas, Missouri, Colorado, Wyoming, South Dakota, North Dakota, and Minnesota to use the NeHII infrastructure in combination with the Nationwide Health Information Network (NHIN) to create a backbone for sharing health information regionally.

To facilitate this, NeHII will purchase and install an Advanced Interoperability Hub from its vendor, Axolotl. This hub facilitates the connection to the NHIN using standard technologies, and provides a seamless gateway for NeHII participants to query results across HIEs, as well as push results to specific physicians in other states. Other states and HIEs can similarly use the NHIN to access records from NeHII. As referral patterns adjust and patients seek out the highest quality healthcare available, interoperability between HIEs will be a necessary component to ensuring quality care for all patients.

eBHIN intends to participate in state level HIE, regional and national HIE's via an interface with the NeHII HIE system. As work continues by government and industry to develop a national standard for health information exchange, EBHIN will monitor those efforts and adopt standards as they become available. Toward that end, EBHIN has partnered with a nationally recognized software provider, NextGen Healthcare Information Systems, with experience in deployment of HIE's, and also a CCHIT compliant EHR. To make adoption of future standards as efficient as possible, EBHIN intends to utilize only existing industry-standard programming languages, tools, database models and protocols.

Technology Deployment

Technical Solutions for HIE

In its role as integrator for the State of Nebraska, NeHII has implemented and will continue to implement a diverse set of technical solutions to meet the needs of Nebraska providers. These solutions will enable providers to not only provide exceptional care to their patients, but also meet the impending requirements of Meaningful Use. The following paragraphs discuss how these technical solutions are implemented and used by Nebraska providers.

Utilizing NeHII as the Statewide Integrator

As the statewide integrator and lead HIE, NeHII will be responsible for implementing statewide health information exchange through the federally funded State Health Information Exchange Cooperative Agreement program. NeHII will serve two functions: (a) as an integrator for health providers, health organizations and health information exchanges requesting facilitation to connect to the NHIN and/or with each other, and (b) as a health information exchange offering services in its own right. NeHII will provide the technical infrastructure for the sharing of health information throughout the state.

A statewide integrator connects regional and specialty health information exchanges, public health systems, integrated delivery systems, and other health information systems into an integrated system. It is an efficient and effective way to leverage investments in health information technology made by disparate stakeholders. From its inception, NeHII has envisioned improving health outcomes across the state through the exchange of health information. As the only active health information exchange with a statewide vision, the Nebraska Health Information Initiative (NeHII) is well-positioned to serve as the statewide integrator.

In an effort to ensure that all stakeholders have a voice within the exchange, and that all ideas are considered, the NeHII Board of Directors has setup a number of committees and councils to provide feedback on the day-to-day operations of the exchange. Members of the other exchanges, public health, the state Department of Health and Human Services, and the State Office of the CIO all participate in these committees and attend the monthly meetings. These committees and councils include:

- Technical Committee;
- Privacy and Security Committee;
- Consumer Advisory Council;
- Professional Association Advisory Council;
- Health Information Exchange Advisory Council;
- Finance Committee; and
- Executive Committee.

NeHII utilizes Axolotl's health information exchange services. Axolotl has been providing health information exchange solutions to meet the needs of physicians, hospitals, regional health information organizations (RHIOs) and statewide HIEs for 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.

HIE Services

The following table reflects the functionality and availability of HIE services through NeHII.

Functionality	Availability	Notes
Physician Referral / Correspondence	Available Today	<p>The EMR product supplied by Axolotl allows for physicians to use a CCHIT-Certified EMR which automatically interacts with the Virtual Health Record. Physicians have the ability to send results to other physicians regardless of whether or not they participate in the HIE. When a physician refers a patient to another physician this feature can support the elimination of duplicate testing and provides the physician pertinent health information at the point of care.</p> <p>NeHII can automatically send results to third party EMRs allowing personal health information about a patient be stored in one location.</p>

Medication and Fill History Query	Available Today	NeHII allows a physician to see medication history for the previous 18 months, gathered from Pharmacy Benefit Managers.
ePrescribe	Available Today	The e-Prescribing product allows physicians to prescribe medications electronically while providing the ability to query on formulary and pricing information for the patient. The system will automatically display if a particular drug is on formulary, preferred and not preferred, allowing physicians to work with their patients in selecting the most economical and feasible medication. The system will also provide decision support in situations where there is a contraindication for the patient such as allergy or adverse reaction.
Eligibility Query	Available Today	
Results to third party EMRs	Available Today	
Clinical Results Management	Available Today	
Advanced Interoperability Hub	9/30/2010	
CPOE	9/30/2010	
Disease Registry	9/30/2010	
Reporting Hub	12/30/2010	

Data Provider Implementation

As new hospitals join NeHII, a project manager is assigned for NeHII to guide the implementation and facilitate communications between the hospital and Axolotl. The project manager creates a project work plan, sets up weekly implementation meetings, and begins the process of analyzing the current systems to understand the specific requirements for implementation.

In addition, the hospital participant will begin working with their EMR vendor to make any required changes locally to facilitate the HL7 communications. While these activities are ongoing, lab personnel will complete a cross walk of the LOINC codes to local codes, ensuring standardization across NeHII when it comes to lab tests and results.

Once all setup activities have been completed and data begins transmitting to the test server, NeHII will continue to work with the hospital staff to test the results and ensure all data is being displayed accurately for the correct patient. This testing typically takes 6 to 8 weeks. Following all required signoffs, the implementation plan completes with a bulk

load of the last 6 months of Admission/Discharge/Transfer data, and the connection of the VPN tunnels to the production server. At this point, the hospital is live on NeHII, and all clinical results are discoverable by NeHII participants.

Data User Training

The process for adding a physician or provider user to NeHII is much simpler, and takes between 2 and 8 hours of intense training. This training is typically spread out over a number of weeks to ensure proper use and all questions are answered. All training occurs at the provider's location, and is completed by a NeHII representative skilled in the use of the system.

Enabling Meaningful Use Criteria

Demonstrating Meaningful Use of certified electronic health records is central to ARRA-funded programs, including the State HIE Cooperative Agreement program. Criteria for demonstrating Meaningful Use are being developed by the Centers for Medicare and Medicaid Services (CMS). The American Recovery and Reinvestment Act of 2009 authorizes the Centers for Medicare & Medicaid Services (CMS) to provide reimbursement incentives for eligible professionals and hospitals who demonstrate Meaningful Use of certified electronic health records.

Hospitals can begin qualifying for Meaningful Use incentives starting in fiscal year 2011 which starts Oct. 1, 2010. Eligible providers can begin qualifying for Meaningful Use incentives starting in calendar year 2011. For the first payment year, the EHR reporting period is any continuous 90-day period within the first payment year. So the latest date that hospitals can start their 90 day reporting period and qualify is roughly late June/very early July 2011. The latest date that eligible providers can start their 90 day reporting period and qualify is roughly late September/very early October 2011.

The following table summarizes the start dates by provider type.

Provider Type	Incentives Begin	Latest Approximate Start Date for Year 1 Incentives
Hospitals	FY 2011—Oct. 2010	Late June/Very Early July 2011
Eligible Providers	CY 2011—Jan. 2011	Late September/Very Early October 2011

Meaningful Use will be phased in three stages. Only Stage One is defined in the Notice of Proposed Rule Making (NPRM). Future NPRMs will define later stages. Eligible providers and hospitals starting in year one (2011) have two years to implement a stage before moving to the next stage. Eligible providers and hospitals can start after 2011 but will have a compressed implementation timeline with the goal of having all eligible providers and hospitals achieving Meaningful Use by 2015. The following table from the NPRM summarizes the stage of Meaningful Use required for payment years 2011-2015.

Stage of Meaningful Use Criteria by Payment Year

First Payment Year	Payment Year				
	2011	2012	2013	2014	2015 +**
2011	Stage 1	Stage 1	Stage 2	Stage 2	Stage 3
2012		Stage 1	Stage 1	Stage 2	Stage 3
2013			Stage 1	Stage 2	Stage 3
2014				Stage 1	Stage 3
2015+*					Stage 3

Stage One Meaningful Use requirements include both the actual exchange of certain types of health information and the ability to exchange other types of health information. State health information exchanges will be challenged to implement all applications required to achieve Meaningful Use by early to mid 2011. Nebraska’s statewide health information exchange is committed to providing the applications necessary for eligible providers and hospitals to meet Stage One requirements in year one. All providers, regardless of their ability to qualify for Medicaid or Medicare incentives, will be able to utilize the expanded services available through NeHII.

NeHII already offers some of the applications required for Meaningful Use. These applications include:

- E-prescribing;
- Electronically exchanging key clinical information; and
- Electronically checking insurance eligibility information.

Future applications include:

- Reporting quality measures to CMS or the States;
- Sending reminders to patients per patient preference for preventive/ follow up care;
- Submitting claims electronically to public and private payers;
- Providing patients with an electronic copy of their health information upon request;
- Submitting electronic data to immunization registries and actual submission where required and accepted;
- Providing electronic submission of reportable lab results (as required by state or local law) to public health agencies and actual submission where it can be received; and
- Providing electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice.

This list could change in response to any changes made to the Meaningful Use requirements.

All providers, regardless of their ability to qualify for Medicaid or Medicare incentives, will be able to utilize the expanded services available through NeHII.

NeHII will continue to exercise the capability to exchange health information where possible, and will implement technical updates to the HIE solution based on new requirements for HIE as determined through HHS rule making for Meaningful Use incentives. As part of its continual performance improvement process, NeHII will continually assess technical functionality based on relevant state law or when the Office of the National Coordinator (ONC) releases new or revised program guidance.

NeHII's current vendor, Axolotl Corporation, is the industry leader in the implementation of HIE, comprising more operational health information exchanges than its two closest competitors combined. Axolotl is an active participant in the eHealth Initiative and collaborates with the Office of the National Coordinator and the Certification Committee for Health Information Technology. Axolotl's HIE solution is CCHIT-certified, and they have pledged to all their clients that they will meet or exceed all Meaningful Use criteria, once that criteria is established.

EBHIN also plans to implement applications which would support Meaningful Use. Many of the Meaningful Use capacities will be delivered through the Central Data Repository and EMR applications utilized by EBHIN participants. EBHIN will provide lab results and e-prescribing through a web portal.

The following table lists the Meaningful Use Stage 1 objectives and measures included in the Notice of Proposed Rule Making as well as the expected availability through NeHII and EBHIN.

Stage 1 Objectives		Stage 1 Measures	Status/ Expected Availability
Eligible Professionals	Hospitals		
Generate and transmit permissible prescriptions electronically (eRx)		At least 75% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology	Currently available through NeHII Will be available through the EBHIN agency EHR
Report ambulatory quality measures to CMS or the States	Report hospital quality measures to CMS or the States	For 2011, provide aggregate numerator and denominator through attestation as discussed in section II(A)(3) of this proposed rule For 2012, electronically submit the measures as discussed in section II(A)(3) of this proposed rule	Will be available through NeHII through the Reporting Hub EBHIN—N/A
Send reminders to patients per patient preference for preventive/ follow up care		Reminder sent to at least 50% of all unique patients seen by the EP that are age 50 or over	Will be available through NeHII through the Patient Portal Will be available through the EBHIN EPM scheduling module
Check insurance eligibility electronically from public and private payers	Check insurance eligibility electronically from public and private payers	Insurance eligibility checked electronically for at least 80% of all unique patients seen by the EP or admitted to the eligible hospital	Currently available through NeHII Will be available through the EBHIN EPM billing module
Submit claims electronically to public	Submit claims electronically to public and private	At least 80% of all claims filed electronically by the	Will be available

and private payers.	payers.	EP or the eligible hospital	through NeHII Will be available through the EBHIN EPM billing module
Provide patients with an electronic copy of their health information (including diagnostic test results, problem list, medication lists, allergies), upon request	Provide patients with an electronic copy of their health information (including diagnostic test results, problem list, medication lists, allergies, discharge summary, procedures), upon request	At least 80% of all patients who request an electronic copy of their health information are provided it within 48 hours	Could be available through NeHII through the Patient Portal Could be made available through access to a patient portal in to the EBHIN CDR.
	Provide patients with an electronic copy of their discharge instructions and procedures at time of discharge, upon request	At least 80% of all patients who are discharged from an eligible hospital and who request an electronic copy of their discharge instructions and procedures are provided it	Could be available through NeHII through the Patient Portal EBHIN—N/A
Provide patients with timely electronic access to their health information (including lab results, problem list, medication lists, allergies) within 96 hours of the information being available to the EP		At least 10% of all unique patients seen by the EP are provided timely electronic access to their health information	Could be available through NeHII through the Patient Portal Could be made available through access to a patient portal in to the EBHIN CDR
Provide clinical summaries for patients for each office visit		Clinical summaries are provided for at least 80% of all office visits	Could be available through NeHII through the patient portal Will be available through the EBHIN agency

			EHR
Capability to exchange key clinical information (for example, problem list, medication list, allergies, diagnostic test results), among providers of care and patient authorized entities electronically	Capability to exchange key clinical information (for example, discharge summary, procedures, problem list, medication list, allergies, diagnostic test results), among providers of care and patient authorized entities electronically	Performed at least one test of certified EHR technology's capacity to electronically exchange key clinical information	Currently available through NeHII Will be available through the CDR to all providers participating in the EBHIN network. Available as a pilot by Oct. 1, 2010
Capability to submit electronic data to immunization registries and actual submission where required and accepted	Capability to submit electronic data to immunization registries and actual submission where required and accepted	Performed at least one test of certified EHR technology's capacity to submit electronic data to immunization registries	Will be available through NeHII through the Disease Registries and Syndromic Surveillance Module EBHIN—N/A
	Capability to provide electronic submission of reportable lab results (as required by state or local law) to public health agencies and actual submission where it can be received	Performed at least one test of the EHR system's capacity to provide electronic submission of reportable lab results to public health agencies (unless none of the public health agencies to which eligible hospital submits such information have the capacity to receive the information electronically)	Will be available through NeHII through the Disease Registries and Syndromic Surveillance Module Will be available through the CDR to all providers participating in EBHIN. Will be available as a pilot by Oct. 1 for all EBHIN providers

Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice	Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice	Performed at least one test of certified EHR technology's capacity to provide electronic syndromic surveillance data to public health agencies (unless none of the public health agencies to which an EP or eligible hospital submits such information have the capacity to receive the information electronically)	Will be available through NeHII through the Disease Registries and Syndromic Surveillance Module Data elements can be added to the CDR as needed to capture and provide this information
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Standards and Certifications

NeHII

NeHII has developed a set of standards that are in line with the federal standards. These standards, developed with careful consideration of all privacy and security processes, are utilized for all NeHII implementations. The NeHII software, employs SOA architecture, supports XML, uses SOAP/Secure Web Services, is HIPAA compliant and is CCHIT certified. NeHII is committed to exceeding HHS-adopted interoperability standards. In its current production state, NeHII requires communication using standard transactions sets such as X12, HL7, NCPDP, and HITSP. NeHII also plans to actively pursue HIE certification through CCHIT or another entity as soon as standards are released. The EMR product currently offered by NeHII and its vendor Axolotl is CCHIT-certified for ambulatory care.

Users authenticate themselves to the NeHII system by logging in with user id and password via a secure socket layer (SSL) encrypted browser connection. The platform supports the ability to have two factor authentication. When users access the system, configured roles and workgroups are cross checked against database Access Control Lists (ACLs). ACLs define the users that can access a database, the data that can be accessed by those users, and the actions that they can perform on that data. Through these tools, the platform governs that users may only access, edit, and manage clinical data appropriately, according to their clinical workgroup and staff position.

Facilities (hospitals/labs have a secured VPN connection to send results to the HIE including lab, radiology reports and transcription reports. At the data center, all information is encrypted at rest as well as in transit.

A core component of the NeHII platform is the Elysium Usage Analyzer (EUA), which logs and organizes all accesses and attempted accesses of the system. Every single request by all users on the system is recorded, as well as any patient record that is accessed. The EUA organizes access activity records by date, database, user and patient. NeHII administrators with a security officer role are able to perform HIPAA audits

to report on, for example, who accessed any records belonging to a particular patient or all patients accessed by a particular user.

The principal purpose of the EMPI is to ensure that all the information electronically stored in NeHII is related systematically with a single, accurate patient record. From workflow, trends and charts, and summary views to clinical data repositories and electronic health records at physician practices, most every feature relies on this accurate and unique patient identity and the record locator service. The platform ensures that information created in, exported from, or queried from NeHII corresponds to the correct patient records in external systems and applications. The latest IHE standards and protocols are used including ATNA, PIX/PDQ HL7 v2 and v3, XDS.b (registry and repository), and XCA.

The EMPI platform and RLS utilize the latest IHE standards and protocols to ensure it can respond to patient queries (PIX/PDQ), act as a registry repository to find data stored in repositories around the community (XDS.b) and in external sites (XCA), and adhere to the requirements to keep those queries secure (ATNA). This paragraph was re-written above and should be deleted.

EdgeServers that process clinical data from hospitals, reference labs and other large data sources are configured to add and/or update the EMPI. Each EdgeServer can be configured differently so as to take advantage of data fields known to be accurate and robustly populated as well as to de-emphasize fields that the source doesn't provide consistently. This model ensures that NeHII has an EMPI that requires the least amount of manual maintenance and cleanup.

NeHII supports HITSP C32 standard for the Continuity of Care Document (CCD). Later this year the C37, C48 and C78 standards will be supported.

Standards used by NeHII are reviewed, adjusted and approved to allow for any changes in federal or state law. Attention to maintaining the privacy and security of the patient and their records is paramount with constant adherence to the rules for information sharing and how the information is to be used.

NeHII's published bylaws outline a comprehensive committee structure responsible for all activities and approvals within the exchange. These committees include members of the exchange, as well as state and regional experts on technical, privacy, security, and financial aspects of Health Information. When standards require review and update, either through changes in national standards or official request via a NeHII stakeholder, the NeHII team presents the required updates to the appropriate committee for review. The committee reviews pertinent information and makes a recommendation to the NeHII Board of Directors to accept the updated standards.

Finally, NeHII will work with Axolotl to achieve EHNAC certification in 2010, and will continue to work with national organizations to review, refine, and meet standard privacy and security requirements.

NeHII's interim Executive Director, Deb Bass, also served on the CCHIT volunteer HIE committee, a group of 20 professionals chosen from over 600 applicants.

EBHIN will continue to monitor standards development with the goal of complying with those standards as quickly as possible. As to existing standards, the EMR will be CCHIT compliant, any interfaces will be HL7, Privacy and Security will conform to HIPAA guidelines, and data standards will include ICD-9, CPT-4, LOINC-1 and NDC.

Nebraska is committed to utilizing national standards to the extent practicable. At this time, state standards for health information exchange have not been established. The primary reason for not establishing state standards is the concern about interoperability if each state establishes different standards. The Nebraska Information Technology Commission (Commission) has the authority to establish state standards for state government entities and entities which receive state funding. If the eHealth Council at any time determines that state standards would be beneficial, the eHealth Council has the authority to propose standards which would be reviewed by the NITC Technical Panel and approved by the NITC. All proposed standards are given a 30-day comment period before any action is taken.

Business and Technical Operations

State Level Shared Services and Repositories

NeHII will act as the integrator for the statewide health information exchange, connecting the other regional or specialty HIEs with each other, and with hospitals and physicians across the state. NeHII's hybrid-federated model includes shared services and repositories designed to coordinate communication across the state while reducing administrative overhead to the system. The shared services and repositories will be available to all NeHII participants and are depicted in the table below.

Service/Repository	Description	Functionality
Master Patient Index	Index of all patients with records in the system	Ensures patients with records at multiple facilities are combined into one comprehensive record
Record Locator Service	Index of all clinical records in the system	Speeds retrieval of records while ensuring the records are attached to the correct patient
Provider Directory	Index of all participants in the exchange	Includes physicians, hospitals, labs, radiology, and ancillary providers
Nebraska Hospital Association	Professional Association	Used for credentialing and licensing activities
Nebraska Pharmacy Association	Professional Association	Used for identification of pharmacies across the state for ePrescribing
Nebraska Medical Association	Professional Association	Coordination with state physicians.
State Immunization Registry	Record of patient immunizations	Utilize NeHII for population of the registry

Provider Directory

NeHII's clinical data is stored in federated EdgeServers specific to each institution. When a user does a search within the Virtual Health Record (VHR), these EdgeServers are accessed and the data is routed to the end user for use in patient treatment. Behind the scenes, three distinct indexes are used to speed the recovery of data and authorize the user. When the search is initiated, the Master Patient Index (MPI) is accessed to identify the patient. NeHII currently has over 1.6 million patients in the MPI. Next, the Record Locator Service (RLS) is accessed to determine where records exist for that patient. NeHII has over 13 million records currently in the exchange. Finally, as necessary, the provider directory is accessed to direct authorization and routing instructions. While the MPI and RLS are updated in real time as transactions are loaded to the EdgeServers, the Provider Directory goes through additional steps to ensure completion and accuracy.

The NeHII provider directory includes specific demographic information on providers in the NeHII coverage area, including those authorized in NeHII as well as those authorized in NeHII hospital participants that do not have access to NeHII. The following data elements are maintained in the NeHII Provider Directory:

- First name
- Middle Initial
- Last Name
- Title
- Office Name
- Office Street Address
- Office City
- Office State
- Office Zip
- Office Phone
- Office Fax
- Local User ID
- Specialty 1
- Specialty 2
- National Provider ID
- DEA Number
- License Number

The sources for data in NeHII's Provider Directory are the official Physician Address Books (PAB) of NeHII Participants. This data in the directory is populated and maintained via a NeHII-specific file process that reconciles the PABs with the NeHII Provider Directory. It is expected that NeHII's Provider

Directory will be the authoritative source for the routing of clinical information within the State of Nebraska. This directory is currently being used in routing clinical messages to the appropriate provider.

NeHII validates credentialing and authorized access for providers through its policies, with Workgroup Administrators identified in the participation agreement tasked with validating physician credentials. However, the State of Nebraska maintains a database of physicians who are licensed to practice within the state. This database can be found at <http://www.nebraska.gov/LISSearch/search.cgi>. NeHII's strategic direction is to interface with this database in the future to automate and provide an additional layer of verification for credentialed providers in Nebraska.

Finally, NeHII has been and continues to be in discussions with companies that offer and maintain national directories of providers. These directories are expected to become very critical as NeHII continues to expand clinical messaging outside the state. These directories typically interface via web-service connection, allowing real-time access while reducing data redundancy. NeHII can interface with all data sources either through flat-file connections or web service calls.

Strategies

- NeHII will explore providing directory services to those outside of NeHII. In addition to enabling greater participation in the directory, this could provide NeHII with another potential source of revenue generation.
- The State of Nebraska and NeHII will continue to monitor the work of the HIT Policy Committee on provider directories.

Project Management

NeHII staff works hand-in-hand with our clients using a proven roadmap and industry standard project management methodologies. Through NeHII's experience, each project's dedicated Project Manager will guide clients through resource planning and staffing, determining which model(s) are best for them in terms of using dollars prudently, as well as in consideration of each entity's sustainability model. Weekly Status meetings serve as an opportunity to review status reports, and escalate risks and issues.

NeHII utilizes Microsoft Project to manage project workplans and maintain timely delivery within budget. Experienced NeHII project managers are PMI Certified and manage the implementation to ensure its success, anticipate and mitigate risk and keep stakeholders informed throughout the project through weekly project reporting. NeHII project managers are experts in change management having successfully implemented HIE for numerous facilities.

NeHII maintains a decision log/tree, a valuable tool that tracks all decisions made throughout the project, along with the rationale for each. This provides for less re-work, promotes stakeholder confidence, and allows the implementation to move forward with fewer delays.

NeHII project managers work with each client throughout the project to ensure knowledge transfer of information, lessons learned and risks identified. Stakeholders will be fully informed, and support staff will be provided with all documentation and training materials.

Progress will be monitored through both reports and regular meetings. Representatives of the State of Nebraska, NeHII, EBHIN, and other stakeholders have been meeting weekly to develop Nebraska's Strategic and Operational Plans. As Nebraska moves to implementation, regular meetings will continue as a way of tracking progress in implementing our plans. Additionally, representatives of the State of Nebraska, NeHII, and EBHIN have been meeting via phone with our program coordinator on a regular basis.

Two reporting mechanisms will be utilized to track progress. The operational plan includes milestones. Upon completion of a milestone, sub recipients are required to submit a short e-mail report to NITC staff. Sub recipients are also required to submit quarterly programmatic reports which will be incorporated into the quarterly reports submitted to ONC.

Standard Operating Procedures for HIE

NeHII is currently fully operational, and has a comprehensive manual of processes and procedures designed to run the day-to-day operations of the exchange.

The operating procedures were developed with the input of committees and approved by the Board of Directors. The NeHII Governance Committee has established a number of committees that are tasked with certain roles and responsibilities as outlined in the governance policies and the Bylaws. These committees are tasked with process and procedure development and approval, and make recommendations to the Board of Directors.

NeHII's standing committees include:

- NeHII Executive Committee
- NeHII Finance Committee
- NeHII Governance Committee
- NeHII Technical Committee
- NeHII Privacy and Security Committee
- Consumer Advisory Council
- HIE Advisory Council
- Professional Association Advisory Council

The NeHII Board of Directors has final approval on new policies and procedures.

NeHII leadership continually evaluates processes and procedures that guide day to day activities. When changes to operating procedures are required, leadership approaches the appropriate committee of the board and requests approval to implement. The NeHII Executive Committee reviews and approves proposed changes to operating procedures with the Board having final approval. In preparation for Board Meetings, agendas are prepared and reviewed by each committee chair, minutes are recorded and approved to use as a record of action items and votes taken.

Privacy and Security

Ensuring health information security and privacy is a priority for the State of Nebraska and Nebraska's health information exchanges. Health information security and privacy policies and enforcement are shaped by federal and state laws and regulations as well as consumer concerns and privacy rights.

Legal Environment

HIPAA and the HITECH Act

HIPAA is central to the development of health information security and privacy policies and enforcement. The HIPAA Privacy Rule provides federal protections for personal health information held by covered entities (health care providers, health plans, and health care clearinghouses) and details patient rights concerning health information. The Privacy Rule also permits the disclosure of personal health information needed for patient care, payment, and operations. The Security Rule specifies a series of administrative, physical, and technical safeguards for covered entities to use to assure the confidentiality, integrity, and availability of electronic protected health information. The HITECH Act found within the American Recovery and Reinvestment Act extends the HIPAA privacy and security provisions to business associates of covered entities. Health information exchanges, as business associates, are now bound by these provisions and subject to the same penalties as covered entities.

The HITECH Act requires covered entities to inform individuals affected by a breach. Business associates (including health information exchanges) are required to notify covered entities. Media notice must be provided if a breach affects more than 500 individuals. The Secretary of the Department of Health and Human Services must also be notified through an online submission form made available through the Office of Civil Rights if a breach affects more than 500 individuals. Breaches affecting more than 500 individuals will be posted to the U.S. Department of Health and Human Services' website. Breaches affecting fewer than 500 individuals can be logged and reported annually.

Nebraska Laws

The Nebraska Health Information Security and Privacy Work Group examined Nebraska's laws in 2008 to determine if any laws were more restrictive than HIPAA and would impede the exchange of health information. Nebraska's laws are generally permissive. The Legal Work Group found one Nebraska law which was more stringent than HIPAA. Neb. Rev. Stat. 71-8403 stipulates that authorizations for release of medical records are valid for a maximum period of 180 days. The group recommended deleting the 180-day restriction. HIPAA requirements would then apply, allowing patients to state an expiration date or expiration event. Legislation was introduced by Senator Gloor in 2010 to remove the 180-day restriction. LB 849 was signed by Governor Heineman on April 13, 2010.

The eHealth Council and E-Prescribing Work Group also identified a potential barrier to e-prescribing in a Nebraska statute that required pharmacists to keep paper copies of

prescriptions. A change to this statute which would allow pharmacists to keep copies of prescriptions in a readily retrievable format was enacted in 2009.

The Nebraska Department of Health and Human Services' Licensure Unit has the authority to censure health care providers and facilities for the improper disclosure of health information. The Licensure Unit has also pointed out the importance of ensuring that necessary information from electronic medical records can be obtained to determine compliance with licensure and certification regulations. Statutes related to licensing can be found at <http://www.dhhs.ne.gov/crl/statutes/statutes.htm>.

Continuing work on health information security and privacy will be addressed by the Health Information Security and Privacy Work Group of the eHealth Council.

Privacy and Security Policies

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. Most health information exchanges use either opt-in or opt-out policies for consumer consent. The opt-in approach is one where consumers are required to sign an authorization acknowledging they are permitting their data to be released to other providers in the HIE. An opt-out policy for consumer consent simply stated means the health information is in the HIE unless the consumer takes a signature-required action to have their information excluded from the HIE. The default is set to include the information in the system unless the consumer takes action to opt-out of the health information exchange.

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. The only requirement is that participating HIEs sign a license agreement that stipulates they share any changes or enhancements to the policies/manuals/business plans with NeHII in order to foster continued improvement of the documents. It is hoped that this approach will accomplish a number of things, including:

- 1) Creating collaboration amongst all the state efforts to share information;
- 2) Offering a beginning base of standard operations documents and policies that will foster effectiveness and efficiency when the individual HIEs work to connect to the NHIN;
- 3) Helping the current leaders in HIE continue to improve what they currently have in place; and
- 4) Moving to the NHIN sooner than later.

EBHIN has also developed privacy and security policies. EBHIN uses an opt-in approach. This policy is based on Title 42 of the Code of Federal Regulations which stipulates the requirement that an authorization for release of information be obtained for substance abuse treatment records. The differences in approaches used by EBHIN and NeHII can be addressed through a trust agreement between the two exchanges.

In order to receive funding from the State HIE Cooperative Agreement program, health information exchanges must have privacy and security officers and must develop privacy and security policies which are compliant with HIPAA, the HITECH Act, and all other applicable federal and state laws and regulations. In order to exchange health information through NeHII or the NHIN, health information exchanges also must have trust agreements in place outlining responsibilities for maintaining health information security and privacy.

Privacy and Security Framework

NeHII has developed a privacy and security framework which fully complies with all relevant HIPAA requirements. The work that was done previously by the Connecting for Health was used as the framework for the policies developed in Nebraska. The mission, vision and goals of NeHII explicitly state that a secure exchange of information is absolutely essential to the development and implementation of the HIE and to ensure total compliance with HIPAA requirements. Much time and effort during the development and implementation of NeHII was directed to compliance with Privacy and Security requirements, and the NeHII team continues to stay abreast of the expanding requirements as well.

NeHII maintains security controls that conform to HIPAA and standard terms and conditions related to ARRA (American Recovery and Reinvestment Act) to authenticate users and monitor system activity. In addition, NeHII's technical standards for interoperability, privacy, security, and disaster recovery conform to current HIPAA and ARRA standards for privacy and security.

NeHII supports the Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information released in December, 2008. The nationwide framework is comprised of eight principles:

- Individual Access;
- Correction;
- Openness and Transparency;
- Individual Choice;
- Collection, Use, and Disclosure Limitation;
- Data Quality and Integrity;
- Safeguards; and
- Accountability.

NeHII has incorporated these principles into its every day operating processes and procedures.

eBHIN is utilizing the Connecting to Health and NeHII policies to evaluate changes made in light of the CFR 42 higher privacy standards for Behavioral Health records. In addition, the Health Information Security and Privacy Collaboration(HISPC) recommendations focused on authentication and audit are being utilized to complete the development process with the eBHIN Security and Privacy Officer. The Compliance Committee of the eBHIN Board of Directors will make a final recommendation regarding their adoption prior to the network "go live". Once adopted, if necessary for consistency, components that overlap with the Network Policies and Procedures will be amended accordingly.

Individual Access

Both NeHII and eBHIN are planning to allow individual access to personal health information. NeHII plans to allow individuals to access their health information through a PHR gateway that allows NeHII to share personal health information through a third party vendor such as Google Health or MSNhealth Vault. eBHIN will allow--with the proper consent-- a user to download a patient's encounters to a disc, removable drive or deliver them in paper format.

Correction

NeHII complies with this principle as part of its Privacy standards. Specifically, each Participant is required to comply with applicable federal, state and local laws and regulations regarding individual rights to request amendment of health information. If an individual requests, and the Participant accepts, an amendment to the health information about the individual, the Participant, assisted by NeHII, shall make reasonable efforts to inform other Participants that accessed or received such information through NeHII, within a reasonable time. Only the Participant responsible for the record being amended may accept an amendment. If one Participant believes there is an error in the record of another Participant, it shall contact the responsible Participant.

Openness and Transparency

Nebraska complies with the HHS principle that trust in an electronic health exchange can best be realized through open and transparent processes and procedures.

Openness about developments, procedures, policies, technology and practices with respect to the treatment of protected health information is essential to protecting privacy. Individuals should be able to understand what information exists about them, how that information is used, and how they can exercise reasonable control over that information. This transparency helps promote privacy practices and instills confidence in individuals with regard to information privacy, which in turn can help increase consumer participation in health information networks.

Participating health care providers are provided NEHII brochures to hand out to consumers. The brochure explains the system-wide scope of an opt-out decision, the risks to the individual's data privacy and security if the individual participates, the effect and benefits of participation, and the effect and disadvantages of opting out. Participating health care providers may also direct individuals to the NeHII website and to a NeHII helpline to obtain additional information.

Consistent with the scope of individual rights in HIPAA, every individual should have the right to request and receive in a timely and intelligible manner information regarding who has that individual's health information and what specific information the party has; to know any reason for a denial of such request; to request to amend any protected health information that the individual believes is inaccurate; and to request not to have his or her information made available through the System. Because individuals have a vital stake in their own protected health information, such rights enable them to make more informed decisions about participation and provide another means to monitor for inappropriate access, use and disclosure of their information. Individual participation promotes information quality, privacy, and confidence in privacy practices.

Individual Choice

Most health information exchanges use either opt-in or opt-out policies for consumer consent. The opt-in approach is one where consumers are required to sign an authorization acknowledging they are permitting their data to be released to other providers in the HIE. An opt-out policy for consumer consent simply stated means the health information is in the HIE unless the consumer takes a signature-required action to have their information excluded from the HIE. The default is set to include the information in the system unless the consumer takes action to opt-out of the health information exchange. NeHII's Privacy Policies dictate that individuals shall be afforded the opportunity to exercise the choice to have their health information included in NeHII through a uniform "opt-out" process.

Participants may also direct individuals to the NeHII website and to a help line at NeHII where the individual can ask additional questions and obtain additional information about participation in NeHII and opt-out. NeHII as a business associate of the Participants is authorized to provide information and answer individual questions about NeHII and the opt-out alternative on behalf of Participants.

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

Collection, Use, and Disclosure Limitation

NeHII's Privacy Policies place appropriate limits on the type and amount of information collected, used and disclosed. NeHII's Privacy Policies state that personal health information should be obtained by one Participant from another only pursuant to mutual agreement that the information is being accessed for qualifying treatment or payment purposes of the requesting Participant. Information recipients may use and disclose protected health information obtained through the System only for purposes and uses consistent with their permitted access and consistent with their obligations as covered entities under HIPAA. Certain exceptions, such as for law enforcement or public health, may warrant reuse of information for other purposes. However, when information obtained by a Participant through the System is used for purposes other than those for which the information was originally obtained, the Participant so using or disclosing the information should first apply the rules applicable to it as a covered entity under HIPAA and as a contracting Participant.

NeHII's Privacy Policies also specify that the Participants shall request only the minimum amount of health information through the System as is necessary.

For the eBHIN HIE, a higher privacy standard exists for substance abuse records. For this reason, an “opt-in” approach has been selected for all the patients in the eBHIN HIE. Each patient will utilize a standard Authorization for Release of Information. Those who choose can have their records shared across the eBHIN Network, as well as additionally disclosed to the NeHII Network. The technical architecture of the eBHIN HIE allows a record to be entered, but, not be accessible to any user except the original entrant. This allows the information to be available for aggregate reporting, but, not accessed by anyone not authorized to do so. The architecture also allows a “Break the Glass” function where information can be accessed in an emergency. Additional override policies and procedures govern who has the access and under what conditions. Additional user authentication procedures also apply.

Safeguards

Security safeguards are essential to privacy protection, because they help prevent information loss, corruption, unauthorized use, modification, and disclosure. With increasing levels of cyber-crime, networked environments may be particularly susceptible without adequate security controls. Design and implementation of various technical security precautions such as identity management tools, information scrubbing, hashing, auditing, authenticating, and other tools can strengthen information privacy. Privacy and security safeguards should work together and be well coordinated for the protection of patient health information

Physical security of the data will be ensured through a combination of Policies and Procedures, and physical restrictions to the data center and remote locations. Data will be secured in a controlled environment, protected from unauthorized access. Daily backups will be secured in an off-site vault to ensure survivability in the event of system failure or disaster. Policies and procedures will be in place to manage compliance with HIPAA standards at both the data center and the remote locations. All access will require two levels of authentication. Passwords will be “complex” and set to be changed periodically by the user.

Data will be encrypted using an SSL connection between the user and the web server. In addition, identity will be masked through the use of a proxy server. This combination will make the data meaningless to an outsider and also protect the identity of as the owner of the data.

For wireless connections, routers will be secured using two level authentications. Data will be encrypted. The wireless network will be monitored for intruders. Downloads to devices will be encrypted and policies set to require periodic changes to passwords. In addition, data traffic will be scanned for such things as viruses, spyware, adware, malware, and Trojans using a commercially available suite of protection products such as MacAfee.

The global security and privacy management component of the eBHIN HIE will be HIPAA compliant with security and privacy features and will incorporate authorization for release of information, emergency override procedures, and limits access to records. To minimize access to security features, security administration will be centralized at the eBHIN level.

Data Quality and Integrity

Health information should be accurate, complete, relevant, and up-to-date to ensure its usefulness. The quality of health care depends on the existence of accurate health information. Moreover, individuals can be adversely affected by inaccurate health information in other arenas, for example, with insurance and employment. Thus, the integrity of health information must be maintained and individuals must be permitted to view information about them and request to amend such health information so that it is accurate and complete.

When a new data provider such as a hospital is added to the NeHII exchange, NeHII, Axolotl, and the data provider undergo a rigorous testing procedure in a test environment to ensure the data loaded to NeHII is accurate and timely. The data is loaded to a test environment, and experts from the data provider are given access to test the data. Typically, the experts will view the data on NeHII while simultaneously viewing the data on their internal EMR. If errors are found, it is generally caused by a misaligned segment within the HL7 record. Once all testing has been completed, NeHII solicits signoff from department heads at the data provider, including the HIM Director, Lab Director, CIO, and Privacy Officer. Only then is data loaded to the NeHII production platform.

Upon approval of the State Operational Plan and receipt of the implementation funds associated with the State Cooperative Agreement program, NeHII will install the Personal Health Gateway, allowing patients to review their data on 3rd party Personal Health Record (PHR) systems such as Google Health and MSN Health Vault. Patients can then request amendments to their medical record through their personal physician or associated data provider. NeHII cannot update records directly as the data is owned by the participating data providers.

Accountability

NeHII's Privacy Policies address monitoring for internal compliance, including the use of audit logs and authenticating the identity and authority of each authorized user and Participant.

Consistent with the scope of individual rights in HIPAA, every individual should have the right to request and receive in a timely and intelligible manner information regarding who has that individual's health information and what specific information the party has; to know any reason for a denial of such request; to request to amend any protected health information that the individual believes is inaccurate; and to request not to have his or her information made available through the System. Because individuals have a vital stake in their own protected health information, such rights enable them to make more informed decisions about participation and provide another means to monitor for inappropriate access, **use** and **disclosure** of their information. Individual participation promotes information quality, privacy, and confidence in privacy practices.

NeHII's Privacy Policies cover the duty of Participants to mitigate the harmful effects of an access, use or disclosure of health information in violation of applicable laws and/or regulations. Participants also have a duty to investigate reported or suspected privacy breaches. NeHII's policies outline an incident response system in connection with known or suspected privacy breaches.

eBHIN has contracted for an independent Privacy and Security Officer who is working with the eBHIN Network Director and eBHIN Compliance Committee of the Board of Directors to detail how complaints are managed, reviewed and acted upon. Included in these policies are the conditions for notification of disclosure, including notifications associated with emergency access to records.

eBHIN internal compliance will be monitored via random audits conducted regularly by the eBHIN system administrator and reported to the independent Privacy and Security Officer. These activities are collectively reported to the eBHIN Compliance Committee that provides oversight authority on behalf of the Board of Directors.

Certification of Health Information Exchanges

Currently there is no national certification process for health information exchanges. The Certification Commission for Health Information Technology has convened a work group on health information exchange certification. National certification of health information exchanges would provide additional assurances that health information exchanges meet minimum requirements for interoperability, security, and privacy.

Enforcement

Currently, there are three mechanisms for enforcing health information security and privacy laws and regulations:

- The Licensing Unit can censure providers and facilities for improper disclosure of personal health information.
- The Office of Civil Rights with the U.S. Department of Health and Human Services can enforce violations of HIPAA and the HITECH ACT by covered entities and business associates.
- The HITECH Act also authorized the Attorney General to bring a civil action on behalf of residents in a district court in cases in which the Attorney General has reason to believe that one or more residents has been threatened or adversely affected by a health information security and privacy violation.

Enforcement Body	Entities Covered
Nebraska Dept. of Health and Human Services, Licensing Unit	Health Care Providers Health Care Facilities
Attorney General's Office	Health Care Providers Health Care Facilities Health Information Exchanges Business Associates
U.S. Department of Health and Human Services, Office of Civil Rights	Health Care Providers Health Care Facilities

	Health Information Exchanges Business Associates
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These mechanisms are sufficient at the present time. As health information exchange continues to mature, other mechanisms may need to be explored. Other states, including Minnesota, are exploring certification of health information exchanges. Nationally, work has also begun on developing a certification process for health information exchanges. Certification with oversight by the Department of Health and Human Services' Licensure Unit is one possible option that could be considered in the future.

Consumer Views of Health IT

Nebraska consumers are generally receptive toward health IT and health information exchange. Research by the University of Nebraska Public Policy Center indicates that Nebraskans have positive views about sharing health information electronically, but do have some privacy and security concerns. Most participants in a deliberative discussion held in November 2008 felt that the State of Nebraska had a role in ensuring the privacy and security of health information (100%), providing information to consumers about health information security and privacy (94%), regulating health information networks (91%), and facilitating public-private partnerships to exchange health information (88%).¹

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

Consumers are extremely satisfied with telehealth services provided through the Nebraska Statewide Telehealth Network. Virtually all consumers indicated they would recommend its use to a family member. Use of the system saved consumers attending meetings and conferences over \$1 million in mileage costs alone.

Consumer and Provider Education

Nebraska has laid the groundwork for consumer and provider education efforts. The Nebraska Health Information Security and Privacy Work Group has developed a consumer brochure (<http://www.nitc.ne.gov/eHc/clearing/Consumerhealthsecuritybrochurepg1and2.pdf>) and content for a website with information on health information security and privacy. Funds

¹ Abdel-Monem, Tarik, and Herian, Mitchel, Sharing Health Records Electronically: The Views of Nebraskans, University of Nebraska Public Policy Center, December 11, 2008, http://ppc.unl.edu/userfiles/file/Documents/projects/eHealth/Sharing_Health_Records_Electronically_Final_Report.pdf, accessed on June 25, 2009.

from the State HIE Cooperative Agreement Program will be used to develop the website and to print brochures.

NeHII has also developed marketing materials for consumers. The NeHII website (www.nehii.org) contains a consumer brochure, online opt-out form, and a list of participating providers. NeHII has also designed a marketing campaign to inform consumers about NeHII as NeHII rolls out across the state.

Provider education is also being addressed. Face-to-face meetings with groups of providers have been one of the primary means of communication. Provider education and marketing efforts will intensify as implementation efforts accelerate. The Regional Health IT Extension Center will play a key role in informing providers. NeHII and EBHIN will partner with the Extension Center, the DHHS Division of Medicaid and Long-Term Care, the Nebraska Hospital Association, the Nebraska Medical Association, and other stakeholders to communicate with providers.

Consumer Complaints and Concerns

Consumers who feel that a violation has occurred should first contact their provider. The provider may be able to resolve the issue. If the alleged violation involved a health information exchange, the provider may contact the relevant health information exchange or provide the consumer with contact information. Consumers may also contact the relevant health information exchange directly without first contacting their providers. If the issue is still not resolved satisfactorily, consumers may contact the U. S. Department of Health and Human Services, Office of Civil Rights; the Nebraska Department of Health and Human Services, Licensure Unit (in cases involving health care providers or facilities); and/or the Nebraska Attorney General's Office.

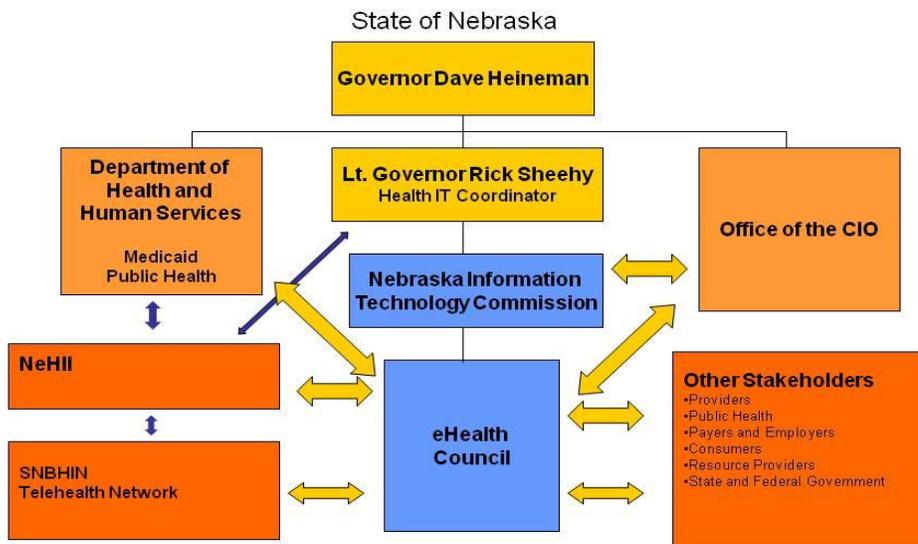
Consumer Initiation of Health Information Security and Privacy Violation Investigation	
Stage	Contact
Initial Inquiry	Health Care Provider
Inquiry (initial or after contacting a provider)	Health Information Exchange
Investigation and Enforcement	Nebraska Dept. of Health and Human Services, Licensing Unit U.S. Department of Health and Human Services, Office of Civil Rights Nebraska Attorney General's Office

Governance

In Nebraska, both the private and public sectors are sharing responsibility for governance of health information exchange. Key players in Nebraska's governance model include:

- The Nebraska Information Technology Commission's eHealth Council;
- The State HIT Coordinator;
- NeHII as the statewide integrator and lead health information exchange; and
- Participating regional and specialty exchanges.

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



eHealth Council

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

Members include representatives of the following groups:

- The State of Nebraska;
- Health care providers;

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- eHealth initiatives;
 - Public health;
 - DHHS Division of Medicaid and Long-Term Care, private payers and employers;
 - Consumers; and
 - Resource providers, experts, and others.

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

Periodic newsletters are provided to all stakeholders and made publicly available to ensure accountability and transparency of all activity, and encourage feedback and input. All eHealth Council meetings are public meetings. Meeting agendas and materials are posted in advance to the NITC website (www.nitc.nebraska.gov).

The State of Nebraska's Nebraska Information Technology Commission (NITC) will act as the prime recipient and fiscal agent for the State Health Information Exchange Cooperative Agreement Program. Anne Byers, as the Health IT Manager, provides support to the eHealth Council and, in consultation with Lt. Governor Sheehy, administers the State HIE Cooperative Agreement Program.

State HIT Coordinator

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

Statewide Integrator

As the statewide integrator and lead health information exchange, NeHII will assume responsibility for implementing the State Health Information Exchange Cooperative Agreement program in Nebraska. NeHII is a Nebraska corporation organized under the Nebraska Nonprofit Corporation Act. It was formed by a collaboration of not-for-profit Nebraska hospitals, private entities, state associations, healthcare providers, independent labs, imaging centers, and pharmacies. Representatives of these entities and the Lt. Governor sit on the Board of Directors of NeHII. Members of the NeHII Board of Directors are listed in the Appendix. In 2007, a Decision Accelerator meeting, with representatives of health organizations from across the state, jump started the endeavor. NeHII received its 501(c)3 tax exempt status in 2009. NeHII is represented on the eHealth Council.

Participating Regional and Specialty Exchanges

EBHIN and the Nebraska Statewide Telehealth Network are represented on the eHealth Council. As subrecipients, EBHIN and the telehealth network are responsible for implementing their components of the Cooperative Agreement. EBHIN has received 501(c)3 status. EBHIN is governed by a Board of Directors. The Nebraska Statewide

Telehealth Network is a partnership effort and has not been incorporated or applied for 501(c)3 status. It is governed by the Telehealth Governing Board.

Internal Controls to Ensure Performance

The State of Nebraska is putting internal controls in place to ensure that NeHII and the other HIOs perform as required. The State of Nebraska has entered into contractual relationships with NeHII and eBHIN. Contracts with other subrecipients have been drafted and are currently being reviewed. The contracts specify general responsibilities and also responsibility for supporting the state's strategic and operational eHealth plans. The delineation of responsibilities is included at the end of this section. The plan, especially the timeline and targets, details responsibilities and expectations. Contracts can be terminated for non-performance. Payment can be withheld until satisfactory required reports are received.

The operational plan has identified milestones and targets. Subrecipients are required to submit brief reports on the progress of milestones. The State of Nebraska's eHealth Manager meets weekly with NeHII, eBHIN, and other stakeholders to discuss progress and other issues. The State of Nebraska's eHealth Manager, NeHII, eBHIN, and other stakeholders also meet with our Program Officer biweekly to discuss progress and other issues. NeHII, eBHIN, and other subrecipients are required to submit quarterly progress reports. The eHealth Manager and other representatives of the State of Nebraska will make annual site visits to NeHII and eBHIN.

The eHealth Council, which includes stakeholders across the state, will also regularly receive reports from NeHII, eBHIN, and other subrecipients.

NeHII will enter into a contractual relationship with eBHIN and any other HIOs wishing to connect to NeHII. The contract will define the accountability relationship between NeHII and the HIOs. eBHIN does sit on committees within NeHII to provide input to the exchange

NeHII and eBHIN have also put internal controls in place. NeHII, as part of its standard operating procedures, provides status reports and updates to the board of directors each month, including published minutes and agendas. Additionally, the State HIT coordinator and Medicaid director both sit on the board of directors. NeHII provides an e-mail update on status to interested stakeholders each week, and will provide a status update to the eHealth council each meeting. Independent outside financial auditing will ensure funds are being spent on approved activities. NeHII has also enlisted a part-time CFO to conduct high level financial leadership and management independent of the NeHII Managed Services agreement.

The eBHIN Board of Directors receives a regular project status report that includes progress on all grant requirements. An independent financial audit is completed each year which assures monitoring of grant requirements and compliance with internal control measures. The eBHIN Network Director participates in weekly calls with the State's Operational Planning Committee, bi-weekly calls with the ONCHIT Project Officer and quarterly meetings of the eHealth Council. It is anticipated that eBHIN will enter into a Trust Agreement with NeHII which outlines the terms and conditions of participation and reconciles operational differences. Monitoring of proposed deliverables across both settings will be included in this agreement.

Responsibilities

The relationships and responsibilities of the NITC eHealth Council, the State HIT Coordinator, NeHII, and participating regional and specialty exchanges were formalized in contractual agreements between the NITC eHealth Council, NeHII, EBHIN, and the telehealth network. The list of responsibilities can be found below:

NeHII

NeHII shall have the responsibility to:

- a. Oversee implementation of Nebraska's Strategic and Operational eHealth Plans and the cooperative agreement.
- b. Comply 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.
- c. Collaborate with critical stakeholders, the NITC eHealth Council, the state Health Information Technology Coordinator, and the Office of the National Coordinator.
- d. Make regular reports on the fiscal and programmatic progress of the program to the eHealth Council and the state Health Information Technology Coordinator.
- e. Collaborate with the Medicaid Director to assist with monitoring and compliance of eligible meaningful use incentive recipients.
- f. Collaborate with Wide River Technology Extension Center to ensure that the provider connectivity supported by Wide River Technology Extension Center is consistent with the state's plan for health information exchange.
- g. Cooperate with the national program evaluation.
- h. Participate in the State Health Information Exchange Forum and Leadership Training.
- i. Monitor programmatic progress through scheduled reports, using approved reporting criteria and measures.
- j. Work 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.

NITC eHealth Council

The NITC eHealth Council, in cooperation with NeHII and the State Health Information Technology Coordinator, shall have the responsibility to:

- a. Develop the state's eHealth Plan and application for the State Health Information Exchange Cooperative Agreement Program.
- b. Coordinate activities with the state-designated entity, Wide River Technology Extension Center, the state's health information exchanges, and other stakeholders.

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- c. Work with NeHII to support implementation efforts of the State Health Information Exchange Cooperative Agreement Program.
 - d. Assist the state Health Information Technology Coordinator in providing oversight over implementation of the State Health Information Exchange Cooperative Agreement Program.
 - e. Recommend a framework for governance and oversight of health information technology in the state.
 - f. Make policy recommendations related to health information technology.
 - g. Monitor programmatic progress through scheduled reports, using approved reporting criteria and measures.
 - h. Comply with all reporting requirements and the terms and conditions of the cooperative agreement to ensure the timely release of funds.
 - i. Ensure expenses and matching contributions meet all federal requirements.
 - j. Maintain 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.
 - k. Receive, review, and monitor requests for fund advance or reimbursements from subcontractors or other end recipients of funding.
 - l. Deliver disbursements to subcontractors or other end recipients of funding in a timely manner.

State HIT Coordinator

The State HIT Coordinator shall have the responsibility to:

- a. Coordinate state government participation in health information exchange.
- b. Coordinate activities with NeHII, the NITC eHealth Council, the state's health information exchanges, Wide River Technology Extension Center, and other stakeholders.
- c. Assist 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.
- d. Assist 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.
- e. Provide oversight over the implementation of the State Health Information Exchange Cooperative Agreement Program with the assistance of the NITC eHealth Council.

The Electronic Behavioral Health Information Network (EBHIN) shall have the responsibility to:

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- a. Oversee implementation of the Electronic Behavioral Health Information Network as detailed in Nebraska's Strategic and Operational eHealth Plans and the cooperative agreement.
 - b. Comply 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.
 - c. Collaborate with critical stakeholders, the NITC eHealth Council, the state Health Information Technology Coordinator, NeHII, and the Office of the National Coordinator.
 - d. Make regular reports on the fiscal and programmatic progress of the program to NeHII, the eHealth Council and the state Health Information Technology Coordinator.
 - e. Collaborate with the Medicaid Director to assist with monitoring and compliance of eligible meaningful use incentive recipients.
 - f. Collaborate with Wide River Technology Extension Center to ensure that the provider connectivity supported by Wide River Technology Extension Center is consistent with the state's plan for health information exchange.
 - g. Cooperate with the national program evaluation.
 - h. Work with NeHII, the NITC eHealth Council and State HIT Coordinator to comply with all reporting requirements and the terms and conditions of the cooperative agreement to ensure the timely release of funds.

Nebraska Hospital Association

The Nebraska Hospital Association Foundation shall have the responsibility to:

- a. Partner with the Nebraska Statewide Telehealth Network to purchase, deliver and install telehealth peripherals for use at participating telehealth network sites.
- b. Comply 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.
- c. Make regular reports on the fiscal and programmatic progress of the program to NeHII, the eHealth Council and the state Health Information Technology Coordinator.
- d. Work with NeHII, the NITC eHealth Council and State HIT Coordinator to comply with all reporting requirements and the terms and conditions of the cooperative agreement to ensure the timely release of funds.

Nebraska Department of Health and Human Services

Responsibilities of the Department of Health and Human Services (DHHS) are listed below:

1. DHHS will partner with the Office of the CIO to identify and pursue optimal methods for supporting public health “meaningful use” deliverables.
2. Finalize the security and privacy agreement between DHHS and NeHII to allow DHHS to review data collected by NeHII to determine the work that needs to be done to effectively interface the immunization registry, reportable lab tests and syndromic surveillance with NeHII’s health information exchange system.
3. DHHS shall install and test PHIN MS software on a state server to allow secure exchange of data with health information exchanges.
4. DHHS shall enter into an agreement to extend until at least until March 14, 2014 with NeHII for a bi-directional EdgeServer to support public health meaningful use deliverables related to immunization records, public health reportable lab tests, syndromic surveillance information and other information as agreed upon.
5. DHHS will meet with NeHII, Axolotl Inc., and other regional and specialty health information exchanges to investigate and establish methods to exchange data.
6. DHHS, NeHII, regional and specialty health information exchanges will develop, test and implement methods to exchange data.
7. During the course of this agreement the Office of the CIO and DHHS will develop a budget to approximate \$182,000 for services and \$144,000 for a bi-directional EdgeServer agreement with NeHII at an annual cost of \$36,000 until March 14, 2014. DHHS will consider connections between NeHII and local health departments in this budget.

Ensuring Transparency and Accountability

Transparency

The Nebraska Information Technology Commission and the eHealth Council operate in a transparent manner. All meetings are open to the public. Nebraska’s eHealth plans have been posted to the NITC’s website. Opportunities have been given for public comment. Meeting documents and agendas are posted to the NITC website.

Reporting

Grantees are required to submit ARRA (1512), program progress, and financial reports.

ARRA (1512) Reports. ARRA (1512) reports are due quarterly and include information on expenditures and jobs created.

Financial Reports. The FFR Cash Transaction Report (formerly the PSC-272) is due quarterly and must be submitted within 30 days of the end of the calendar quarter. The Financial Status Report (FSR or SF 269) is due annually and must be submitted

within 30 days after the end of the applicable 12 month period. A final FFR Cash Transaction Report and FSR are due within 90 days after the end of the project period of performance. DAS Central Finance will prepare and submit the FFR Cash Transaction Report. NITC Staff will prepare and submit the FSR.

Program Progress Reports. ONC Program Progress Reports (PPR) are due semi-annually and must include the reporting elements referenced in 45 CFR 74.51 or 92.40 as applicable. ONC will provide guidance for format and further instructions on reporting before the reports are due.

Subrecipient Reports. Subrecipients are required to provide information for the completion of the required reports. Quarterly subrecipient reports will include information on progress made, jobs created, program income along with detailed itemized reimbursement requests that were submitted during the quarter. The schedule for submission of quarterly reports is as follows:

- A. First Quarterly Report due by July 2, 2010
- B. Second Quarterly Report due by October 4, 2010
- C. Third Quarterly Report due by January 4, 2011
- D. Fourth Quarterly Report due by April 4, 2011
- E. Fifth Quarterly Report due by July 5, 2011
- F. Sixth Quarterly Report due by October 4, 2011
- G. Seventh Quarterly Report due by January 3, 2012
- H. Eighth Quarterly Report due by April 3, 2012
- I. Ninth Quarterly Report due by July 3, 2012
- J. Tenth Quarterly Report due by October 2, 2012
- K. Eleventh Quarterly Report due by January 2, 2013
- L. Twelfth Quarterly Report due by April 2, 2013
- M. Thirteenth Quarterly Report due by July 2, 2013
- N. Fourteenth Quarterly Report due by October 2, 2013
- O. Fifteenth Quarterly Report due by January 2, 2014
- P. Sixteenth Quarterly Report due by April 2, 2014

Subrecipients will also provide status reports on the achievement of milestones to the Nebraska Information Technology Commission as outlined in the operational plan. Additionally, subrecipients are required to submit written quarterly progress reports.

Finance

Financing for health information exchange and health information technology will be provided by a number of funding sources, including federal funding and private sector investments. The DHHS Division of Medicaid and Long-Term Care will also play a role in administering incentives to eligible providers for the Meaningful Use of electronic health records.

ARRA Funded Programs

ARRA-funded programs include Medicaid and Medicare incentive programs for eligible providers and hospitals that demonstrate the Meaningful Use of electronic health records. The Office of the National Coordinator is also providing funding through a number of grant programs. A brief description of ONC grant programs can be found below:

Health Information Technology Extension Program will establish Health Information Technology Regional Extension Centers that will offer technical assistance, guidance and information on best practices to support and accelerate health care providers' efforts to become meaningful users of Electronic Health Records (EHRs).

Beacon Community Cooperative Agreement Program will provide funding to communities to build and strengthen their health information technology (health IT) infrastructure and exchange capabilities to demonstrate the vision of Meaningful Use of health IT.

Curriculum Development Centers program will provide \$10 million in grants to institutions of higher education (or consortia thereof) to support health information technology (health IT) curriculum development.

Community College Consortia to Educate Health Information Technology Professionals will rapidly create health IT education and training programs at Community Colleges or expand existing programs.

Program of Assistance for University-Based Training will rapidly increase the availability of individuals qualified to serve in specific health information technology professional roles requiring university-level training.

Competency Examination for Individuals Completing Non-Degree Training will provide \$6 million in grants to an institution of higher education (or consortia thereof) to support the development and initial administration of a set of health IT competency examinations.

Strategic Health IT Advanced Research Projects (SHARP) Program will fund research focused on achieving breakthrough advances to address Security of Health Information Technology, Patient-Centered Cognitive Support, Healthcare Application and Network Platform Architectures, and Secondary Use of EHR Data.

State Health Information Exchange Cooperative Agreement Program support states and/or State Designated Entities (SDEs) in establishing health information exchange (HIE) capacity among health care providers and hospitals in their jurisdictions.

Detailed Cost Estimate

Nebraska will try to leverage all of these sources of ARRA funding. However, the operational plan is focused on implementation of the State HIE Cooperative Agreement Program. The State of Nebraska was allocated \$6,837,180 in funding through the State HIE Cooperative Agreement Program.

Funding from the program will be used to accelerate the development of health information exchange across Nebraska. In order to encourage sustainability, grant funds will be primarily targeted toward hardware, software, and other implementation costs rather than operational expenses.

The State HIE Cooperative Agreement program is a four-year grant program. Most of the grant funds will be expended in year one of the grant. Contractual expenses related to HIE implementation and equipment are expected to be the largest cost categories. Budgets have been prepared and submitted to the Office of the National Coordinator. Revisions and adjustments will likely be made to the budget over the course of the grant. The following tables summarize the budget submitted to ONC on March 3, 2010:

Federal Request

Category	Year 1	Year 2	Year 3	Year 4	Total
Personnel Anne Byers, eHealth Manager, NITC (70%)	\$42,500	\$42,500			\$85,000
Fringe Benefits —Fringe Benefits for Anne Byers will be provided but are not included in the budget.					
Travel -- Travel to required national conferences and local travel	\$31,400	\$31,400	\$27,245	\$14,000	\$104,045
Equipment					
NeHII					
• NeHII/State Lab Connection Set up	\$37,500				\$37,500
• Public Health Vendor Programming costs	\$182,500				\$182,500
• Axolotl modules and advanced interoperability hub	\$1,084,400				\$1,084,400
• NeHII set up costs for implementing 15 hospital gateways, 8 lab gateways and connecting to EBHIN	\$606,000				\$606,000
EBHIN					
• HIE Equipment and Software	\$551,648				\$551,648
• Interface Development	\$110,000				\$110,000

• Portal Development	\$297,042				\$297,042
Telehealth Network					
• Telehealth peripherals	\$73,620				\$73,620
Equipment Total	\$2,942,710				\$2,942,710
Supplies					\$0
Contractual					
NeHII—Technical Operations & project manager	\$665,000				\$665,000
NeHII—Resource Costs for adding hospitals and labs	\$270,000	\$540,000	\$270,000		\$1,080,000
State Lab—Annual License from Axolotl	\$36,000	\$36,000	\$36,000	\$36,000	\$144,000
Interoperability Hub License from Axolotl	\$1,308,900				\$1,308,900
Evaluation	\$68,400	\$68,400	\$68,400	\$68,400	\$273,600
Contractual Total	\$2,348,300	\$644,400	\$374,400	\$104,400	\$3,471,500
Other					
EBHIN—Technology Consulting and Sustainability Implementation	\$153,925				\$153,925
Brochures	\$72,090				\$72,090
Privacy and Security Website	\$7010	\$300	\$300	\$300	\$7910
Other Total	\$233,025	\$300	\$300	\$300	\$233,925
Total Direct Costs*	\$5,597,935	\$718,600	\$401,945	\$118,700	\$6,837,180

Match

The match table represents the minimum match that will be documented. The actual undocumented match is expected to be much larger.

Category	Year 1	Year 2	Year 3	Year 4	Total
Personnel	\$0	\$0	\$0	\$0	\$0
Fringe					
Travel					\$0
Equipment					\$0
Supplies					\$0
Contractual-- NeHII Project Manager	\$65,000	\$260,000	\$260,000	\$260,000	\$845,000
Other					\$0
Total Match*	\$65,000	\$260,000	\$260,000	\$260,000	\$845,000

Financial Accountability

The State of Nebraska will act as the prime recipient and fiscal entity for the State Health Information Exchange Cooperative Exchange Agreement program. The State of Nebraska is committed to transparency and accountability in its handling of all funds, including ARRA funds. The Nebraska Information Technology Commission is working with the Division of Administrative Services Central Finance department and the State Budget Division to ensure that all federal requirements for transparency and accountability are being met. NITC staff worked with subrecipients to prepare the budget submitted with the State HIE Cooperative Agreement and will approve any budget revisions. If a budget revision requires approval from ONC staff, the NITC staff will work with ONC staff to obtain approval.

The Nebraska Information Technology Commission will review requests for payment from subrecipients to ensure that the requests are aligned with the state's eHealth Plan and the Cooperative Agreement budget and include proper documentation. After NITC staff have approved a request for payment and initiated payment, funds will be drawn from the federal account.

The Single Audit Act Amendments of 1996 (31 U.S.C. 7501-7507) requires audits for all entities which expend \$500,000 or more of Federal funds in each fiscal year. The audits are due within 30 days of receipt from the auditor or within 9 months of the end of the fiscal year, whichever occurs first. The State of Nebraska and subrecipients which expend \$500,000 or more of Federal funds in a fiscal year will comply with this requirement.

State of Nebraska

The State of Nebraska has put financial policies, procedures and controls in place to ensure funding is used and handled appropriately.

The following table outlines the expense payment procedure.

Responsible Entity	Responsibilities
State of Nebraska Office of the CIO/NITC	<ul style="list-style-type: none">Develops a contract for each subrecipient.
State of Nebraska Office of the CIO Procurement Team	<ul style="list-style-type: none">Tracks contracts and enters into procurement/accounting system.
Subrecipient	<ul style="list-style-type: none">Submits invoice, documentation, and cover sheet.
State of Nebraska Office of the CIO/NITC—eHealth Manager	<ul style="list-style-type: none">Reviews invoice, documentation, and cover sheet. Additional documentation may be requested. (See approval process.)If all documentation is in order, the request for payment is approved and coded with business unit, object code, and subsidiary code. (See approval form).
OCIO Procurement Team	<ul style="list-style-type: none">Creates a purchase order.Purchase order is approved by "OCIO administrator.The approved purchase order is receipted by the procurement team. Copy of paperwork is sent to Central Finance for processing (PO

	and invoice.
State of Nebraska Central Finance	<ul style="list-style-type: none"> Processes the request for payment.
State of Nebraska Accounting	<ul style="list-style-type: none"> Processes “letter of credit.”
State of Nebraska Office of the CIO/NITC—eHealth Manager	<ul style="list-style-type: none"> Submits quarterly ARRA 1512 and biannual progress reports.
State of Nebraska Accounting	<ul style="list-style-type: none"> Submits quarterly financial report.

Process for Approving Payment

The process for approving payment is described below. If one of the following questions is answered satisfactorily (or receives a green flag), the review proceeds. If a question is not answered satisfactorily, further information or action is needed. If concerns are not adequately addressed, expenses may be disapproved.

Is documentation complete?

- Is cover sheet completed and signed?
 - If yes, green flag 
 - If no, yellow flag 
- Is the invoice complete and signed?
 - If yes, green flag 
 - If no, yellow flag 
- Is sufficient supporting documentation included?
 - If yes, green flag 
 - If no, yellow flag 

Are the expenses included in the budget?

- If yes, green flag 
- If no, yellow flag  Note: The budget may need to be revised.

Are there significant deviations between the actual expenses and the estimated costs in the budget?

- If no, green flag 
- If yes, yellow flag  Note: The budget may need to be revised.

Are cumulative deviations in the budget becoming significant?

- If no, green flag 
- If yes, yellow flag  Note: The budget may need to be revised.

Are costs reasonable?

- If yes, green flag 
- If no, yellow flag 

Are any costs expressly unallowable (i.e., alcohol, travel to the Bahamas, swimming pools, golf courses, aquariums) or problematic (i.e., food)?

- If no, green flag 
- If yes, yellow flag 

Do the activities/purchases included in the invoice support the implementation activities included in the plans project schedule/timeline?

- If yes, green flag 
- If no, yellow flag  Note: The schedule/timeline may need to be revised.

Are the activities/purchases included in the invoice within the scope of the grant?

- If yes, green flag 
- If no, yellow flag 

If all green flags, OK the payment.

The form used to approve payment is included below.

Office of the CIO/NITC Use Only

Category/Business Unit	Object Code/Subrecipient	Subsidiary	Amount
65150301 Planning HIE	NeHII 594101	Staff	
65150302 Nationwide Inter-State HIE	EBHIN 594102	Travel	
65050303 Regional Intra-State HIE	NHA Foundation 594103	Equipmnt	
	HIE State Expenses 594104	Supplies	
		Contract	
		Other	
Invoice Total	-----	-----	

____ Approved _____

Signature

Date

The cover sheet required to be submitted with invoices and documentation is on the following page.

State HIE Cooperative Agreement Invoice Cover Sheet

Date:

Agreement Title/Contract Number:

Invoice #:

Invoice Total:

Please check if planning or implementation:

Planning

Implementation

Subrecipient:

NeHII 594101

EBHIN 594102

NHA Foundation 594103

HIE State Expenses 594104

Please check budget/subsidiary category:

Staff

Travel

Equipmnt

Supplies

Contract

Other

Description of activity/purchase (as listed in the budget):

Please describe how this activity/purchase supports planning/implementation of the State HIE Cooperative Agreement.

If necessary, please supply any additional information. (For example, if there is a significant variation from the budgeted amount, please explain.)

“I certify that all expenditures reported (or payment requested) are for appropriate purposes and in accordance with the agreements noted above. “

Signature

Date

NeHII

NeHII has put financial policies, procedures and controls in place to ensure funding is used and handled appropriately.

NeHII tracks expenditures to ensure resources are allocated appropriately. NeHII understands that significant funds have been, and will be allocated, to the State through ARRA funding. It is incumbent upon the NeHII stakeholders to manage those funds accurately and efficiently.

To that end, NeHII has created process and procedures around the accounting of these resources.

The following process addresses the receipt, payment, and reporting of vendor invoice payments for NeHII, Inc.

Accounts Payable

- 1) At the completion of each service period, as defined by the agreed-upon Statement of Work between the vendor and NeHII, Inc., the vendor will provide an invoice for services rendered. The invoice shall contain all information required by the Statement of Work, and shall be addressed to the Treasurer of the NeHII Board of Directors, care of NeHII's account, Dolleck & Frederes.
- 2) Dolleck & Frederes will document receipt and gather all invoices, ensure completeness and present to the NeHII Finance Committee in a timely manner, chaired by the Treasurer of the NeHII Board of Directors. The NeHII Finance Committee will review all vendor invoices. Approved invoices will be submitted for payment, pending the availability of adequate funding as confirmed by Dolleck & Frederes. Invoices requiring further investigation or information will be returned to Dolleck & Frederes for handling in a timely manner.
- 3) At each monthly Finance Committee Meeting, Dolleck & Frederes will present all applicable and requested reports for review and approval.
- 4) Upon approval, Dolleck & Frederes will document and remit payment for outstanding invoices as dictated by the NeHII Finance Committee. Generally, payment will be made on a first-in-first-out method, though NeHII reserves the right to deviate from this process as special circumstances require, with Finance Committee approval.

Accounts Receivable

- 1) At the completion of each service period, as defined by the executed contract between NeHII and the Participant/Supplier, Dolleck & Frederes will generate and submit an invoice for payment which includes all required documentation by the participant/supplier. Invoices should be sent "net 30 days", unless special circumstances and prior approval/understanding is made between participant/supplier.

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- 2) NeHII's vendors will supply all required documentation to Dolleck & Frederes for communication to participant/supplier.
 - 3) Upon payment, Dolleck & Frederes will provide proof of receipt and payment to participant, and will report on all received and outstanding payments to the NeHII Finance Committee at that month's meeting.

eBHIN

eBHIN has also developed financial policies, procedures and controls to ensure funding is used and handled appropriately. Two sections of eBHIN's financial procedures manual are included below.

General

- a. The Board of Directors formulates financial policies, delegates administration of the financial policies to the Network Director and reviews operations and activities.
- b. The Network Director has management responsibility including financial management.
- c. Current job descriptions for employees will be maintained for all employees, indicating financial duties and responsibilities, as well as performance expectations for contractors with timelines.
- d. Financial duties and responsibilities must be separated so that no one employee has sole control over cash receipts; disbursements; payroll; reconciliation of bank accounts; etc.
- e. employee dishonesty coverage in the amount of \$25,000 shall be maintained.
- f. Professional financial service providers will be established annually. For 2008, these include Grafton & Associates (accounting software and payroll services), Unico (insurance), Pinnacle Bank (banking), and _Auditors to be named from an RFP process issued in Fall of 2008 (auditors).
- g. The Network Director will maintain a current and accurate log of the chart of accounts, job accounts and accounting classes.
- h. These policies and procedures will be reviewed annually by the Audit Committee.

Grants and Contracts

1. The Network Director will carefully review each award and contract to ensure compliance with all financial and programmatic provisions. The Network Director will maintain originals of all grants and contracts in a file. The Consulting Accountant will prepare initial entries as appropriate to record each award.
2. The Network Director will prepare and maintain on a current basis a Grant/Contract Summary form for each grant or contract awarded to Electronic

Behavioral Health Information Network. This form shall include the name, address, contact person, and phone number for the funding organization; the time period applicable to expenditures; all significant covenants (such as bonding or liability insurance requirements) and restrictions on expenditures; all required financial, program report, and contracts deliverables due dates; and the chart of accounts line item number for the revenue deposited.

3. Payments for projects for which Electronic Behavioral Health Information Network serves as fiscal agent shall be paid out within two weeks.
4. The Network Director/Administrative Assistant will prepare financial reports to funding sources as required.
5. The Network Director will review and approve all reports to funding sources.
6. It will be the responsibility of the Network Director to insure that all financial reports are submitted on a timely basis.

Sustainability

NeHII

NeHII has built 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. 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. At the time of rollout, NeHII had commitments from enough hospitals and physicians in Nebraska that the license revenue would fund NeHII efforts indefinitely, meaning NeHII would be operationally sustainable from the first day of operation. Today, that model continues to hold true as more and more participants join NeHII, effectively sharing the operational costs between them.

The costs for gateway licenses for hospitals are listed below:

Hospital Size (# of beds)	Cost per month	Annual fee
1-25 beds	\$1,500	\$18,000
26-50 beds	\$2,000	\$24,000
51-150 beds	\$2,500	\$30,000

151 – 300 Beds	\$4,000	\$48,000
301 – 500 Beds	\$8,000	\$96,000
>500 Beds	\$12,000	\$144,000

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

BlueCross BlueShield of Nebraska is offering to subsidize the license fees for Nebraska’s critical access hospitals, addressing the financial barrier to participation faced by critical access hospitals.

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

In addition, participating Health Plans with access to the system will be required to pay license fees of \$25,000 per year, plus \$1.00 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.

One of many committees of the NeHII Board of Directors, the HIE Advisory Council, has been tasked with identifying, evaluating, and recommending new revenue generation strategies. These strategies are evaluated based on their ability to generate renewable revenue streams while adhering to the mission and vision of NeHII. A few of these strategies are:

- Cost per claim – Claims Clearinghouse;
- Personal Health Record Gateways;
- Functionality-based pricing (Registries, CPOE); and
- eRX per click charge.

NeHII is also actively working with surrounding states to connect them to NeHII as a service provider. This will not only expand the number of users in NeHII who can share the operational costs, but will allow NeHII to realize revenue that is completely independent of Nebraska sources. This allows NeHII to continue to refine the operational model while finding ways to reduce the cost to NeHII participants.

Federal funding from the State HIE Cooperative Agreement program will be used to expand services available and to accelerate the expansion of NeHII. Funding from other federal programs will also be leveraged.

NeHII's projected revenue and net income for 2010-2012 are listed below:

- Project Revenue from gateway and clinical licenses
 - 2010 - \$746,349
 - 2011 - \$2,747,040
 - 2012 - \$2,747,040
- Net Income
 - 2010 – \$386,913
 - 2011 - \$7,898,440
 - 2012 - \$523,940 <- Does not include substantial Stimulus income

EBHIN

The funding made available through the Cooperative Agreement will be 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 will primarily be invested through the purchase of hardware and software applications that will allow EBHIN to host the Centralized Data Repository (CDR) applications. The CDR will provide the Virtual Behavioral Healthcare record that, with consent, can be uploaded to NeHII and made available to medical

providers across the state. 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 will be integrated with the CDR to create a comprehensive and streamlined data capture process. Once these major preliminary investments are made, existing technology resources can be shifted to support a more efficient, shared platform.

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

Stakeholder	Services	Benefits
Behavioral Healthcare Providers	<ul style="list-style-type: none"> • Single point of data entry for ASO documentation and EMR/EPM applications • ePrescribing • Lab Results • Clinical Decision Support 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Aggregate database reporting capability • Wait list and referral management • Payment capabilities 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Timely access to accurate information 	<ul style="list-style-type: none"> • Decreased average length of stay • Long term decrease in emergency services utilization

State of Nebraska	<ul style="list-style-type: none"> • Aggregate database reporting capability 	<ul style="list-style-type: none"> • Increased data integrity • Better National Outcome Measures • Increased probability for the retention of Federal funding
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Based on the estimated return, stakeholder investments will be contributed from a variety of sources, including:

- Membership fees from participating providers;
- Reporting, and wait list/referral management services of interest to the Regional Behavioral Healthcare Authorities;
- Grants from Federal, State and local funders; and
- Hosting fees consistent with the scope of application deployment.

Sustainability Goals Schedule

This project will be implemented with the following sustainability goals as outlined below. The schedule for potential implementation is proposed only and will actually be based on readiness as the time comes.

Goals	Activities	Timeframe
Goal 1. Core Implementation	<ul style="list-style-type: none"> • System Acquisition • System Configuration • Deployment in Region V • Governance Development 	Year 1 & 2
Goal 2. Broadening Scope	<ul style="list-style-type: none"> • Organizational Work and potential deployment in Regions 1, & 6 • Organizational work and potential deployment in Regions 3 & 4 • Organizational work and potential deployment in Region 2 • Governance Implementation 	Year 2 -3 Year 3-4 Year 5
Goal 3. Building Sustainability	<ul style="list-style-type: none"> • Fund Development • Increasing Provider Participants 	Year 1 - 5

EBHIN Projected Budget 2010-2015

Income	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	Total
Membership Fees		6,000	24,500	43,500	48,000	122,000
Hosting/Maintenance Fees		39,680	87,825	175,650	200,650	503,805
Reporting & Coordination Services		60,000	240,000	400,000	440,000	1,140,000
Grants	1,661,890	307,430	200,000	176,945		2,346,265
Contributions	290,000	120,000				
Total	1,951,890	533,110	552,325	796,095	688,650	4,522,070
Expense Category						
Personnel	308,400	317,635	327,165	336,980	347,090	1,637,270
Travel	34,300	35,330	36,390	37,480	38,600	182,100
Equipment	923,690		175,000	175,000		1,273,690
Maintenance Fees	7,715	23,380	70,140	116,900	128,590	346,725
Datacenter	26,000	53,560	66,950	83,690	92,060	322,260
Consultant Contracts	312,755	105,455	58,520	60,195	52,455	589,380
Indirect	30,650	31,750	33,710	36,375	38,160	170,645
Total	1,643,510	567,110	767,875	846,620	696,955	4,522,070
Net	308,380	(34,000)	(215,550)	(50,525)	(8,305)	0

Budget Assumptions

- 1) On-going fund development for both grants and contributions in 2011-2014
- 2) Grant and contributions income committed 100% in 2010-2011 and 56% committed in 2011-2012
- 3) Capital Investments are obtained through grant funding

Issues and Risks

EBHIN faces numerous issues and risks as it embarks upon the broadening of the scope of this project as outlined below:

- 1) The Stimulus Funding opportunity has created a flood of new business in the technology marketplace. Demands placed on both hardware and software companies for products could possibly delay delivery if their production can't keep pace.
- 2) Support from the Regions has been promising with their initial agreements toward cooperation. 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 has executed a contract with NextGen to secure costs and project management availability. Once funds are available through the Cooperative Agreement, we will immediately start the process of equipment procurement to get as much ahead of production demand as possible.
- 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 the changes in scope proposed, EBHIN will be adding insurance coverage to help offset the additional risks of the expanded scope of the project.

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 NHIN requirements;
- Participation of physicians;
- Participation of hospitals;
- Participation of other providers;
- Consumer trust and acceptance;
- Role of Medicaid; and
- Security and privacy breaches.

Uncertainty over Meaningful Use, Certification, and NHIN Requirements

Description: As Nebraska develops this version of its eHealth operational plan, Meaningful Use, certification, and NHIN requirements are still under development. This makes planning more challenging and will require flexibility.

Level: 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. Physician interest in participating in NeHIE has grown, due in part to interest in receiving incentives from Medicaid and Medicare.

Level: 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: NeHIE offers a web-based EMR which can be incorporated into a physician practice with relative ease. Physicians who already have or intend to purchase electronic medical record systems can also utilize NeHIE. Pricing for physicians is reasonable—less than a monthly cable bill. EBHIE 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, the Wide River Technology Extension Center can provide assistance in adopting electronic medical records and utilizing health information exchange. Regional Extension Centers were established as part of the Health Information Technology for Economic and Clinical Health (HITECH) Act. \$6.6 million was awarded to CIMRO of Nebraska, the Medicare Quality Improvement Organization for the state of Nebraska, as a four-year cooperative agreement grant from The Office of the National Coordinator for Health Information Technology (ONCHIT) to establish Wide River TEC to assist Nebraska healthcare providers with implementing and using Electronic Health Records (EHRs). 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 Hospitals

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

Level: 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 quickly reach a critical mass of participating hospitals—especially in terms of the percentage of hospital beds served by NeHII. As of Feb. 2010, eight hospitals with a total of 2,370 beds are participating in statewide health information exchange. These hospitals account for approximately 36% of the hospital beds in Nebraska. By the end of the third quarter of 2010, at least five additional hospitals are expected to be participating in NeHII, bringing the percentage of hospital beds in participating hospitals to 44%.

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. Additionally, BlueCross and BlueShield of Nebraska has offered to subsidize the NeHII licensing fee for critical access hospitals in Nebraska for one year.

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.

Level: 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: Connecting other providers will be one area of focus in future operational plans. EBHIN will play an important role in connecting behavioral health providers in southeast Nebraska. As time and resources allow, EBHIN intends to expand its services to other regions. The eHealth Council and NeHII will continue discussions with other providers.

Consumer Trust and Acceptance

Description: Consumer acceptance of health information exchange is critical. Although consumers in Nebraska do have some concerns about privacy and security of health information, consumers see the value of health information exchange and are supportive of health information exchange. Fewer than 2% of consumers have opted out of NeHII.

Level: 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. The eHealth Council also plans to develop consumer health information security materials, including a website and brochure.

Role of Medicaid

Description: The DHHS Division of Medicaid and Long-Term Care has participated in the state's eHealth planning process and the Medicaid director is on the State eHealth Council and the NeHII Board of Directors. During the second half of 2010, the State will be developing the Nebraska State Medicaid HIT Plan (SMHP) as part of the preparation for processing of EHR Incentive Payments. The plan should articulate the role of Medicaid more definitively with respect to the scope of this eHealth Operational Plan. While Medicaid is anticipating participation in the statewide health information exchange, until the SMHP is developed a definitive and permanent commitment is premature.

Level: Medium

Potential Impact: Will likely delay Medicaid’s participation in health information and may affect the value of the HIE

Resolution and Mitigation Strategies: The DHHS Division of Medicaid and Long-Term Care has issued an RFP for assistance in the development of the State Medicaid HIT Plan (SMHP). During the second half of 2010, this expert assistance will be utilized to analyze the current state of Meaningful Use and will incorporate it into the analysis of the requirements and actions to be taken under the SMHP.

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.

Level: High

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.

EBHIN has also developed privacy and security policies. EBHIN uses an opt-in approach. This policy is based on Title 42 of the Code of Federal Regulations which stipulates the requirement that an authorization for release of information be obtained for substance abuse treatment records. The differences in approaches used by EBHIN and NeHII can be addressed through a trust agreement between the two exchanges.

Nebraska also has a privacy and security enforcement framework in place if a breach or violation would occur.

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 NHIN through other means.

Level: Low to 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. Participants included many of the state's largest health systems, including Alegant Health, Children's Hospital and Medical Center, Methodist Health System, and The Nebraska Medical Center. BlueCross and BlueShield of Nebraska also participated in the pilot. Mary Lanning Memorial Hospital has since joined NeHII, going live in January 2010. As of March 5, over 400 physicians and staff are participating in NeHII. Over 1.5 million patients are included in NeHII's Master Patient Index. Since May 1, 2009, over 350,000 requests have been completed. Over 96% of these requests have been completed in less than 2 seconds.

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

Patient Registration: Avairis, Cerner, EPIC, HBOC, HMS, IDX, Invision, McKesson, Meditech, Paragon, Quadramed, Siemens. Touchwords

Laboratory Information and Results Reporting: Afflab, Antrim, Cerner, CompuLab, DRL Labs, Hunter, LabCorp, LabDac, McKesson, MDS, Meditech, Misys, Orchard, Quadramed, Quest Diagnostics, Radnet, SSC Softlab, Siemens, Stanford Labs

Radiology Information and Results Reporting: ADAC, ATMS, Cerner, Chartscript, IDX, Keane, McKesson, Meditech, Mysis, Novius, Paragon, Powerscribe, Quadramed, Siemens, Customer Word and WordPerfect radiology transcription services

Health Information Management (HIM): Arrendale, ATMS, DVI, Dictaphone, Dolby, Lanier, Medquist, Quadramed, Softmed, TNI, Your Office Genie

Pathology: Cerner, Cortex, Dictaphone, Misys CoPath, SoftPath

Interface Engines: CAI, Cloverleaf, eGate, Websphere Transformation Extender

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

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

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

licensing fees, BlueCross and BlueShield of Nebraska is offering to subsidize the license fee for a year. Additional information on services and pricing is included in other sections of the plan.

Dependence on a Single Health Information Exchange Vendor

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

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

Level: Low

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

Axolotl has been providing health information exchange solutions to meet the needs of physicians, hospitals, regional health information organizations (RHIOs) and statewide HIEs for 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 will be 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 will be in charge of monitoring this project. Anne Byers, Community and Health IT Manager, for the NITC will be responsible for coordinating the eHealth Council's activities and day-to-day oversight 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 will be 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, will be responsible for:

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

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

Responsibilities of the State HIT Coordinator include:

- Coordinating state government participation in health information exchange.
- Coordinating activities with 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 will assume the primary responsibility for directing and executing the State Health Information Exchange Cooperative Agreement program in Nebraska. NeHII will work cooperatively with the Nebraska Information Technology Commission (NITC) eHealth Council and the State Health Information Technology Coordinator to facilitate and coordinate the implementation of health information exchange in the state. Deb Bass, Interim Executive Director of NeHII, and Chris Henkenius, Project Manager for NeHII, will be responsible for managing the implementation of the project. Chris Henkenius will oversee the technical implementations with the assistance of a Project Manager and 2 full-time HIT trainers. Day-to-day operations of the exchange, including adoption activities, will be the charge of Deb Bass, Interim Executive Director of NeHII. Deb Bass and Chris Henkenius are jointly responsible for recruiting new providers into being participants and resolving issues as they arise. NeHII employs additional resources as needed to efficiently operate the exchange.

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

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

Period of performance: NeHII's managed service contract with Bass has been in existence for 3 years, and has a termination date of 12/31/2014.

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

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

NeHII will provide management of the statewide health information network. Key staff are identified below:

Technical Operations

- Deb Bass (Interim Executive Director)
 - Full Time (100%)
 - Day to Day Operations Management
 - Sales
- Chris Henkenius (Program Manager)
 - Part Time (50%)
 - Day to Day Operations Management
- Sara Juster (Privacy Officer)
 - Part Time
 - Day to Day Privacy Activities
- Brenda Wessel (System Manager)
 - Full Time
 - System Management
 - User Identification and Provisioning
 - Reporting
 - Opt outs
- Katie Cue (Project Coordinator)
 - Full Time
 - Admin support
 - Letters and communications
 - Marketing support

Project Management

- Connie Pratt (Project Manager)
 - Full Time (\$125 per hour)
 - New Installation Project Management
 - Management and support
 - Training and Sales Support

Resource Costs for Adding Hospitals and Labs

- Anne Dworak (Clinical Strategist)
 - Full Time (\$105 per hour)
 - Training
 - Physician Educations
 - Workflow Development
 - Physician Engagement
- Project Manager (TBA)

NeHII's responsibilities include:

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

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

eBHIN

Staffing Plans Including Project Managers and Other Key Roles

Existing Staffing Resources		
Position Title	FTE	Description of Role
Network Director	1.0 All Years	Responsibilities for marketing and user recruitment, governance set-up, and overall management of the organization. The 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.
Project Manager	1.0 All years	Work in collaboration with system administrator, the application vendors and the Network Director to plan and implement system installation and training at all network facilities.
Administrative Assistant	1.0 All years	Primary organizational support staff for leadership team. Arrange for meetings, conduct mailings and assist with any documentation necessary for corporate documentation and activities such as minutes, filing systems and fiscal records.

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

Benchmarks and Targets

Measures—NeHII	Jan. - March 2010 Actual	April- June 2010 Target	July- Sept. 2010 Target	Oct.- Dec. 2010 Target
Number of Clients				
<ul style="list-style-type: none"> Number of clients in the Master Patient Index 	1,544,570	1,700,000	1,800,000	1,900,000
<ul style="list-style-type: none"> Number of Nebraska clients in the Master Patient Index 	1,138,107	1,200,000	1,250,000	1,300,000
<ul style="list-style-type: none"> Total patients that have Opted Out 	27,032	28,800	29,800	30,800
<ul style="list-style-type: none"> Total patients Opting back In 	2,092	2,100	2,200	2,300
Provider Information				
<ul style="list-style-type: none"> Number of successful matches within a facility/across the community 	155,642	158,755	165,105	168,407
<ul style="list-style-type: none"> Number of physicians and staff using the Virtual Health Record (VHR) 	296	912	1078	1312
<ul style="list-style-type: none"> Number of physicians and staff using the EMR 	137	281	404	516
<ul style="list-style-type: none"> Total number of physicians using VHR or the EMR 	327	1027	1327	1627
Hospital Information				
<ul style="list-style-type: none"> Number of hospitals participating 	8	13	13	13
<ul style="list-style-type: none"> % of hospitals participating 	8	16	16	16
<ul style="list-style-type: none"> Percent of hospital beds covered 	36	44	44	44
Public Health Information				
<ul style="list-style-type: none"> State systems connected 	0	0	0	0
<ul style="list-style-type: none"> Local health departments connected 	0	0	1	1
<ul style="list-style-type: none"> Percent of public health departments connected 	0			
Payer Information				
<ul style="list-style-type: none"> Number of payers participating 	1	1	1	1
Laboratory and Imaging Facility Information				
<ul style="list-style-type: none"> Number of labs and imaging facilities connected 	3	4	4	4

• Percent of lab and imaging facilities connected	0	0	0	0
Specialty Exchange Connections				
• Number of specialty exchanges connected	0	0	0	0
Number of Requests in the System:				
• Total Requests completed since May 1, 2009	374,664	476,646	596,984	740,889
• Total Requests completed in less than 2 seconds	360,665	458,087	573,104	710,513
• Requests completed this quarter	83,907	101,982	120,338	143,905
Total Number of Prescriptions Sent Electronically, Faxed or Printed				
• Electronic	3,799	5,323	7,022	8,772
• Printed	127	160	210	263
• RxHUB Mail Order	19	22	26	31
Number of prescriptions sent this quarter	1,219	1,279	1,356	1,452
Total Number of Results Sent to Exchange				
• LAB	5,710,419	7,248,804	8,890,310	10,553,251
• RAD	1,622,869	1,974,498	2,343,709	2,723,995
• Transcription	781,472	1,044,999	1,321,702	1,603,939
Number of Results Sent to Exchange this Quarter				
• LAB	1,507,475	1,537,625	1,641,506	1,662,941
• RAD	344,734	351,629	369,211	380,286
• Transcription	255,851	263,527	276,703	282,237
Meaningful Use Measures Offered				
• Number of Meaningful Use measures offered	3			

Meaningful Use Measures Currently Offered:

- E-prescribing
- Electronically exchanging key clinical information
- Electronically checking insurance eligibility information

Measures—EBHIN	Jan. - March 2010	April- June 2010	July- Sept. 2010	Oct.- Dec. 2010
Number of Clients				
<ul style="list-style-type: none"> Number of clients in the Master Patient Index 			592,000	592,000
<ul style="list-style-type: none"> Total patients that have Opted Out 			280	460
<ul style="list-style-type: none"> Total patients Opting back In 				
Provider Information				
<ul style="list-style-type: none"> Number of physicians and staff participating 			383	776
<ul style="list-style-type: none"> Total number of clinicians using VHR or the EMR 			71	78
Number of Requests in the System:				
<ul style="list-style-type: none"> Total Requests completed since May 1, 2009 			3,500	9,250
<ul style="list-style-type: none"> Requests completed this quarter 			3,500	5750
Total Number of Prescriptions Sent Electronically, Faxed or Printed				
<ul style="list-style-type: none"> Electronic 				
<ul style="list-style-type: none"> Printed 				
<ul style="list-style-type: none"> RxHUB Mail Order 				
<ul style="list-style-type: none"> Number of Prescriptions Sent Electronically, Faxed or Printed this Quarter 				
Meaningful Use Measures Offered				
<ul style="list-style-type: none"> Number of Meaningful Use measures offered 				

Schedule

Schedules have been developed for the anticipated connections of hospitals, physicians, laboratories, and other facilities. An overall implementation schedule has also been developed.

Hospitals

Quarter	County	HIE	Hospital
2009-3	Douglas	NeHII	Alegent--Immanuel Medical Center
2009-3	Douglas	NeHII	Alegent--Bergan Mercy Medical Center
2009-3	Sarpy	NeHII	Alegent--Midlands Hospital
2009-3	Douglas	NeHII	Alegent--Lakeside Hospital
2009-3	Douglas	NeHII	Methodist Health System
2009-3	Douglas	NeHII	The Nebraska Medical Center
2009-3	Douglas	NeHII	Childrens Hospital and Medical Centers
2010-1	Adams	NeHII	Mary Lanning Memorial Hospital
2009 Subtotal			8

Quarter	County	HIE	Hospital
2010-2	Lincoln	NeHII	Great Plains Regional Medical Center
2010-2	Douglas	NeHII	Creighton University Medical Center
2010-2		NeHII	Hospital
2010-2		NeHII	Hospital
2010-2		NeHII	Hospital
Subtotal			5
Cumulative			13

Quarter	County	HIE	Hospital
2011-1		NeHII	Hospital
Subtotal			1
Cumulative			14

Quarter	County	HIE	Hospital
2011-3		NeHII	Hospital
Subtotal			1
Cumulative			15

**Total Hospitals and Licensed Beds in
Nebraska** **95**

Other Facilities/Providers

Quarter	County	HIE	Type of Provider	Facility Name or Description
2009-3	Douglas	NeHII	Health Plan	BCBSNE
2009-4	Douglas	NeHII	Lab	Core Lab
2010-2	Douglas	NeHII	Lab	Methodist Lab
2010-2	Douglas	NeHII	Lab	The Nebraska Medical Center Lab
2010-2	Lancaster	NeHII	State Lab	State of Nebraska
2010-3	Douglas	NeHII	Lab	Physicians Lab
2010-3	Douglas	NeHII	Imaging	Nebraska Health Imaging
2010-4	Lancaster	EBHIN	Behavioral Health	Region V Systems
2010-4	15 Counties	EBHIN	Behavioral Health	Blue Valley Behavioral Health BryanLGH-Behavioral Health Emergency Dept.
2010-4	Lancaster	EBHIN	Behavioral Health	Lancaster Co. Community Mental Health Center
2011-4	Lancaster	EBHIN	Behavioral Health	St. Monica's
2011-4	Lancaster	EBHIN	Behavioral Health	Houses of Hope
2011-4	Lancaster	EBHIN	Behavioral Health	Cornhusker Place
2011-4	Lancaster	EBHIN	Behavioral Health	Lincoln Medical Education Partnership
2011-4	Lancaster	EBHIN	Behavioral Health	Lincoln Council on Alcoholism & Drugs
2011-4	Lancaster	EBHIN	Behavioral Health	Mental Health Association
2011-4	Lancaster	EBHIN	Behavioral Health	Center Pointe
2011-4	Lancaster	EBHIN	Behavioral Health	Child Guidance
2011-4	Lancaster	EBHIN	Behavioral Health	Lutheran Family Services

Additional facilities will be added as their affiliated hospitals/providers join.

Physicians

Quarter	County	HIE	Clinic/ Physician Group	# Physicians/ Practitioners
2010-2	Douglas	NeHII	Various	700
2010-3	Douglas	NeHII	Various	300
2010-4	Lancaster	NeHII	Various	300
2011-1	Lancaster	NeHII	Various	300
2011-2	Various	NeHII	Various	100
2011-3	Various	NeHII	Various	100
Total scheduled to be connected				1800
Total # of practitioners in Nebraska				5606
% of practitioners scheduled to be connected				32%

Additional facilities will be added as their affiliated hospitals/providers join.

General Timeline

Quarter	Entity	Domain	Activity	StartDate	End Date	Status
2009-4	NITC	Gov	Develop Operational Plan Develop Charter	11/1/2009	4/15/2010	
ONC			Award State HIE Cooperative Agreement Planning Funds	3/15/2010	3/14/2014	Complete
ONC			Award Regional Health IT Extension Center	2/12/2010		
		Priv	Privacy			
2010-1	NITC	Priv	Research Privacy and Security Enforcement Framework	12/1/2009	3/31/2010	Complete
2010-1	NITC	Priv	Report: Privacy and Security Enforcement Framework		3/31/2010	Complete
2010-1	NITC	Priv	Attorney General's Office Contacted			
2010-1	NITC	Priv	Meeting with privacy and security officers, HHS, & Attorney General's Office1.31.2010	1/31/2010	1/31/2010	Complete
2010-1	Lt Gov	Priv	Work on removing 180-day limit on authorizations for release of PHI	12/1/2009	5/1/2010	Approved by Governor
2010-1	Lt Gov	Priv	Report: Removing 180-day limit on authorizations for release of PHI	5/1/2010	5/1/2010	
2011-1	NeHII	Priv	Develop trust agreements	1/1/2011	6/30/2011	
2011-2	NeHII	Priv	Report: Develop trust agreements	6/30/2011	6/30/2011	
2010-1	NeHII/WRTEC	Adopt	Adoption--Coordination with Related Initiatives	12/1/2009	12/31/2011	
2010-1	NeHII/WRTEC	Adopt	Extension Center Coordination--Planning and Start Up Phase	12/1/2009	4/30/2010	
2010-1	NeHII/WRTEC	Adopt	Coordination of Activities by staff and advisory boards	12/1/2009	7/30/2010	
2010-1	NeHII/WRTEC	Adopt	Cross training of staff	12/1/2009	7/30/2010	
2010-1	NeHII/WRTEC	Adopt	Alignment of strategic initiatives	12/1/2009	7/30/2010	
2010-2	NeHII/WRTEC	Adopt	Provider Pre Implementation	4/15/2010	12/31/2012	
2010-2	NeHII/WRTEC	Adopt	Cross Referral and cooperative marketing efforts	4/15/2010	12/31/2012	
2010-2	NeHII/WRTEC	Adopt	Provider Implementation--May 2010	5/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Coordinating provider training and implementation activities	5/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Cooperatively identifying and resolving issues	5/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Sharing best practices and lessons learned	5/1/2010	1/1/2014	
2010-2	NeHII/WRTEC	Adopt	Post Provider Implementation	9/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Sharing feedback as part of formative evaluation	9/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Sharing success stories of successful implementation resulting in MU	9/1/2010	12/31/2014	
2010-1	NITC	Gov	Governance	12/1/2009	4/30/2010	
2010-1	NITC	Gov	Finalize agreements between State of Nebraska and NeHII	12/1/2009	4/30/2010	
2010-1	NITC	Gov	Develop agreements with regional and specialty HIEs	12/1/2009	4/30/2010	
2010-1	NITC	Gov	Develop accounting and oversight mechanisms	12/1/2009	4/15/2010	Complete
2010-1	NITC	Gov	Report: Governance	1/31/2009	4/15/2010	Complete
		FIN	Medicaid			
2009-4	Medicaid	FIN	Submission of HIT Planning Advance Planning Document		12/26/2009	Complete
2010-1	Medicaid	FIN	Release RFP for Contractor		3/1/2010	Complete
2010-2	Medicaid	FIN	Contract Award		7/1/2010	
2011-1	Medicaid	FIN	Completion of SMHP		12/31/2010	Dependency with Planning for Connecting to Medicaid

2011-1	Medicaid	FIN	Sharing of SMHP with eHealth Council		12/31/2010
2011-1	Medicaid	FIN	Medicaid incentives start	1/2/2011	12/31/2014
	NeHII	TI	Technical Infrastructure		
2010-1	NeHII	TI	Planning for connecting to Public Health	1/1/2010	3rd quarter 2010
2010-4	NeHII	TI	Planning for connecting to Medicaid	11/15/2010	
2010-1	NeHII	TI	Planning for connecting to regional and specialty HIEs	1/1/2010	
			Business and Technical Operations		
2010-2	NeHII	BTO	Implement Physician Order Entry	6/1/2010	6/31/2010
2010-2	NeHII	BTO	Implement Disease Registry Functionality	6/1/2010	6/31/2010
2010-2	NeHII	BTO	Implement Advanced Interoperability Hub	6/1/2010	6/31/2010
2010-2	NeHII	BTO	Report: Physician Order Entry, Disease Registry, Interoperability hub	6/31/2010	6/31/2010
2010-2	NeHII	BTO	Implement Consumer Education Campaign	6/1/2010	ongoing
2010-2	NEHII	BTO	Implement Five (5) New Hospital Gateways	4/1/2010	6/30/2010
2010-2	NEHII	BTO	Add and Train Seven Hundred (700) New Physicians	4/1/2010	6/30/2010
2010-2	NeHII	BTO	Report: Hospital, physician connections	6/30/2010	6/30/2010
2010-2	SNBHIN	BTO	1.1.a. Purchase Hardware and Software for all providers	4/1/2010	4/30/2010
2010-2	SNBHIN	BTO	1.1.b. Orient Pilot Project Provider Groups (4 of 13 providers)	6/1/2010	6/30/2010
2010-2	SNBHIN	BTO	1.1.c. Execute User and Network Participant Agreements w/Pilot providers	4/1/2010	6/30/2010
2010-2	SNBHIN	BTO	1.1.d. Select Data Center Contractor	4/1/2010	4/30/2010
2010-2	SNBHIN	BTO	1.1.e Install Pilot Project Providers' Hardware and Software	4/1/2010	5/31/2010
2010-2	SNBHIN	BTO	1.1.f. Expand database design to include medical EMR datasets	4/1/2010	6/30/2010
2010-2	SNBHIN	BTO	1.1.g. Develop accounting system for partner match and licensing invoicing	4/1/2010	6/30/2010
2010-2	SNBHIN	BTO	Report: Hardware and Software installation	6/30/2010	6/30/2010
2010-3	NEHII	BTO	Add and Train Three Hundred (300) New Physicians	7/1/2010	9/30/2010
2010-3	NeHII	BTO	Report: Hospital, physician and lab/radiology connections	9/30/2010	9/30/2010
2010-3	SNBHIN	BTO	1.2.a. HIE Portal Development	7/1/2010	9/30/2010
2010-3	SNBHIN	BTO	Report: Portal Development	9/30/2010	9/30/2010
2010-3	SNBHIN	BTO	1.2.b. Interface with NeHII, Magellan, BH providers & CDR	7/1/2010	7/30/2010
2010-3	SNBHIN	BTO	Report: Interface development	7/30/2010	7/30/2010
2010-3	SNBHIN	BTO	1.2.c. Involve Providers in Wait List/Referral System Design	7/1/2010	9/30/2010
2010-3	SNBHIN	BTO	1.2.d. Assure data center design & integration of HIE and Magellan interfaces	7/1/2010	9/30/2010
2010-3	SNBHIN	BTO	1.2.e. Implement partner contributions system	7/1/2010	9/30/2010
2010-4	NEHII	BTO	Add and Train Three Hundred (300) New Physicians	10/1/2010	12/31/2010
2010-4	NEHII	BTO	Report: Implementation of physician connections	10/1/2010	12/31/2010
2010-4	SNBHIN	BTO	1.3.a. Set Up Pilot Project Test Database	10/1/2010	10/31/2010
2010-4	SNBHIN	BTO	1.3.b. Begin Intensive Training of Pilot Project Users	10/1/2010	12/31/2010
2010-4	SNBHIN	BTO	1.4.c. All Providers Define Standard Reports	10/1/2010	12/31/2010
2010-4	SNBHIN	BTO	1.3.d. Data Center operations testing	10/1/2010	12/31/2010
2010-4	SNBHIN	BTO	Report: 1.3.d. Data Center operations testing	10/1/2010	12/31/2010
2011-1	NeHII	BTO	Implement One (1) New Hospital Gateways	1/1/2011	3/31/2011

Risk: Medicaid won't have plan done until Nov. 15, 2010

2011-1	NEHII	BTO	Add and Train 100 New Physicians	1/1/2011	3/31/2011
2011-1	NEHII	BTO	Report: Implementation of hospitals, physicians, lab/radiology	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.a. Go Live with Parallel Data Entry for Pilot Project Providers	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	Report: 1.4.a. Go Live with Parallel Data Entry for Pilot Project Providers	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.b. Standard Reports Issued Monthly by Pilot Project Providers	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.3.c. Data Center operations continue	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.d. Data Center Contract Renewal	2/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.e. Orient Remaining Provider Groups (9 providers)	3/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.f. Execute User and Network Participant Agreements for Remaining Providers	3/1/2011	12/30/2011
2011-1	SNBHIN	BTO	1.4.g. Install Hardware and Software for Remaining Providers	3/1/2011	6/30/2011
2011-2	SNBHIN	BTO	2.2.a. Standard Reports Issued Monthly for Pilot Project Providers	4/1/2011	6/30/2011
2011-2	SNBHIN	BTO	2.2.b. Data Center Operations Continue	4/1/2011	6/30/2011
2011-2	SNBHIN	BTO	2.1.c. Review Operations and Refine System	4/1/2011	6/30/2011
2011-3	NeHII	BTO	Implement One (1) New Hospital Gateways	7/1/2011	9/30/2011
2011-3	NEHII	BTO	Add and Train 100 New Physicians	7/1/2011	9/30/2011
2011-3	SNBHIN	BTO	2.2.a. Standard Reports Issued Monthly for Pilot Project Providers	7/1/2011	9/30/2011
2011-3	SNBHIN	BTO	2.2.b. Data Center Operations Continue	7/1/2011	9/30/2011
2011-3	SNBHIN	BTO	2.2.c. Discontinue Parallel Data Entry for Pilot Project Providers	9/30/2011	9/30/2011
2011-3	SNBHIN	BTO	Report: 2.2.c. Discontinue Parallel Data Entry for Pilot Project Providers	6/30/2011	9/30/2011
2011-4	NeHII	BTO	Implement One (1) New Hospital Gateways	10/1/2011	12/31/2011
2011-4	NEHII	BTO	Report: Implementation of hospitals, physicians, lab/radiology	12/31/2011	12/31/2011
2011-4	SNBHIN	BTO	2.3.a. Set Up Remaining Providers' Test Database	10/1/2011	12/31/2011
2011-4	SNBHIN	BTO	2.3.b. Begin Intensive Training of Users	10/1/2011	12/31/2011
2011-4	SNBHIN	BTO	2.3.c. Data Center Operations Testing	11/1/2011	11/30/2011
2011-4	SNBHIN	BTO	Report: 2.3.c. Data Center Operations Testing	11/30/2011	11/30/2011
2012-1	SNBHIN	BTO	2.4.a. Go Live with Parallel Data Entry for Remaining Providers	1/1/2012	3/31/2012
2012-1	SNBHIN	BTO	Report: Go Live with Parallel Data Entry for Remaining Providers	3/31/2012	3/31/2012
2012-1	SNBHIN	BTO	2.4.b. Standard Reports Issued Monthly for All Providers	1/1/2012	3/31/2012
2012-1	SNBHIN	BTO	2.4.c. Data Center Operations Continue	1/1/2012	3/31/2012
2012-1	SNBHIN	BTO	2.4.d. Data Center Contract Renewal	3/1/2012	3/31/2012

Appendix A eHealth Council Members

- **The State of Nebraska/Federal Government**
 - **Steve Henderson**, Office of the CIO (term ends Dec. 2011)
 - **Senator Annette Dubas**, Nebraska Legislature (term ends Dec. 2010, renew every 2 years)
 - **Steve Urosevich** (term ends Dec. 2009)
 - **Congressman Jeff Fortenberry**, represented by Marie Woodhead (term ends Dec. 2010, renew every 2 years)

- **Health Care Providers**
 - **Lianne Stevens**, The Nebraska Medical Center (term ends Dec. 2010)
 - **Dr. Delane Wycoff**, Pathology Services, PC (term ends Dec. 2011)
 - **Dr. Harris A. Frankel** (alternate)
 - **Joni Cover**, Nebraska Pharmacists Association (term ends Dec. 2012)
 - **September Stone**, Nebraska Health Care Association (term ends Dec. 2010)
 - **John Roberts**, Nebraska Rural Health Association (term ends Dec. 2011)

- **eHealth Initiatives**
 - **Donna Hammack**, Nebraska Statewide Telehealth Network and St. Elizabeth Foundation (term ends Dec. 2012)
 - **Ken Lawonn**, NeHII and Alegend Health (term ends Dec. 2010)
 - **Harold Krueger**, Western Nebraska Health Information Exchange and Chadron Community Hospital (term ends Dec. 2011)
 - **Wende Baker**, Electronic Behavioral Health Information Network and Region V Systems (term ends Dec. 2012)
 - **Joyce Beck**, Thayer County Health Services (term ends Dec. 2011)

- **Public Health**
 - **Sue Medinger**, Department of Health and Human Services, Division of Public Health (term ends Dec. 2010)
 - **Jeff Kuhr**, Three Rivers Public Health Department, Fremont (term ends Dec. 2011)
 - **Rita Parris**, Public Health Association of Nebraska, alternate
 - **Kay Oestmann**, Southeast District Health Department (term ends Dec. 2012)
 - **Dr. Keith Mueller**, UNMC College of Public Health (term ends Dec. 2010)
 - **Joel Dougherty**, OneWorld Community Health Centers (term ends Dec. 2011)

- **Payers and Employers**
 - **Susan Courtney**, Blue Cross Blue Shield (term ends Dec. 2012)
 - **Vivianne Chaumont**, Department of Health And Human Services, Division of Medicaid and Long Term Care (term ends Dec. 2010)

- **Consumers**
 - **Nancy Shank**, Public Policy Center (term ends Dec. 2011)
 - **Alice Henneman**, University of Nebraska-Lincoln Extension in Lancaster County (term ends Dec. 2012))

- **Resource Providers, Experts, and Others**
 - **Kimberly Galt**, Creighton University School of Pharmacy and Health Professions (term ends Dec. 2012).
 - **CIMRO of Nebraska/Wide River Technology Center** (term ends Dec. 2010)

NeHII Board of Directors

NeHII Elected Directors

- **President:** Harris Frankel, MD, Goldner, Cooper, Cotton, Sundell, Frankel, Franco Neurologists, Omaha, NE
- **Vice President:** Ken Lawonn, Alegent Health System, Omaha, NE
- **Secretary:** George Sullivan, Mary Lanning Memorial Hospital, Hastings, NE
- **Treasurer:** Steve Martin, Blue Cross and Blue Shield of Nebraska
- Delane Wycoff, MD - Pathology Services PC, North Platte, NE
- Michael Westcott, MD - Alegent Health System, Omaha, NE
- Lisa Bewley - Regional West Medical Center, Scottsbluff, NE
- Roger Hertz - Methodist Health System, Omaha, NE
- Bill Dinsmoor - The Nebraska Medical Center, Omaha, NE
- Ken Foster – BryanLGH Health System, Lincoln, NE
- Gary Perkins – Children’s Hospital & Medical Center, Omaha, NE
- Vivianne Chaumont, Director of Medicaid and Long-Term Care, Lincoln, NE

NeHII Appointed Directors

- Lt. Gov. Rick Sheehy
- Kevin Conway - Professional Organizations, Nebraska Hospital Association, Lincoln, NE
- Deb Bass - Executive Director, Bass & Associates Inc., Omaha, NE
- Sandy Johnson, Consumer Representative

eBHIN Board Members

- Ken Foster, BryanLGH Medical Center & Heartland Health Alliance
- C.J. Johnson, Region V Systems
- Dean Settle, Community Mental Health Center of Lancaster County
- Shannon Engler, BryanLGH Medical Center Mental Health Services
- Jon Day, Blue Valley Behavioral Health
- Julie Fisher-Erickson, Lutheran Family Services
- Joleen TenHulzen Huneke, Southeast Rural Physicians Alliance
- Jonah Deppe, National Alliance for the Mentally Ill

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Appendix B eBHIN Technical Infrastructure

Technical Solutions and Architecture Proposed and How It will Accommodate Statewide HIE for Providers, Public Health, and Consumers

Enterprise Architecture

The eBHIN HIE will include software with enterprise architecture for the service area represented by Region V systems in southeast Nebraska and the behavioral healthcare providers contracting with the Region. The system is designed utilizing a core data set that is already in use by publicly funded behavioral health providers across the state. This will make it possible to offer these services to the other behavioral health Regions and the providers they serve as time and resources allow. Enterprise architecture is a software solution that operates on a single database supporting the unique requirements of multiple organizations, multiple practices, and multiple locations. By implementing enterprise solutions, behavioral healthcare providers will cut costs, eliminate mistakes, improve consumer care, make smarter decisions, meet regularity requirements, and reduce time spent on clinical and administrative processes. Specifically the system will be able to:

- Maintain continuity of data across providers and the Regions
- Reduce redundant data entry of ASO required data
- Improve consumer safety through clinical data sharing
- Gain the ability to report at any level (provider, Region, system, state)
- Decrease cost of deploying and maintaining software across Regions
- Accomplish all of the above while complying with HIPAA

Implementation Organization

A project team, consisting of staff from Region 5 providers, eBHIN and Nextgen, is being formed for the implementation. The framework for the project will be outlined in a series of documents developed by these teams describing the Scope, Goals, Objectives and detailed timeline and responsibilities of the project. Staff will be assigned to groups. Each group will have specific responsibilities as characterized by their title, i.e., CDR development, Portal development, Reports development, Security, MPI, Training, Interfaces. These groups will function under the guidance of the Technology and Standards Committee working within the oversight of the eBHIN Board of Directors.

Single Database/Central Data Repository (CDR)

A single database architecture built on an enterprise foundation will provide connectivity, scalability, reliability, flexibility, efficiency, and cost-effectiveness-attributes that are imperative for a successful behavioral healthcare HIE system. In contrast to a multiple database configuration, a software solution with enterprise architecture allows all participants to operate on a single database which significantly reduces IT costs. In addition, because all data is stored

on a single database, this type of configuration can facilitate centralized processing, roll-up reporting analysis, and clinical data sharing between different providers.

The CDR proposed for this HIE system will include a centralized data base with the functional capability of maintaining wait list/referral management, easy access to centralized consumer data, cost efficiencies, ePrescribing and lab results as described below:

1. *Wait lists and referral management.* Providers will be able to enter and track consumer referrals in real time and consumer data will be available via secure online access from anywhere, whether providers are onsite or at a remote location. Wait lists will be shared across providers and standardized. Ad hoc reporting and on line queries of referrals and wait lists will be possible.
2. *Easy access to centralized consumer data.* The proposed HIE system will be able to collect and transmit data submitted to the state's behavioral healthcare ASO (Magellan) database through automated upload. Providers will have easy access to a consumer's emergency contact through the centralized database. Federal reporting will be simplified with interfaces between disparate information systems and access to aggregate data needed for federal block grant reporting.
3. *Cost efficiencies* will be increased over time when the CDR is fully operational and utilized.
4. *Lab results and ePrescribing* will be available via the CDR with the capability of transmittal to multiple providers. A standard data set will also be transmittable via the HIE.

The CDR will offer secure web-enabled retrieval of consumer information including defined demographic, treatment, and medication information entered into a database shared by all providers through a single point of data entry. The CDR will have the functionality to generate lists of consumers by specific conditions, and facilitate the exchange of key clinical information among providers including problems, medications, allergies, test results, etc. A single database with a single Master Patient Index (MPI), advanced security to protect provider/consumer data, and preference settings to allow providers to operate independently will result in the following benefits.

- Lower IT overhead with single database management and single backup
- Reduced costs for interfaces connected at the enterprise for multiple providers
- Fewer interfaces means less complicated interface testing during upgrades
- Single upgrade as there is only one database and one set of files that require upgrading
- A single set of master files, libraries, and codes tables to set-up and maintain
- User security for providers can be centrally configured and managed
- Increased consistency of data maintenance and set-up for security, payers, providers, etc.
- Faster initial implementation and decreased time required to bring new providers live
- Supports structure of multiple locations, multiple providers, and multiple enterprises
- Users can access consumer demographic data from different providers to reduce double entry

- Allows multiple MPIs to be defined to control access to data
- Secure Consumer Lookup allows HIPAA-compliant MPI searches for consumers from other providers
- Associations can be assigned to providers to further restrict access to consumer data
- Preference settings can be configured to allow providers to operate independently
- Various different processes can be performed for all providers, such as claims processing
- Supports a single consumer chart across the enterprise while securing provider financial information
- Performs anonymous drug interaction checking across the enterprise
- Streamlines referrals through clinical data sharing between providers in an enterprise
- Supports roll-up reporting at any level of the organization for improved data analysis
- Enables practice management alerts to prompt users across all practices in the enterprise

CDR Implementation

Implementation will begin with a pilot consisting of three providers. The providers participating in this pilot include Blue Valley Behavioral Health, Community Mental Health Center of Lancaster County, and ByanLGH Medical Center Behavioral Health Services. The pilot functionality in the CDR will be based on the current Community Health Solutions (CHS) database purchased from Nextgen. The CHS will be tailored to include all data elements contained in the service authorization database utilized by the ASO, Magellan, and all publicly funded behavioral healthcare providers in Nebraska. Additional data elements of value to our providers for reporting or sharing, such as emergency notifications information, will also be included.

The CDR will be accessed via a web portal from each provider location. The existing Nextgen CHS portal will be modified, using Nextgen template-building tools, to reflect the additions and changes to the CHS. Queries and reports will be built using Nextgen-provided query and reporting tools. Initially pilot staff will be trained to enter and retrieve data exclusively through the portal. In later phases, the CDR will be integrated with the EPM and EHR.

The CDR will operate on eBHIN equipment in a web-enabled environment located at an existing state-of-the-art data center. This data center has all of the physical and virtual security protections, server and network redundancy, and secure backup and restore capabilities required to assure system security and 24/7 service continuity.

Master Patient Index

The MPI contains demographic data for consumers (who have a chart), guarantors (who have an account) and people who do not have a chart or account (such as a person who has a relationship with a consumer.) This aspect is particularly important for consumers of behavioral healthcare services, especially in emergency situations. When a new consumer comes to a provider, a user can perform a lookup to see if the record already exists in the MPI.

If so, the user can access the existing record from within the enterprise and eliminate duplicate data entry. The system will support multiple MPIs on a single database. MPIs can be set-up at the system level, the enterprise level, and the provider level. This will be useful for separating the providers for reporting and tracking purposes. The benefits of the MPI include the capability to perform the following:

- Allow multiple entities within the system to share consumer demographic data
- Streamline referrals by reducing redundant data entry during registration
- Support exclusive ability to restrict access to consumer data through multiple MPIs
- Single system-level MPI allows sharing of consumer data across all Regions
- Enterprise-level MPIs allow sharing of consumer data across providers in the Region
- Practice-level MPIs allows sharing of consumer data only within the provider agency

MPI Implementation

The MPI will initially be created at the system (statewide), enterprise (region), and provider levels. It will be available at go-live to the three providers in the pilot. Initially the three levels will all contain the same patient data. As providers and regions are added, the content at each level may diverge. The MPI will include patient ID's enabling interoperability with NeHIE and NHIN. The capability exists to pre-populate the MPI with existing patient data prior to the pilot go-live. Analysis will be done to determine the value of this option.

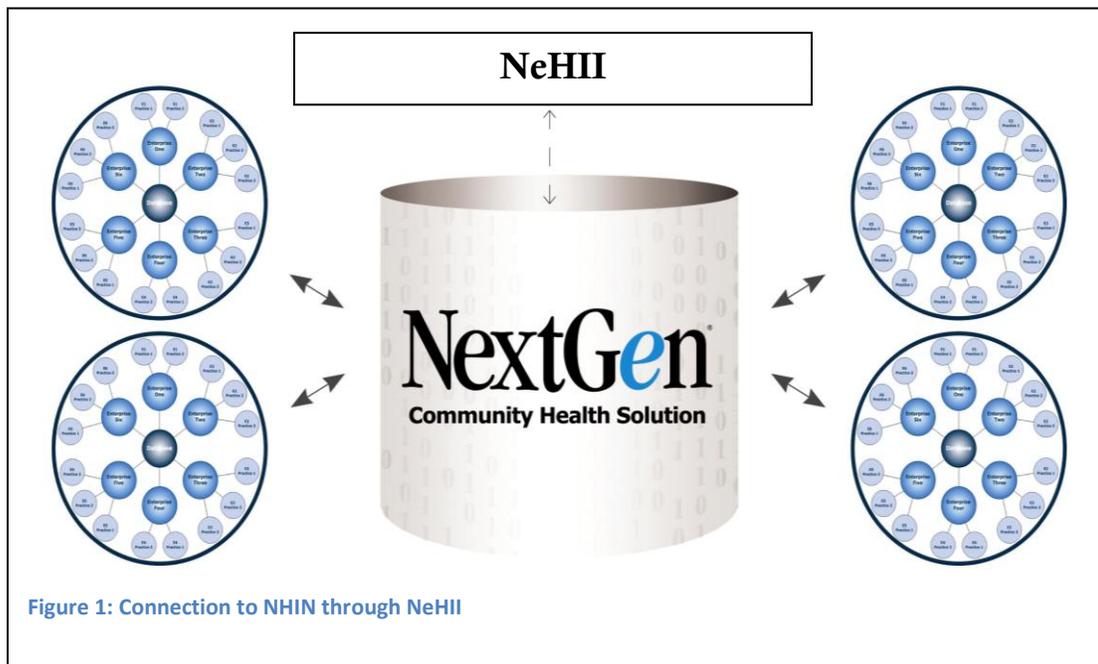
Secure Consumer Lookup

The system will allow further definition of access to consumer records using Associations, which work within the framework of MPIs. Associations were developed to assist organizations with HIPAA mandates and allow the sharing of consumer records between specific groups of providers. When providers are assigned to an Association, users from the provider agencies can use the generic consumer lookup to access existing consumer records from all providers in the Association. Only consumer records that were created in the Association will be displayed. The Secure Consumer Lookup feature allows users to perform consumer searches using secure fields for the consumer's date of birth and/or last four digits of the social security number. As a result, Secure Consumer Lookup can help enhance consumer authentication as well as further refine consumer search results. The Secure Consumer Lookup:

- Enhances consumer lookup validation and authentication process
- Allows consumer searches beyond the restrictions of Associations
- User groups can be given authorization to perform Secure Patient Lookup or not
- Reduces redundant data entry even in complex organizations using Associations

Global Security and Privacy Management The global security and privacy management component of eBHIN HIE will be HIPAA compliant with security and privacy features and will incorporate authorization for release of information, emergency override procedures, and limits access to records. To minimize access to security features, security administration will be centralized at either the provider or eBHIN level.

Ultimately, eBHIN, through its interface with the NeHII HIE, will, with patient consent, be able to provide a behavioral health care record to NeHII, but, will also be able to import medical records into the CDR, thereby making medical treatment records available to behavioral health providers.



Technical Solutions for Meaningful Use

The eBHIN HIE system anticipates providing meaningful use as outlined in the following table:

Stage 1 Objectives	Stage 1 Measures	Status/Expected Availability	Notes
Generate and transmit permissible prescriptions electronically (eRx)	At least 75% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology	Available through eBHIN provider EHR	EHR includes an embedded link in the system workflow for e-prescribing.
Send reminders to patients per patient preference for preventive/ follow up care	Reminder sent to at least 50% of all unique patients seen by the EP that are age 50 or over	Available through the eBHIN EPM scheduling module	Will not be included in the CDR
Check insurance eligibility electronically from public and private payers	Insurance eligibility checked electronically for at least 80% of all unique patients seen by the EP or admitted to the eligible hospital	Available through eBHIN EPM billing module	Eligibility data will not be included in the data shared through the CDR
Submit claims electronically to public and private payers.	At least 80% of all claims filed electronically by the EP or the eligible hospital	Available through eBHIN EPM billing module	Claims data will not be included in the data shared through the CDR
Provide patients with an electronic copy of their health information (including diagnostic test results, problem list, medication lists, allergies),	At least 80% of all patients who request an electronic copy of their health information are provided it within 48 hours	Made available through access to a patient portal into to the eBHIN CDR. Requirements would need to be more	A Patient Portal would be developed with processes and mechanisms to manage security.

upon request		clearly defined as they relate to Behavioral Health	
Provide patients with timely electronic access to their health information (including lab results, problem list, medication lists, allergies) within 96 hours of the information being available to the EP	At least 10% of all unique patients seen by the EP are provided timely electronic access to their health information	Could be made available through access to a patient portal into to the eBHIN CDR. Requirements would need to be more clearly defined as they relate to Behavioral Health	A Patient Portal would be developed with processes and mechanisms to manage security.
Provide clinical summaries for patients for each office visit	Clinical summaries are provided for at least 80% of all office visits	Available through eBHIN agency EHR	Clinical data will be shared across agencies through the CDR. Cross-agency summaries may also be made available to patients, as appropriate.
Capability to exchange key clinical information (for example, problem list, medication list, allergies, diagnostic test results), among providers of care and patient authorized entities electronically	Performed at least one test of certified EHR technology's capacity to electronically exchange key clinical information	Available through the CDR to all providers participating in the eBHIN network. Available as a pilot by Oct. 1 2010,	The shared clinical dataset has been defined, using the Magellan system database as a baseline. Additional elements have been added to complete the information needed to provide care.
Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice	Performed at least one test of certified EHR technology's capacity to provide electronic syndromic surveillance data to public health agencies (unless none of the public health agencies to which an EP or eligible hospital submits such information have the capacity to receive the information electronically)	Data elements can be added to the CDR as needed to capture and provide this information.	The infrastructure will be in place to submit data electronically as needs are defined.

Plans for the Protection of Health Data Reflecting Business and Clinical Requirements

Physical security of the data will be ensured through a combination of Policies and Procedures, and physical restrictions to the data center and remote locations. Data will be secured in a controlled environment, protected from unauthorized access. Daily backups will be secured in an off-site vault to ensure survivability in the event of system failure or disaster. Policies and procedures will be in place to manage compliance with HIPPA standards at both the data center and the remote locations. All access will require two levels of authentication. Passwords will be “complex” and set to be changed periodically by the user.

Data will be encrypted using an SSL connection between the user and the web server. In addition, identity will be masked through the use of a proxy server. This combination will make the data meaningless to an outsider and also protect the identity of eBHIN as the owner of the data.

SSL ensures that whatever you transfer between a browser and web server is secure. Even if someone were to intercept it, they would see only meaningless code since it's encrypted. A proxy server is a mediating server between a browser and web server. It will be used to disguise the IP addresses and other information related to eBHIN.

For wireless connections, routers will be secured using two level authentication. Data will be encrypted. The wireless network will be monitored for intruders. Downloads to devices will be encrypted and policies set to require periodic changes to passwords.

In addition, data traffic will be scanned for such things as viruses, spyware, adware, malware, and Trojans using a commercially available suite of protection products such as MacAfee.

If the System Plans to Exchange with Federal Health Care Providers, How will the Architecture Align with NHIN Core Services and Specifications?

eBHIN intends to participate in state level HIE, regional and national HIE's via an interface with the NeHII HIE system. As work continues by government and industry to develop a national standard for health information exchange, eBHIN will monitor those efforts and adopt standards as they become available. Toward that end, eBHIN has partnered with a nationally recognized software provider, NextGen Healthcare Information Systems, with experience in deployment of HIE's, and also a CCHIT compliant EHR. To make adoption of future standards as efficient as possible, eBHIN intends to utilize only existing industry-standard programming languages, tools, database models and protocols.

Describe how this Project will be Consistent with Standards and Certification Requirements

As noted above, eBHIN will continue to monitor standards development with the goal of complying with those standards as quickly as possible. As to existing standards, the EMR will be CCHIT compliant, any interfaces will be HL7, Privacy and Security will conform to HIPAA guidelines, and data standards will include ICD-9, CPT-4, LOINC-1 and NDC.

Business and Technical Operations

Will this Project Leverage Shared Services and Repositories Including those Listed Below?

Security Service

Security administration for the centralized data repository will also be centralized. Consumers must "op-in" to any sharing of data. User permissions will be tiered to match the "need to know", with providers having the highest level of security.

Patient Locator Service

Consumers will be located through a Master Patient Index (MPI). The Index will be populated and refreshed during intake, either through an interface from the EHR or, for those providers not using an EHR, through direct entry using a web application. For purposes of communication with other HIE's, the MPI will contain extensions to enable the mapping of consumer identifiers between systems. If a national standard identifier is established, it will be added as an extension and set as the default identifier.

Data/Document Locator Service

eBHIN is using a hybrid Federated model, also known as a Blended model. The Central Data Repository will contain data which is common and relevant to all behavioral healthcare providers in the RHIO. The Document Locator Service will be used to share other data and documents among providers for those consumers who haven't excluded themselves. It is an index of the location of documentation held by participating organizations.

Terminology Service

According to the Open Healthcare Forum (OHF), "the challenge of defining a predictable set of vocabulary APIs has been addressed by HL7's Common Terminology Services (CTS) standard. The CTS defines the minimum set of functions required for terminology interoperability within the scope of HL7's messaging and vocabulary browsing requirements." We support and encourage the development of a common HL7 model. We believe it is a major foundation piece for achieving full interoperability. One option is a meta-model as described by OHF, "to which many terminology models can be mapped. The common model maintains the semantics of each individual terminology resource mapped into it, while providing a common denominator of understanding for all terminology users." Since we will rely on our software provider to develop the API's for use of these models, the extent to which these models are implemented within the eBHIN RHIO depends on them. Our software vendor is one of the most progressive and well regarded vendors in the industry as evidenced by national polls.

Appendix C

Document History

April 2010—Updates were made based on feedback from the Community Council and public comments.

- A section on supporting quality improvement was added to the section on Nebraska’s Approach to Establishing Statewide HIE (page 16).
- The executive summary was modified to clarify that the operational plan’s focus is the implementation of the State HIE Cooperative Agreement program. Sue Medinger asked about information on NeHII’s sustainability.
- Modifications were made to the Sustainability section (pp. 63-69) including changing the headings in the second part of the table from “Server Type” to “Non-Hospital Participants.” Members also recommended that information on Blue Cross Blue Shield of Nebraska’s program to subsidize the annual fee for critical access hospitals be reworded.
- Version numbers were included in the footers of the plans.
- The budget was updated (pp. 76-78).

July 2010—The following information was added in response to comments from the Office of the National Coordinator.

Issue	Location
Please include in the project plan when specific HIE services would become available. We did not find them with the exceptions of CPOE, disease registry and an “advanced interoperability hub” that were all scheduled for completion by 6/31/2010.	Operational Plan—Technical Assistance section under Technical Deployment (pp. 42-43).
The Nebraska plan mentioned several different entities in which it would like to coordinate with including federal programs and federally funded state programs, but the plan did not specify how the coordination would take place. Please describe the processes in which coordination between programs would take place.	Operational Plan—Coordination with Related Programs (pp. 20-22) is new material. The rest of the section also addresses concerns.
Also, please include a discussion about how the Medicaid 90/10 match would be leveraged for the state HIE program.	Operational Plan— Coordination with Related Programs under Medicaid (p. 28)
Governance	
Please describe the mechanism to ensure NeHII and the other HIOs performed as required. There was a discussion of a memo of understanding but it	Operational Plan—Governance section under Internal Controls to Ensure Performance (p. 70) is new material. The list of responsibilities on pp. 71 -

was not in place and we didn't see a description of its scope. Also, if there is an accountability relationship between NeHII and the regional HIOs, please describe it.	74 address scope.
Finance	
Please include in your plan a description of the financial policies, procedures and controls in place to ensure funding is used and handled appropriately.	Operational Plan—Finance section Under Financial Accountability (pp. 82-89).
Technical Infrastructure	
The plan requires additional details describing the state infrastructure. The current plan offers very few details other than vendor products and some high level information about the standards. For example, the state plan may name a general standard, such as HL7, but provides limited information on versions, what specific standards cover what functions, little mention of security (VPN), or transport standards. Additionally, the plan explains that NeHII relies on Axolotl's security framework, with tools/functions listed on page 33 but does not tell what standards are being used.	Operational Plan—Technical Architecture section under Standards and Certification (pp. 50-52).
The state plan should also include the process to keep the state standards current.	Operational Plan—Technical Architecture section under Standards and Certification (pp. 50-52).
Business and Technical Operations	
Please update the description of the state's project management approach including project monitoring, problem escalation and general oversight.	Operational Plan—Business and Technical Operations section under Project Management (p. 56).
Please update the Operational Plan to include a description of the process for standard operating procedure development and implementation.	Operational Plan— Business and Technical Operations section under Standard Operating Procedures for HIE (p. 57).
A project plan/schedule is enclosed which details project tasks and subtasks and indicates timelines and assigned responsibilities.	Not Addressed. This was determined to be good comment.
Legal/Policy	
<ul style="list-style-type: none"> Please describe the state's Privacy and Security Framework or the process in which to develop the framework. 	Operational Plan—Privacy and Security section under Privacy and Security Framework (pp. 60-65).

July 2010—The following information was added in response to comments from the Office of the National Coordinator.

Issue	Location
Please provide additional information on the development of a state-level provider directory.	Operational Plan—Provider Directory section under Business and Technical Operations (pp. 54-55).

General Timeline

Quarter	Entity	Domain	Activity	StartDate	End Date	Status
2009-4	NITC	Gov	Develop Operational Plan Develop Charter	11/1/2009	4/15/2010	
ONC			Award State HIE Cooperative Agreement Planning Funds	3/15/2010	3/14/2014	Complete
ONC			Award Regional Health IT Extension Center	2/12/2010		
		Priv	Privacy			
2010-1	NITC	Priv	Research Privacy and Security Enforcement Framework	12/1/2009	3/31/2010	Complete
2010-1	NITC	Priv	Report: Privacy and Security Enforcement Framework		3/31/2010	Complete
2010-1	NITC	Priv	Attorney General's Office Contacted			
2010-1	NITC	Priv	Meeting with privacy and security officers, HHS, & Attorney General's Office1.31.2010	1/31/2010	1/31/2010	Complete
2010-1	Lt Gov	Priv	Work on removing 180-day limit on authorizations for release of PHI	12/1/2009	5/1/2010	Approved by Governor
2010-1	Lt Gov	Priv	Report: Removing 180-day limit on authorizations for release of PHI	5/1/2010	5/1/2010	
2011-1	NeHII	Priv	Develop trust agreements	1/1/2011	6/30/2011	
2011-2	NeHII	Priv	Report: Develop trust agreements	6/30/2011	6/30/2011	
2010-1	NeHII/WRTEC	Adopt	Adoption--Coordination with Related Initiatives	12/1/2009	12/31/2011	
2010-1	NeHII/WRTEC	Adopt	Extension Center Coordination--Planning and Start Up Phase	12/1/2009	4/30/2010	
2010-1	NeHII/WRTEC	Adopt	Coordination of Activities by staff and advisory boards	12/1/2009	7/30/2010	
2010-1	NeHII/WRTEC	Adopt	Cross training of staff	12/1/2009	7/30/2010	
2010-1	NeHII/WRTEC	Adopt	Alignment of strategic initiatives	12/1/2009	7/30/2010	
2010-2	NeHII/WRTEC	Adopt	Provider Pre Implementation	4/15/2010	12/31/2012	
2010-2	NeHII/WRTEC	Adopt	Cross Referral and cooperative marketing efforts	4/15/2010	12/31/2012	
2010-2	NeHII/WRTEC	Adopt	Provider Implementation--May 2010	5/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Coordinating provider training and implementation activities	5/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Cooperatively identifying and resolving issues	5/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Sharing best practices and lessons learned	5/1/2010	1/1/2014	
2010-2	NeHII/WRTEC	Adopt	Post Provider Implementation	9/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Sharing feedback as part of formative evaluation	9/1/2010	12/31/2014	
2010-2	NeHII/WRTEC	Adopt	Sharing success stories of successful implementation resulting in MU	9/1/2010	12/31/2014	
2010-1	NITC	Gov	Governance	12/1/2009	4/30/2010	
2010-1	NITC	Gov	Finalize agreements between State of Nebraska and NeHII	12/1/2009	4/30/2010	
2010-1	NITC	Gov	Develop agreements with regional and specialty HIEs	12/1/2009	4/30/2010	
2010-1	NITC	Gov	Develop accounting and oversight mechanisms	12/1/2009	4/15/2010	Complete
2010-1	NITC	Gov	Report: Governance	1/31/2009	4/15/2010	Complete
		FIN	Medicaid			
2009-4	Medicaid	FIN	Submission of HIT Planning Advance Planning Document		12/26/2009	Complete
2010-1	Medicaid	FIN	Release RFP for Contractor		3/1/2010	Complete
2010-2	Medicaid	FIN	Contract Award		7/1/2010	
2011-1	Medicaid	FIN	Completion of SMHP		12/31/2010	Dependency with Planning for Connecting to Medicaid

2011-1	Medicaid	FIN	Sharing of SMHP with eHealth Council		12/31/2010
2011-1	Medicaid	FIN	Medicaid incentives start	1/2/2011	12/31/2014
	NeHII	TI	Technical Infrastructure		
2010-1	NeHII	TI	Planning for connecting to Public Health	1/1/2010	3rd quarter 2010
2010-4	NeHII	TI	Planning for connecting to Medicaid	11/15/2010	
2010-1	NeHII	TI	Planning for connecting to regional and specialty HIEs	1/1/2010	
			Business and Technical Operations		
2010-2	NeHII	BTO	Implement Physician Order Entry	6/1/2010	6/31/2010
2010-2	NeHII	BTO	Implement Disease Registry Functionality	6/1/2010	6/31/2010
2010-2	NeHII	BTO	Implement Advanced Interoperability Hub	6/1/2010	6/31/2010
2010-2	NeHII	BTO	Report: Physician Order Entry, Disease Registry, Interoperability hub	6/31/2010	6/31/2010
2010-2	NeHII	BTO	Implement Consumer Education Campaign	6/1/2010	ongoing
2010-2	NEHII	BTO	Implement Five (5) New Hospital Gateways	4/1/2010	6/30/2010
2010-2	NEHII	BTO	Add and Train Seven Hundred (700) New Physicians	4/1/2010	6/30/2010
2010-2	NeHII	BTO	Report: Hospital, physician connections	6/30/2010	6/30/2010
2010-2	SNBHIN	BTO	1.1.a. Purchase Hardware and Software for all providers	4/1/2010	4/30/2010
2010-2	SNBHIN	BTO	1.1.b. Orient Pilot Project Provider Groups (4 of 13 providers)	6/1/2010	6/30/2010
2010-2	SNBHIN	BTO	1.1.c. Execute User and Network Participant Agreements w/Pilot providers	4/1/2010	6/30/2010
2010-2	SNBHIN	BTO	1.1.d. Select Data Center Contractor	4/1/2010	4/30/2010
2010-2	SNBHIN	BTO	1.1.e Install Pilot Project Providers' Hardware and Software	4/1/2010	5/31/2010
2010-2	SNBHIN	BTO	1.1.f. Expand database design to include medical EMR datasets	4/1/2010	6/30/2010
2010-2	SNBHIN	BTO	1.1.g. Develop accounting system for partner match and licensing invoicing	4/1/2010	6/30/2010
2010-2	SNBHIN	BTO	Report: Hardware and Software installation	6/30/2010	6/30/2010
2010-3	NEHII	BTO	Add and Train Three Hundred (300) New Physicians	7/1/2010	9/30/2010
2010-3	NeHII	BTO	Report: Hospital, physician and lab/radiology connections	9/30/2010	9/30/2010
2010-3	SNBHIN	BTO	1.2.a. HIE Portal Development	7/1/2010	9/30/2010
2010-3	SNBHIN	BTO	Report: Portal Development	9/30/2010	9/30/2010
2010-3	SNBHIN	BTO	1.2.b. Interface with NeHII, Magellan, BH providers & CDR	7/1/2010	7/30/2010
2010-3	SNBHIN	BTO	Report: Interface development	7/30/2010	7/30/2010
2010-3	SNBHIN	BTO	1.2.c. Involve Providers in Wait List/Referral System Design	7/1/2010	9/30/2010
2010-3	SNBHIN	BTO	1.2.d. Assure data center design & integration of HIE and Magellan interfaces	7/1/2010	9/30/2010
2010-3	SNBHIN	BTO	1.2.e. Implement partner contributions system	7/1/2010	9/30/2010
2010-4	NEHII	BTO	Add and Train Three Hundred (300) New Physicians	10/1/2010	12/31/2010
2010-4	NEHII	BTO	Report: Implementation of physician connections	10/1/2010	12/31/2010
2010-4	SNBHIN	BTO	1.3.a. Set Up Pilot Project Test Database	10/1/2010	10/31/2010
2010-4	SNBHIN	BTO	1.3.b. Begin Intensive Training of Pilot Project Users	10/1/2010	12/31/2010
2010-4	SNBHIN	BTO	1.4.c. All Providers Define Standard Reports	10/1/2010	12/31/2010
2010-4	SNBHIN	BTO	1.3.d. Data Center operations testing	10/1/2010	12/31/2010
2010-4	SNBHIN	BTO	Report: 1.3.d. Data Center operations testing	10/1/2010	12/31/2010
2011-1	NeHII	BTO	Implement One (1) New Hospital Gateways	1/1/2011	3/31/2011

Risk: Medicaid won't have plan done until Nov. 15, 2010

2011-1	NEHII	BTO	Add and Train 100 New Physicians	1/1/2011	3/31/2011
2011-1	NEHII	BTO	Report: Implementation of hospitals, physicians, lab/radiology	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.a. Go Live with Parallel Data Entry for Pilot Project Providers	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	Report: 1.4.a. Go Live with Parallel Data Entry for Pilot Project Providers	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.b. Standard Reports Issued Monthly by Pilot Project Providers	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.3.c. Data Center operations continue	1/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.d. Data Center Contract Renewal	2/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.e. Orient Remaining Provider Groups (9 providers)	3/1/2011	3/31/2011
2011-1	SNBHIN	BTO	1.4.f. Execute User and Network Participant Agreements for Remaining Providers	3/1/2011	12/30/2011
2011-1	SNBHIN	BTO	1.4.g. Install Hardware and Software for Remaining Providers	3/1/2011	6/30/2011
2011-2	SNBHIN	BTO	2.2.a. Standard Reports Issued Monthly for Pilot Project Providers	4/1/2011	6/30/2011
2011-2	SNBHIN	BTO	2.2.b. Data Center Operations Continue	4/1/2011	6/30/2011
2011-2	SNBHIN	BTO	2.1.c. Review Operations and Refine System	4/1/2011	6/30/2011
2011-3	NeHII	BTO	Implement One (1) New Hospital Gateways	7/1/2011	9/30/2011
2011-3	NEHII	BTO	Add and Train 100 New Physicians	7/1/2011	9/30/2011
2011-3	SNBHIN	BTO	2.2.a. Standard Reports Issued Monthly for Pilot Project Providers	7/1/2011	9/30/2011
2011-3	SNBHIN	BTO	2.2.b. Data Center Operations Continue	7/1/2011	9/30/2011
2011-3	SNBHIN	BTO	2.2.c. Discontinue Parallel Data Entry for Pilot Project Providers	9/30/2011	9/30/2011
2011-3	SNBHIN	BTO	Report: 2.2.c. Discontinue Parallel Data Entry for Pilot Project Providers	6/30/2011	9/30/2011
2011-4	NeHII	BTO	Implement One (1) New Hospital Gateways	10/1/2011	12/31/2011
2011-4	NEHII	BTO	Report: Implementation of hospitals, physicians, lab/radiology	12/31/2011	12/31/2011
2011-4	SNBHIN	BTO	2.3.a. Set Up Remaining Providers' Test Database	10/1/2011	12/31/2011
2011-4	SNBHIN	BTO	2.3.b. Begin Intensive Training of Users	10/1/2011	12/31/2011
2011-4	SNBHIN	BTO	2.3.c. Data Center Operations Testing	11/1/2011	11/30/2011
2011-4	SNBHIN	BTO	Report: 2.3.c. Data Center Operations Testing	11/30/2011	11/30/2011
2012-1	SNBHIN	BTO	2.4.a. Go Live with Parallel Data Entry for Remaining Providers	1/1/2012	3/31/2012
2012-1	SNBHIN	BTO	Report: Go Live with Parallel Data Entry for Remaining Providers	3/31/2012	3/31/2012
2012-1	SNBHIN	BTO	2.4.b. Standard Reports Issued Monthly for All Providers	1/1/2012	3/31/2012
2012-1	SNBHIN	BTO	2.4.c. Data Center Operations Continue	1/1/2012	3/31/2012
2012-1	SNBHIN	BTO	2.4.d. Data Center Contract Renewal	3/1/2012	3/31/2012

Appendix A eHealth Council Members

- **The State of Nebraska/Federal Government**
 - **Steve Henderson**, Office of the CIO (term ends Dec. 2011)
 - **Senator Annette Dubas**, Nebraska Legislature (term ends Dec. 2010, renew every 2 years)
 - **Steve Urosevich** (term ends Dec. 2009)
 - **Congressman Jeff Fortenberry**, represented by Marie Woodhead (term ends Dec. 2010, renew every 2 years)

- **Health Care Providers**
 - **Lianne Stevens**, The Nebraska Medical Center (term ends Dec. 2010)
 - **Dr. Delane Wycoff**, Pathology Services, PC (term ends Dec. 2011)
 - **Dr. Harris A. Frankel** (alternate)
 - **Joni Cover**, Nebraska Pharmacists Association (term ends Dec. 2012)
 - **September Stone**, Nebraska Health Care Association (term ends Dec. 2010)
 - **John Roberts**, Nebraska Rural Health Association (term ends Dec. 2011)

- **eHealth Initiatives**
 - **Donna Hammack**, Nebraska Statewide Telehealth Network and St. Elizabeth Foundation (term ends Dec. 2012)
 - **Ken Lawonn**, NeHII and Alegant Health (term ends Dec. 2010)
 - **Harold Krueger**, Western Nebraska Health Information Exchange and Chadron Community Hospital (term ends Dec. 2011)
 - **Wende Baker**, Electronic Behavioral Health Information Network and Region V Systems (term ends Dec. 2012)
 - **Joyce Beck**, Thayer County Health Services (term ends Dec. 2011)

- **Public Health**
 - **Sue Medinger**, Department of Health and Human Services, Division of Public Health (term ends Dec. 2010)
 - **Jeff Kuhr**, Three Rivers Public Health Department, Fremont (term ends Dec. 2011)
 - **Rita Parris**, Public Health Association of Nebraska, alternate
 - **Kay Oestmann**, Southeast District Health Department (term ends Dec. 2012)
 - **Dr. Keith Mueller**, UNMC College of Public Health (term ends Dec. 2010)
 - **Joel Dougherty**, OneWorld Community Health Centers (term ends Dec. 2011)

- **Payers and Employers**
 - **Susan Courtney**, Blue Cross Blue Shield (term ends Dec. 2012)
 - **Vivianne Chaumont**, Department of Health And Human Services, Division of Medicaid and Long Term Care (term ends Dec. 2010)

- **Consumers**
 - **Nancy Shank**, Public Policy Center (term ends Dec. 2011)
 - **Alice Henneman**, University of Nebraska-Lincoln Extension in Lancaster County (term ends Dec. 2012))

- **Resource Providers, Experts, and Others**
 - **Kimberly Galt**, Creighton University School of Pharmacy and Health Professions (term ends Dec. 2012).
 - **CIMRO of Nebraska/Wide River Technology Center** (term ends Dec. 2010)

NeHII Board of Directors

NeHII Elected Directors

- **President:** Harris Frankel, MD, Goldner, Cooper, Cotton, Sundell, Frankel, Franco Neurologists, Omaha, NE
- **Vice President:** Ken Lawonn, Alegent Health System, Omaha, NE
- **Secretary:** George Sullivan, Mary Lanning Memorial Hospital, Hastings, NE
- **Treasurer:** Steve Martin, Blue Cross and Blue Shield of Nebraska
- Delane Wycoff, MD - Pathology Services PC, North Platte, NE
- Michael Westcott, MD - Alegent Health System, Omaha, NE
- Lisa Bewley - Regional West Medical Center, Scottsbluff, NE
- Roger Hertz - Methodist Health System, Omaha, NE
- Bill Dinsmoor - The Nebraska Medical Center, Omaha, NE
- Ken Foster – BryanLGH Health System, Lincoln, NE
- Gary Perkins – Children’s Hospital & Medical Center, Omaha, NE
- Vivianne Chaumont, Director of Medicaid and Long-Term Care, Lincoln, NE

NeHII Appointed Directors

- Lt. Gov. Rick Sheehy
- Kevin Conway - Professional Organizations, Nebraska Hospital Association, Lincoln, NE
- Deb Bass - Executive Director, Bass & Associates Inc., Omaha, NE
- Sandy Johnson, Consumer Representative

eBHIN Board Members

- Ken Foster, BryanLGH Medical Center & Heartland Health Alliance
- C.J. Johnson, Region V Systems
- Dean Settle, Community Mental Health Center of Lancaster County
- Shannon Engler, BryanLGH Medical Center Mental Health Services
- Jon Day, Blue Valley Behavioral Health
- Julie Fisher-Erickson, Lutheran Family Services
- Joleen TenHulzen Huneke, Southeast Rural Physicians Alliance
- Jonah Deppe, National Alliance for the Mentally Ill

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Appendix B eBHIN Technical Infrastructure

Technical Solutions and Architecture Proposed and How It will Accommodate Statewide HIE for Providers, Public Health, and Consumers

Enterprise Architecture

The eBHIN HIE will include software with enterprise architecture for the service area represented by Region V systems in southeast Nebraska and the behavioral healthcare providers contracting with the Region. The system is designed utilizing a core data set that is already in use by publicly funded behavioral health providers across the state. This will make it possible to offer these services to the other behavioral health Regions and the providers they serve as time and resources allow. Enterprise architecture is a software solution that operates on a single database supporting the unique requirements of multiple organizations, multiple practices, and multiple locations. By implementing enterprise solutions, behavioral healthcare providers will cut costs, eliminate mistakes, improve consumer care, make smarter decisions, meet regularity requirements, and reduce time spent on clinical and administrative processes. Specifically the system will be able to:

- Maintain continuity of data across providers and the Regions
- Reduce redundant data entry of ASO required data
- Improve consumer safety through clinical data sharing
- Gain the ability to report at any level (provider, Region, system, state)
- Decrease cost of deploying and maintaining software across Regions
- Accomplish all of the above while complying with HIPAA

Implementation Organization

A project team, consisting of staff from Region 5 providers, eBHIN and Nextgen, is being formed for the implementation. The framework for the project will be outlined in a series of documents developed by these teams describing the Scope, Goals, Objectives and detailed timeline and responsibilities of the project. Staff will be assigned to groups. Each group will have specific responsibilities as characterized by their title, i.e., CDR development, Portal development, Reports development, Security, MPI, Training, Interfaces. These groups will function under the guidance of the Technology and Standards Committee working within the oversight of the eBHIN Board of Directors.

Single Database/Central Data Repository (CDR)

A single database architecture built on an enterprise foundation will provide connectivity, scalability, reliability, flexibility, efficiency, and cost-effectiveness-attributes that are imperative for a successful behavioral healthcare HIE system. In contrast to a multiple database configuration, a software solution with enterprise architecture allows all participants to operate on a single database which significantly reduces IT costs. In addition, because all data is stored

on a single database, this type of configuration can facilitate centralized processing, roll-up reporting analysis, and clinical data sharing between different providers.

The CDR proposed for this HIE system will include a centralized data base with the functional capability of maintaining wait list/referral management, easy access to centralized consumer data, cost efficiencies, ePrescribing and lab results as described below:

1. *Wait lists and referral management.* Providers will be able to enter and track consumer referrals in real time and consumer data will be available via secure online access from anywhere, whether providers are onsite or at a remote location. Wait lists will be shared across providers and standardized. Ad hoc reporting and on line queries of referrals and wait lists will be possible.
2. *Easy access to centralized consumer data.* The proposed HIE system will be able to collect and transmit data submitted to the state's behavioral healthcare ASO (Magellan) database through automated upload. Providers will have easy access to a consumer's emergency contact through the centralized database. Federal reporting will be simplified with interfaces between disparate information systems and access to aggregate data needed for federal block grant reporting.
3. *Cost efficiencies* will be increased over time when the CDR is fully operational and utilized.
4. *Lab results and ePrescribing* will be available via the CDR with the capability of transmittal to multiple providers. A standard data set will also be transmittable via the HIE.

The CDR will offer secure web-enabled retrieval of consumer information including defined demographic, treatment, and medication information entered into a database shared by all providers through a single point of data entry. The CDR will have the functionality to generate lists of consumers by specific conditions, and facilitate the exchange of key clinical information among providers including problems, medications, allergies, test results, etc. A single database with a single Master Patient Index (MPI), advanced security to protect provider/consumer data, and preference settings to allow providers to operate independently will result in the following benefits.

- Lower IT overhead with single database management and single backup
- Reduced costs for interfaces connected at the enterprise for multiple providers
- Fewer interfaces means less complicated interface testing during upgrades
- Single upgrade as there is only one database and one set of files that require upgrading
- A single set of master files, libraries, and codes tables to set-up and maintain
- User security for providers can be centrally configured and managed
- Increased consistency of data maintenance and set-up for security, payers, providers, etc.
- Faster initial implementation and decreased time required to bring new providers live
- Supports structure of multiple locations, multiple providers, and multiple enterprises
- Users can access consumer demographic data from different providers to reduce double entry

- Allows multiple MPIs to be defined to control access to data
- Secure Consumer Lookup allows HIPAA-compliant MPI searches for consumers from other providers
- Associations can be assigned to providers to further restrict access to consumer data
- Preference settings can be configured to allow providers to operate independently
- Various different processes can be performed for all providers, such as claims processing
- Supports a single consumer chart across the enterprise while securing provider financial information
- Performs anonymous drug interaction checking across the enterprise
- Streamlines referrals through clinical data sharing between providers in an enterprise
- Supports roll-up reporting at any level of the organization for improved data analysis
- Enables practice management alerts to prompt users across all practices in the enterprise

CDR Implementation

Implementation will begin with a pilot consisting of three providers. The providers participating in this pilot include Blue Valley Behavioral Health, Community Mental Health Center of Lancaster County, and ByanLGH Medical Center Behavioral Health Services. The pilot functionality in the CDR will be based on the current Community Health Solutions (CHS) database purchased from Nextgen. The CHS will be tailored to include all data elements contained in the service authorization database utilized by the ASO, Magellan, and all publicly funded behavioral healthcare providers in Nebraska. Additional data elements of value to our providers for reporting or sharing, such as emergency notifications information, will also be included.

The CDR will be accessed via a web portal from each provider location. The existing Nextgen CHS portal will be modified, using Nextgen template-building tools, to reflect the additions and changes to the CHS. Queries and reports will be built using Nextgen-provided query and reporting tools. Initially pilot staff will be trained to enter and retrieve data exclusively through the portal. In later phases, the CDR will be integrated with the EPM and EHR.

The CDR will operate on eBHIN equipment in a web-enabled environment located at an existing state-of-the-art data center. This data center has all of the physical and virtual security protections, server and network redundancy, and secure backup and restore capabilities required to assure system security and 24/7 service continuity.

Master Patient Index

The MPI contains demographic data for consumers (who have a chart), guarantors (who have an account) and people who do not have a chart or account (such as a person who has a relationship with a consumer.) This aspect is particularly important for consumers of behavioral healthcare services, especially in emergency situations. When a new consumer comes to a provider, a user can perform a lookup to see if the record already exists in the MPI.

If so, the user can access the existing record from within the enterprise and eliminate duplicate data entry. The system will support multiple MPIs on a single database. MPIs can be set-up at the system level, the enterprise level, and the provider level. This will be useful for separating the providers for reporting and tracking purposes. The benefits of the MPI include the capability to perform the following:

- Allow multiple entities within the system to share consumer demographic data
- Streamline referrals by reducing redundant data entry during registration
- Support exclusive ability to restrict access to consumer data through multiple MPIs
- Single system-level MPI allows sharing of consumer data across all Regions
- Enterprise-level MPIs allow sharing of consumer data across providers in the Region
- Practice-level MPIs allows sharing of consumer data only within the provider agency

MPI Implementation

The MPI will initially be created at the system (statewide), enterprise (region), and provider levels. It will be available at go-live to the three providers in the pilot. Initially the three levels will all contain the same patient data. As providers and regions are added, the content at each level may diverge. The MPI will include patient ID's enabling interoperability with NeHIE and NHIN. The capability exists to pre-populate the MPI with existing patient data prior to the pilot go-live. Analysis will be done to determine the value of this option.

Secure Consumer Lookup

The system will allow further definition of access to consumer records using Associations, which work within the framework of MPIs. Associations were developed to assist organizations with HIPAA mandates and allow the sharing of consumer records between specific groups of providers. When providers are assigned to an Association, users from the provider agencies can use the generic consumer lookup to access existing consumer records from all providers in the Association. Only consumer records that were created in the Association will be displayed. The Secure Consumer Lookup feature allows users to perform consumer searches using secure fields for the consumer's date of birth and/or last four digits of the social security number. As a result, Secure Consumer Lookup can help enhance consumer authentication as well as further refine consumer search results. The Secure Consumer Lookup:

- Enhances consumer lookup validation and authentication process
- Allows consumer searches beyond the restrictions of Associations
- User groups can be given authorization to perform Secure Patient Lookup or not
- Reduces redundant data entry even in complex organizations using Associations

Global Security and Privacy Management The global security and privacy management component of eBHIN HIE will be HIPAA compliant with security and privacy features and will incorporate authorization for release of information, emergency override procedures, and limits access to records. To minimize access to security features, security administration will be centralized at either the provider or eBHIN level.

Ultimately, eBHIN, through its interface with the NeHII HIE, will, with patient consent, be able to provide a behavioral health care record to NeHII, but, will also be able to import medical records into the CDR, thereby making medical treatment records available to behavioral health providers.



Figure 1: Connection to NHIN through NeHII

Technical Solutions for Meaningful Use

The eBHIN HIE system anticipates providing meaningful use as outlined in the following table:

Stage 1 Objectives	Stage 1 Measures	Status/Expected Availability	Notes
Generate and transmit permissible prescriptions electronically (eRx)	At least 75% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology	Available through eBHIN provider EHR	EHR includes an embedded link in the system workflow for e-prescribing.
Send reminders to patients per patient preference for preventive/ follow up care	Reminder sent to at least 50% of all unique patients seen by the EP that are age 50 or over	Available through the eBHIN EPM scheduling module	Will not be included in the CDR
Check insurance eligibility electronically from public and private payers	Insurance eligibility checked electronically for at least 80% of all unique patients seen by the EP or admitted to the eligible hospital	Available through eBHIN EPM billing module	Eligibility data will not be included in the data shared through the CDR
Submit claims electronically to public and private payers.	At least 80% of all claims filed electronically by the EP or the eligible hospital	Available through eBHIN EPM billing module	Claims data will not be included in the data shared through the CDR
Provide patients with an electronic copy of their health information (including diagnostic test results, problem list, medication lists, allergies),	At least 80% of all patients who request an electronic copy of their health information are provided it within 48 hours	Made available through access to a patient portal into to the eBHIN CDR. Requirements would need to be more	A Patient Portal would be developed with processes and mechanisms to manage security.

upon request		clearly defined as they relate to Behavioral Health	
Provide patients with timely electronic access to their health information (including lab results, problem list, medication lists, allergies) within 96 hours of the information being available to the EP	At least 10% of all unique patients seen by the EP are provided timely electronic access to their health information	Could be made available through access to a patient portal into to the eBHIN CDR. Requirements would need to be more clearly defined as they relate to Behavioral Health	A Patient Portal would be developed with processes and mechanisms to manage security.
Provide clinical summaries for patients for each office visit	Clinical summaries are provided for at least 80% of all office visits	Available through eBHIN agency EHR	Clinical data will be shared across agencies through the CDR. Cross-agency summaries may also be made available to patients, as appropriate.
Capability to exchange key clinical information (for example, problem list, medication list, allergies, diagnostic test results), among providers of care and patient authorized entities electronically	Performed at least one test of certified EHR technology's capacity to electronically exchange key clinical information	Available through the CDR to all providers participating in the eBHIN network. Available as a pilot by Oct. 1 2010,	The shared clinical dataset has been defined, using the Magellan system database as a baseline. Additional elements have been added to complete the information needed to provide care.
Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice	Performed at least one test of certified EHR technology's capacity to provide electronic syndromic surveillance data to public health agencies (unless none of the public health agencies to which an EP or eligible hospital submits such information have the capacity to receive the information electronically)	Data elements can be added to the CDR as needed to capture and provide this information.	The infrastructure will be in place to submit data electronically as needs are defined.

Plans for the Protection of Health Data Reflecting Business and Clinical Requirements

Physical security of the data will be ensured through a combination of Policies and Procedures, and physical restrictions to the data center and remote locations. Data will be secured in a controlled environment, protected from unauthorized access. Daily backups will be secured in an off-site vault to ensure survivability in the event of system failure or disaster. Policies and procedures will be in place to manage compliance with HIPPA standards at both the data center and the remote locations. All access will require two levels of authentication. Passwords will be “complex” and set to be changed periodically by the user.

Data will be encrypted using an SSL connection between the user and the web server. In addition, identity will be masked through the use of a proxy server. This combination will make the data meaningless to an outsider and also protect the identity of eBHIN as the owner of the data.

SSL ensures that whatever you transfer between a browser and web server is secure. Even if someone were to intercept it, they would see only meaningless code since it's encrypted. A proxy server is a mediating server between a browser and web server. It will be used to disguise the IP addresses and other information related to eBHIN.

For wireless connections, routers will be secured using two level authentication. Data will be encrypted. The wireless network will be monitored for intruders. Downloads to devices will be encrypted and policies set to require periodic changes to passwords.

In addition, data traffic will be scanned for such things as viruses, spyware, adware, malware, and Trojans using a commercially available suite of protection products such as MacAfee.

If the System Plans to Exchange with Federal Health Care Providers, How will the Architecture Align with NHIN Core Services and Specifications?

eBHIN intends to participate in state level HIE, regional and national HIE's via an interface with the NeHII HIE system. As work continues by government and industry to develop a national standard for health information exchange, eBHIN will monitor those efforts and adopt standards as they become available. Toward that end, eBHIN has partnered with a nationally recognized software provider, NextGen Healthcare Information Systems, with experience in deployment of HIE's, and also a CCHIT compliant EHR. To make adoption of future standards as efficient as possible, eBHIN intends to utilize only existing industry-standard programming languages, tools, database models and protocols.

Describe how this Project will be Consistent with Standards and Certification Requirements

As noted above, eBHIN will continue to monitor standards development with the goal of complying with those standards as quickly as possible. As to existing standards, the EMR will be CCHIT compliant, any interfaces will be HL7, Privacy and Security will conform to HIPAA guidelines, and data standards will include ICD-9, CPT-4, LOINC-1 and NDC.

Business and Technical Operations

Will this Project Leverage Shared Services and Repositories Including those Listed Below?

Security Service

Security administration for the centralized data repository will also be centralized. Consumers must "op-in" to any sharing of data. User permissions will be tiered to match the "need to know", with providers having the highest level of security.

Patient Locator Service

Consumers will be located through a Master Patient Index (MPI). The Index will be populated and refreshed during intake, either through an interface from the EHR or, for those providers not using an EHR, through direct entry using a web application. For purposes of communication with other HIE's, the MPI will contain extensions to enable the mapping of consumer identifiers between systems. If a national standard identifier is established, it will be added as an extension and set as the default identifier.

Data/Document Locator Service

eBHIN is using a hybrid Federated model, also known as a Blended model. The Central Data Repository will contain data which is common and relevant to all behavioral healthcare providers in the RHIO. The Document Locator Service will be used to share other data and documents among providers for those consumers who haven't excluded themselves. It is an index of the location of documentation held by participating organizations.

Terminology Service

According to the Open Healthcare Forum (OHF), "the challenge of defining a predictable set of vocabulary APIs has been addressed by HL7's Common Terminology Services (CTS) standard. The CTS defines the minimum set of functions required for terminology interoperability within the scope of HL7's messaging and vocabulary browsing requirements." We support and encourage the development of a common HL7 model. We believe it is a major foundation piece for achieving full interoperability. One option is a meta-model as described by OHF, "to which many terminology models can be mapped. The common model maintains the semantics of each individual terminology resource mapped into it, while providing a common denominator of understanding for all terminology users." Since we will rely on our software provider to develop the API's for use of these models, the extent to which these models are implemented within the eBHIN RHIO depends on them. Our software vendor is one of the most progressive and well regarded vendors in the industry as evidenced by national polls.

Appendix C

Document History

April 2010—Updates were made based on feedback from the Community Council and public comments.

- A section on supporting quality improvement was added to the section on Nebraska’s Approach to Establishing Statewide HIE (page 16).
- The executive summary was modified to clarify that the operational plan’s focus is the implementation of the State HIE Cooperative Agreement program. Sue Medinger asked about information on NeHII’s sustainability.
- Modifications were made to the Sustainability section (pp. 63-69) including changing the headings in the second part of the table from “Server Type” to “Non-Hospital Participants.” Members also recommended that information on Blue Cross Blue Shield of Nebraska’s program to subsidize the annual fee for critical access hospitals be reworded.
- Version numbers were included in the footers of the plans.
- The budget was updated (pp. 76-78).

July 2010—The following information was added in response to comments from the Office of the National Coordinator.

Issue	Location
Please include in the project plan when specific HIE services would become available. We did not find them with the exceptions of CPOE, disease registry and an “advanced interoperability hub” that were all scheduled for completion by 6/31/2010.	Operational Plan—Technical Assistance section under Technical Deployment (pp. 42-43).
The Nebraska plan mentioned several different entities in which it would like to coordinate with including federal programs and federally funded state programs, but the plan did not specify how the coordination would take place. Please describe the processes in which coordination between programs would take place.	Operational Plan—Coordination with Related Programs (pp. 20-22) is new material. The rest of the section also addresses concerns.
Also, please include a discussion about how the Medicaid 90/10 match would be leveraged for the state HIE program.	Operational Plan— Coordination with Related Programs under Medicaid (p. 28)
Governance	
Please describe the mechanism to ensure NeHII and the other HIOs performed as required. There was a discussion of a memo of understanding but it	Operational Plan—Governance section under Internal Controls to Ensure Performance (p. 70) is new material. The list of responsibilities on pp. 71 -

was not in place and we didn't see a description of its scope. Also, if there is an accountability relationship between NeHII and the regional HIOs, please describe it.	74 address scope.
Finance	
Please include in your plan a description of the financial policies, procedures and controls in place to ensure funding is used and handled appropriately.	Operational Plan—Finance section Under Financial Accountability (pp. 82-89).
Technical Infrastructure	
The plan requires additional details describing the state infrastructure. The current plan offers very few details other than vendor products and some high level information about the standards. For example, the state plan may name a general standard, such as HL7, but provides limited information on versions, what specific standards cover what functions, little mention of security (VPN), or transport standards. Additionally, the plan explains that NeHII relies on Axolotl's security framework, with tools/functions listed on page 33 but does not tell what standards are being used.	Operational Plan—Technical Architecture section under Standards and Certification (pp. 50-52).
The state plan should also include the process to keep the state standards current.	Operational Plan—Technical Architecture section under Standards and Certification (pp. 50-52).
Business and Technical Operations	
Please update the description of the state's project management approach including project monitoring, problem escalation and general oversight.	Operational Plan—Business and Technical Operations section under Project Management (p. 56).
Please update the Operational Plan to include a description of the process for standard operating procedure development and implementation.	Operational Plan— Business and Technical Operations section under Standard Operating Procedures for HIE (p. 57).
A project plan/schedule is enclosed which details project tasks and subtasks and indicates timelines and assigned responsibilities.	Not Addressed. This was determined to be good comment.
Legal/Policy	
<ul style="list-style-type: none"> Please describe the state's Privacy and Security Framework or the process in which to develop the framework. 	Operational Plan—Privacy and Security section under Privacy and Security Framework (pp. 60-65).

July 2010—The following information was added in response to comments from the Office of the National Coordinator.

Issue	Location
Please provide additional information on the development of a state-level provider directory.	Operational Plan—Provider Directory section under Business and Technical Operations (pp. 54-55).