Nationwide Health Information Network
Trial Implementations Contract

Evaluation Report

Prepared by

Lovelace Clinic Foundation

New Mexico Health Information Collaborative

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LOVELACE CLINIC FOUNDATION

NM HIC

NHIN Trial Implementation Evaluation Report

Overview and Summary of Key Accomplishments/Findings

Project Description

The purpose of the NHIN Trial Implementation Project is for state, regional and non-geographic health information exchange consortia to become components of the "network of networks", that is the Nationwide Health Information Network (NHIN). These consortia will combine inclusive organizational governance and trust relationships, provider organizations and competing healthcare markets, consumer applications and participating consumers, existing health exchange activities and technical expertise such as that demonstrated in the Nationwide Health Information Network prototype architectures from previous NHIN contracts.

The Lovelace Clinic Foundation (LCF), which leads the New Mexico Health Information Collaborative (NMHIC), has worked with the other Nationwide Health Information Exchange Network participants to cooperatively develop specifications for, and trial implementations of, the NHIN, and test these trial implementations with each other to ensure that they can all work together to implement an interoperable "network of networks" built on top of the Internet. Along with the other NHIN participants, LCF/ NMHIC has participated in the demonstration of "core" services exchange of summary patient records, and also supported the capabilities of two of the seven NHIN use cases, the Emergency Responder EHR Use Case and Laboratory Results EHR Use Case, based on shared NHIN standards and specifications. Trial implementations have demonstrated the represented information exchanges with provider organizations, personal health records, specialty networks and systems, and the other NHIN participants.

Summary of Accomplishments

The base year of the NHIN contract has enabled NMHIC to:

- Complete a comprehensive survey of potential network users so that LCF/NMHIC will be implementing the network services that reflect New Mexico priorities.
- Implement the technology and functionality that complies with national standards for interoperability, privacy, and security in such a manner that NMHIC can appropriately be designated as an NHIE.
- Update the existing NMHIC Network Subscription Agreement (NSA) so that it is consistent with the test Data Use and Reciprocal Support Agreement (DURSA) and therefore supports the NHIN Trial Implementations.
- Use the preparation for the NHIN demonstrations in September and December of 2008 to increase stakeholder participation in NMHIC.
- Demonstrate the ability of NMHIC to share standards-compliant Summary Patient Records, Emergency Responder information, and Laboratory Results with other NHIEs over the NHIN.

- Demonstrate the potential to provide continuity of care by sharing data among private sector health care providers, the Veterans Health Administration, the Military Health Service of DoD, and the Indian Health Service via the NHIN.
- Strengthen the management and technical capabilities of the NMHIC team.
- Complete a comprehensive NMHIC Business Plan, which has enabled NMHIC to:
    - Project expenditures and revenues into the future based on different assumptions (scenarios)
    - Estimate when NMHIC will become financially self-sufficient
    - Provide the foundation for community discussions to develop a single financial construct for all payers in the state to support NMHIC

Expectations Exceeded

LCF/NMHIC believes that we have not only met all contract deliverables, we have exceeded expectations in the following areas by:

- Completing our planning, testing, and implementation on or before the due dates, so that we were able to help other HIEs to meet NHIN contract deliverables by sharing our work with them.
- Taking the initiative to convene several NHIEs to prepare a framework for the NHIN evaluation report which was then shared with ONC and all other NHIEs.
- Volunteering to take a lead role at the September demonstration of the NHIN Trial Implementations.
- Sharing the Interim, Draft, and Final Reports of the NMHIC Business Plan with as many as six other NHIEs, so that they could benefit from the concepts and work efforts already developed within the plan.
- NMHIC was honored to respond to requests from ONC to testify to AHIC in November 2007 and July 2008.
- Completing the August testing event without the need for remediation testing.
- Participating in all of the NHIN workgroups, in active contributor or leadership roles. NMHIC team members on NHIN workgroups were:
    - Leadership and Communications - Maggie Gunter and Jeff Blair
    - DURSA - Randy McDonald and Bob White
    - Core Services Content - Jeff Blair, Co-Chair
    - Testing - Dave Perry
    - Technical and Security - Kent Langsteiner
    - Provider Perspective - Mark Butler and Shirley Fuller
- Becoming the principal driver of NHIN functional requirements among three MedPlus NHIEs due to the strong technical capabilities demonstrated by the NMHIC technical staff.

Summary of Lessons Learned

The NHIN Trial Implementations contract has yielded the following "lessons learned":

- Despite all of the benefits that can be derived from using the latest HIT standards for interoperability and clinical specificity, and even when the NHIE is willing to defray some of the costs of upgrading the HIT standards of health care providers, HIE networks have limited influence on health care providers regarding the level of their HIT standards.
- Although most health care organizations are generally supportive of health information exchange and the NHIN, it is very difficult to get them to provide resources to participate. In order for us to successfully integrate their systems/data we have to carefully propose and plan work efforts to ensure that there is little or no impact on their staff.
- Even though an HIE network assumes some risk by building its own management and technical team with funds from contracts or grants that may only last one to three years, the value of having a capable management and technical team, rather than outside consultants, becomes especially apparent when the need for teamwork, efficiency or flexibility is essential.
- Developing community consensus on HIT privacy policies is extremely difficult. There are almost as many opinions about HIT privacy policies as there are stakeholders, and often these opinions are strongly felt. We believe that greater progress can be made to define HIT privacy policies if we develop a national framework for these policies and require compliance with this framework through certification of HIT systems.
- It is fairly straightforward to describe the potential benefits of HIE networks and the NHIN, but there is little strong and credible quantitative evidence demonstrating these benefits and the associated return on investment which will accrue to community stakeholders. It would be very helpful if ONC would consider providing funding for the quantification of HIE and NHIN benefits at a local level.
- It is not too difficult to get many stakeholders in the community to express support for the concept of an HIE network and the NHIN, but when the stakeholders are asked to contribute financially to support operation of the network, they want to:
    - See a compelling demonstration of its capabilities.
    - Know that their clinicians will have access to patient record information from almost all of the health care providers in the community.
    - Know that all other stakeholders are paying their fair share as well.
- Becoming technically operational is a major achievement, but becoming commercially operational involves several additional steps, for example:
    - Defining and implementing administrative processes and management controls
    - Defining and implementing accounting procedures
    - Obtaining agreements regarding privacy policies
    - Defining and implementing security procedures
    - Development of a marketing /education programs to encourage clinician use

- Establishing customer support and feedback processes

Recommendation

Based on the last point under Lessons Learned above, NMHIC suggests that ONC consider specifying as a deliverable for Option Year One a detailed analysis of the gap between where the NHIEs are at the end of Year One and where they need to be before NHIN production. We believe that the analysis of this gap should include several of the activities noted in the last point under Lessons Learned above, which identifies the difference between technical operations and commercial operations.

Evaluation Criteria and Report Structure

The body of this evaluation report is organized into the sections listed below. Within each section the evaluation criteria and the project's accomplishments will be described in more detail. The final section of the report will include our conclusions and next steps. (Note: A summary of accomplishments, areas where expectations have been exceeded, and lessons learned is provided above in the Overview section.)

A. Governance
B. Technical Infrastructure
C. Stakeholder Engagement
D. Data Sharing
E. Business Plan
F. NMHIC Staffing
G. NHIN Contract Deliverables
H. Conclusions and Next Steps

A. Governance
   1. Criteria: During the base year of the NHIN contract, LCF/NMHIC will use three criteria for evaluating governance:
      i. Continue the oversight and advisory roles of the NMHIC Steering Committee.
      ii. Clarify the relationship and the role of the RHIO Grande Board with respect to LCF/NMHIC.
      iii. Describe how the NHIN contract strengthened community trust in the management and operation of NMHIC.
   2. Accomplishments:
      i. Governance of NMHIC is provided by Lovelace Clinic Foundation and the NMHIC Steering Committee. LCF has provided operations and management of the NMHIC exchange since the inception of the HIE development process in 2004. Advice and oversight has been provided since 2004 by the 33-member NMHIC Steering Committee, which is

comprised of all major health systems and plans as well as employers, professional associations, the University of New Mexico, the NM Department of Health, and numerous other community organizations.

ii. The NMHIC Steering Committee coordinates closely with the newly created RHIO Grande Board of Directors. To reduce duplication of efforts with the NMHIC Steering Committee, the RHIO Grande Board has recently agreed to merge its efforts into the HIE Division of Lovelace Clinic Foundation, which operates NMHIC. High-level coordination with other state HIT initiatives, such as telehealth and promotion of EHR development, is accomplished through LCF/NMHIC participation in the Governor's Telehealth and HIT Commission.

iii. Although some aspects of governance are still evolving, considerable community trust and credibility has been developed over the past four years, especially during the base year of the NHIN contract. The NHIN contract has provided funding and prestige, and has enabled rapid technical deployment, which has further mobilized the enthusiasm of the community in the development of the exchange. The participation of the two major data supplier partners, Presbyterian Healthcare Services and TriCore Reference Laboratories, has been critical in setting the foundation for the participation of the remaining health system partners. Community engagement has been substantial throughout the process and has grown significantly in the base year of the NHIN contract.

B. Technical Infrastructure

1. Network Infrastructure

i. Criteria: The NMHIC network infrastructure will need to be capable of supporting the exchange of the Summary Patient Record with other NHIE networks during the NHIN Trial Implementation demonstration in September 2008, and supporting the demonstration of the NHIN use cases in December 2008. In order to accomplish this, NMHIC will need to build the required technology to comply with the Core Services Specifications set forth by the NHIN Technical and Security Workgroup and Core Services Content Workgroup, and sign the NHIN Test Data Use and Reciprocal Support Agreement (Test DURSA).

ii. Accomplishments: LCF implemented a robust NMHIC network infrastructure, including the EMPI from Initiate, the FirstGateways network from MedPlus, and the NMHIC Clinician Portal. The infrastructure also included a state of the art secure network control center with an uninterruptible power supply and a backup generator in case of sustained power outages. By August 2008, NMHIC completed testing and was able to access data from Edge servers located at Presbyterian Healthcare Services (a network of eight hospitals) and TriCore Reference Laboratories. This network infrastructure complied with NHIN technical specifications and successfully supported the exchange of Summary Patient Records during the NHIN Trial Implementation demonstration on September 23, 2008.

2. Technology – Standards Adoption

i. Criteria: The ultimate goal is to have data suppliers comply with national interoperability standards for all NHIN participants, including our New Mexico site. Better compliance with standards will result in improved outcomes measurement for quality and safety and will improve reimbursement for providers.

ii. Accomplishments: The NMHIC site has been able to demonstrate compliance with national standards through mapping and translation since our data providers were not able to comply with standards within Year One of NHIN. None of our data providers were at HL7 Version 3.0, and none were yet ready to adopt LOINC or SNOWMED, so mapping was necessary. The key barriers for our data suppliers were expense and time and their pressing internal business requirements. Our future efforts in terms of HIE expansion will include providing direction to the local health care community defining national standards and deployment of standards.

3. Technology – Scalability
   i. Criteria: The goal is to achieve technical scalability at both the local and national (NHIN) level.

   ii. Accomplishments: NMHIC has implemented standard interfaces in building its basic infrastructure, so its architecture is designed to be inherently scalable. The same is true of the design of NHIN—a network of networks. Accordingly, there should be no limit on scalability either in New Mexico or nationally.

4. Functionality
   i. Criteria: The key measure of functionality is the degree of operational exchange achieved.

   ii. Accomplishments: We have built a set of core technologies that is scalable enough to support the required level of operational exchange within our community and we expect to be in production by mid-2009. The Web Services NHIN interfaces are based on standard technologies that are consistent with our plans for integrating the HIE network within our stakeholders information systems. It is very important for our users to have the HIE information integrated into their workflow in such a way as to promote adoption and use. Our current focus is to build as many interfaces to data suppliers as possible and to present the information to our users via an internet portal. Next steps will be to integrate our data directly into our end users EHR systems. In parallel, we are working to extend the breadth of interoperability as demonstrated in the NHIN Trial Implementation. Of particular interest in New Mexico is the data from the VA, IHS, and DOD information systems.

C. Stakeholder Engagement

1. Stakeholder Agreements

i. Criteria: The NMHIC Network Subscription Agreement (NSA) used during early 2007 will need to be upgraded to support the NHIN Trial Implementation and signed by the data suppliers that participate in the NHIN Trial Implementation. In addition, LCF will participate in the creation of the Data Use and Reciprocal Support Agreements (DURSA) and will sign both a test and production version of the DURSA.

ii. Accomplishments: The NMHIC Network Subscription Agreement was updated to support the NHIN Trial Implementations. This new NMHIC NSA was signed by Presbyterian Healthcare Services and TriCore Reference Laboratories to support their roles as data suppliers for the September demonstration deliverable of the NHIN contract. We have also signed NSAs with Holy Cross Hospital in Taos, Albuquerque Ambulance, and the New Mexico Department of Health to support the NHIN contract use case demonstrations in December. In addition, LCF staff provided significant support in the creation of the test DURSA (signed by LCF in September) and in the production DURSA (in progress) documents.

2. Stakeholder Participation

i. Criteria: NMHIC needs to engage all key stakeholders as data suppliers, users, contributors, and beneficiaries.

ii. Accomplishments: In response to the award of the NHIN Trial Implementation contract to NMHIC, Presbyterian Healthcare Services and TriCore Reference Laboratories have stepped forward to become the principal data suppliers for the Trial Implementations. NMHIC Edge servers have been installed and operating at PHS and TriCore since June, 2008. During this time our interfaces have processed approximately 2 million HL7 messages from our data providers.

iii. The next section describes in detail the various community stakeholders that we have engaged and worked with during the term of the trial implementation.

3. Other Community Stakeholder Participation

New Mexico Telehealth Alliance. During 2008 the relationship of LCF/NMHIC and the New Mexico Telehealth Alliance has continued to grow. Several members of the Telehealth Alliance are working on a major telehealth contract awarded to them by the FCC during 2007. The FCC contract calls for the telehealth initiative to work in collaboration with local HIE networks and the NHIN. This contract requirement only reinforced the desire of LCF/NMHIC and the Telehealth Alliance to work closely together. The President of LCF, Dr. Maggie Gunter, is a member of the Telehealth Alliance Board of Directors and regularly attends their meetings. Several members of the Telehealth Alliance regularly attend NMHIC Steering Committee meetings as well. The trust between LCF and the Alliance has deepened even to the point where they would openly consider selecting LCF/NMHIC as the lead on their behalf for a major federal telehealth contract. They have also invited us to assist them with the development of their business plan, after seeing the NMHIC Business Plan which LCF/NMHIC developed as a deliverable for the NHIN contract.

CTSC. In early 2007, the University of New Mexico Health Sciences Center invited the Lovelace Clinic Foundation to participate in their proposal in response to the National Institutes of Health's major new initiative titled the Clinical and Translational Science Centers (CTSC). UNM's interest in LCF was based on two types of expertise: (1) the work NMHIC had accomplished in developing and deploying an MPI, since record linkage was an important aspect of the lab result data warehouse the UNM CTSC program was planning to implement, and (2) LCF has extensive experience in translational research and in the use of large data warehouses for research purposes as well to support the feedback of quality improvement/performance data for clinicians. Dr. Maggie Gunter, Dr. Bob White, and later CIO Dave Perry have been actively involved in the development of the Biomedical Informatics section of the CTSC proposal. Dr. Gunter was written in to the proposal as one of the primary community leaders on the project advisory team. The first proposal was submitted in November, 2007, and came very close to being funded during the first review round in the spring of 2008. The LCF/NMHIC team has been working with UNM and other collaborators during the summer and early fall to revise the proposal for resubmission in late October, 2008. This activity significantly expanded UNM's knowledge of and interest in NMHIC, leading to recent productive meetings with UNM officials which show real promise for leading to a network subscription agreement between UNM and LCF/NMHIC in the next several months.

SWTAG. The Southwest Telehealth Access Grid is the name of the network being built to support telehealth activities funded by the FCC contract. Since this contract requires collaboration with local HIE networks and the NHIN, LCF/NMHIC and SWTAG have worked together to identify the technical requirements for network integration. LCF/NMHIC has also been asked to assist SWTAG with the development of their business plan for financial self-sufficiency.

HISPC. Before LCF/ NMHIC was awarded the NHIN Trial Implementation contract, it was awarded the Health Information Security and Privacy Collaborative contract on behalf of the State of New Mexico. During 2008, LCF staff working on both the NHIN and HISPC projects have collaborated to help define and/or clarify privacy and security policies that will be required by the HIE network and the NHIN. Randy McDonald, the Legal Counsel for LCF and a member of the NM HISPC, has also drafted proposed legislation to clarify the privacy and security laws for health information technology and HIE networks within New Mexico. This proposed legislation was considered during a special session called by the Governor in the summer of 2008, but the legislation was not passed.

DOH. During 2008, the New Mexico Department of Health has been especially helpful and supportive of NMHIC. The DOH has participated in all NMHIC Steering Committee meetings and meetings defining the Survey of Potential Network Users, and provided funding for several NMHIC activities. DOH has also expressed interest in working with NMHIC as a customer when NMHIC becomes operational. DOH is interested in network services such as situational awareness, emergency responder reporting, and other mandatory reporting to DOH.

HSD/Medicaid. In July 2008, LCF/NMHIC presented the Interim Report of the NMHIC Business Plan to the Governor's senior health policy advisor, Bruce Perlman; Secretary of Human Services Department/Medicaid, Pam Hyde; the

Secretary of DOH, Alfredo Vigil, MD; the Director of the Health Policy Commission, Liz Stefanics; and other members of the Governor's staff and health departments. During this meeting, LCF/NMHIC reviewed the role of the Nationwide Health Information Network and LCF/NMHIC in improving health care within the state of New Mexico. During the meeting, all of the individuals mentioned above expressed support for LCF/NMHIC and its participation in the NHIN; and the Secretary of HSD/Medicaid, Pam Hyde, said that it would be a good idea if all of the payers, including Medicaid, agreed on a financial construct to support NMHIC.

Governor's Office. Governor Richardson and his Senior Health Policy Advisor have been supportive of the adoption of electronic medical records and the development of a statewide health information exchange network almost from the 2004 inception of HIE development efforts. This has been reflected in the expansion of the scope of the Governor's Telehealth and Health Information Technology Commission, which now has a key interest in health information exchange, and the appointment of Dr. Maggie Gunter as a member of the Commission. Numerous presentations concerning NMHIC and the NHIN project have been made to the Commission, including a demonstration of NMHIC capabilities, which further enhanced NMHIC's credibility in the eyes of the Commission and the Governor's Office. The Governor's Office and the Department of Health have been instrumental in helping LCF obtain appropriations from the NM State Legislature in 2007 and 2008 to support the emerging health information exchange (a valuable supplement to the NHIN contract dollars). The Governor's Office and the Legislature have been very interested in the provider survey LCF conducted as part of its Business Plan development. In October, 2008, the Governor's Office asked DOH to contract with LCF to conduct a series of 10 focus groups in all areas of the state to better understand the barriers and benefits physicians see in EHR adoption and to determine what incentives or other encouragement the state could provide to promote more rapid adoption. In the early focus groups, although the focus has been on EHRs, numerous participants have mentioned how much more valuable EHRs would be if data could be shared across systems, so health information exchange issues appear to be of central interest to lead physician groups in New Mexico.

Payers. In early September, LCF/NMHIC reviewed the NMHIC Business Plan with Dennis Angelis, MD, Chief Medical Officer of Presbyterian Health Plan; Bruce Mann, MD, Chief Medical Officer for Quality Improvement of BCBS of New Mexico; and Tom MacLean, Vice President of Health Care Management of BCBS of New Mexico. PHP is the largest health plan in the state and BCBS NM is the second largest health plan in the state. Both health plans expressed strong support for NMHIC and went on to recognize the value of the NHIN to enable clinicians using NMHIC to access patient records of New Mexicans from within the Veterans Health Administration, the Military Health Service of the DOD, and the Indian Health Service.

Employers. Intel Corporation has a large facility (over 4,000 employees) in New Mexico. In late 2006, Intel approached LCF/NMHIC to explore whether NMHIC might be able to provide patient clinical information for personal health records supported by Dossia. In the summer of 2007, LCF/NMHIC had conversations with Intel to determine whether they were interested in partnering with us for

either of the NHIN consumer empowerment use cases. They were interested and provided a letter of support which was included in the LCF/NMHIC RFP response in July 2008. However, when we checked with them in the fall of 2007, they indicated that the contract for the software development of Dossia was being changed to a new vendor, so they would not be ready to work with us on these use cases during 2008. We will be conferring with them again to determine if they are ready to work with us on the NHIN consumer empowerment use cases for 2009.

D. Data Sharing

i. Criteria: NMHIC will need to demonstrate that it can share Summary Patient Record information with other NHIE networks during the NHIN Trial Implementation demonstration in September 2008.

ii. Accomplishments: In August, 2008, NMHIC participated in significant conformance and peer-to-peer testing activities, demonstrating its ability to connect to the NHIN, identify a patient, locate their records, and share these records among NHIE's. We then participated in the Chicago test event and successfully demonstrated all functions without any required remediation. On September 23, 2008, NMHIC led the Transfer of Care Scenario demonstration in Washington, D.C. to the American Health Information Community (AHIC). In the demonstration, we were able to access a fictitious summary patient record from Albuquerque, New Mexico, and Long Beach, California, highlighting the significant benefits that will result from the NHIN.

E. Business Plan

1. General

i. Criteria: The Business Plan should provide significant value to NMHIC in several ways:

1. The development of the Business Plan should help the NMHIC team to better understand:
    a. which network services have the highest priority within the NMHIC community,
    b. what will be the likely NMHIC expenditures to provide these network services,
    c. what will be the amount and sources of revenue for these network services,
    d. when will NMHIC become financially self-sufficient, and
    e. what will be the effect of different assumptions and scenarios.
2. The financial projections in the Business Plan should also support the beginning of discussions with NMHIC stakeholders to create a financial construct to support NMHIC in the future
3. The Business Plan report should also meet the requirements as a deliverable for the NHIN Trial Implementation contract.

ii. Accomplishments: The development of the NMHIC Business Plan has meet all three criteria above:

1. It has given the NMHIC team a better understanding of user priorities, network expenditures, network revenues and potential scenarios:
    a. The Business Plan included a survey of potential network users which identified the priorities of clinicians for specific network services. This information has enabled NMHIC to select the network services which are of greatest value to potential NMHIC users.
    b. The development of a NMHIC operating plan which has enabled us to project NMHIC expenditures for the next five years.
    c. The development of financial projections that show when NMHIC will become financially self-sustaining
    d. How these projections might change based on different scenarios.

2. Version 1.0 of the NMHIC Business Plan was completed on September 30, 2008. It has provided the foundation to support the beginning of discussions with NMHIC payer stakeholders to determine a single financial construct for all payers in the state. The business plan has also been reviewed with the members of the NMHIC Steering Committee and has served to increase the confidence of the NMHIC Steering Committee in the capability and direction of NMHIC. Finally, we expect the Business Plan to strengthen NMHIC's ability to sign up additional data suppliers and clinician users.

3. The NMHIC Business Plan Report Version 1.0, along with its companion documents, was sent to ONC in early October for review and comment. The NMHIC team will include any updates requested by ONC before submitting it as a deliverable under the NHIN contract on or before November 14, 2008.

2. Feasibility and fit in emerging market/environment
    i. Criteria: To have NMHIC recognized as the statewide HIE network for New Mexico and the gateway to the NHIN.
    ii. Accomplishments: Although NMHIC is broadly recognized as the emerging statewide HIE in New Mexico, there are several other exchange operations that overlap in function and may even compete with NMHIC, so we are working to coordinate our efforts with these potential competitors to avoid duplication or conflict. These efforts include Health-XNet, which provides a broadly used network for claims and eligibility processing and credentialing; the developing Medicaid claims-based network for ERs (operated by the NM Human Services Dept.); the developing TriCore data warehouse initiative (which has some aspects of health exchange); and some health plan efforts to provide quality feedback to clinicians through vendors such as MEDecisions. Connecting to the NHIN brings significant additional data and functionality to our community. In particular, connections to the Veterans Health Administration, the Military Health Service of DoD, and the Indian Health

Service are important to our considerable populations of veterans, military personnel, and Native Americans.

3. Perceived Value (current vs. future)
    i. Criteria: To assess the perceived value of the HIE and its services to key stakeholders, users, and beneficiaries.
    ii. Accomplishments: As part of the effort to develop a strong Business Model and Plan (funded by both NHIN and the NM State Legislature), we conducted a statewide survey of clinicians to assess their priorities in terms of desired HIE network services (e.g., lab results reporting), as well as interviews with executive decision makers in health plans, medical groups, and hospitals to determine their willingness to buy services from NMHIC. The clinician survey indicated that the initial NHIN core components (Patient Summary Record) and selected use cases (i.e., lab results reporting and emergency responder) were highly ranked by the clinicians. In addition, the executive decision makers have generally been positive concerning the likelihood of supporting the HIE financially, when it becomes fully operational in mid-2009.

       The value of the NHIN itself has also piqued the interest of local New Mexico health systems, since the latter are definitely interested in the participation of the VA and the Indian Health Service, since the lack of shared electronic data between the federal systems and the private sector health systems has been an impediment to the coordination of care across the community.

F. NMHIC Staffing
    i. Criteria: During the base year of the NHIN contract, the NMHIC Management and Technical team will need to add additional capabilities in these areas: project management, knowledge of the standards necessary to enable interoperability, and the knowledge and skills to implement, test, and operate the Initiate EMPI and the FirstGateways network components of MedPlus.

    ii. Accomplishments: Possibly the most important achievement derived from the funding provided by the NHIN Trial Implementation contract was the ability to broaden and strengthen the NMHIC management and technical team. NMHIC now has a very capable CIO, Dave Perry, who has built a strong project management and technical staff and worked effectively with our technology partner, MedPlus. The technical staff has completed training on both the Initiate and MedPlus platforms. This team has not only met the schedule for every NHIN contract deliverable, it has met these requirements in such a manner that ONC selected NMHIC for a prominent role at the NHIN demonstrations in September, 2008. These increased technical capabilities complement the pre-existing community leadership of Maggie Gunter, PhD, President; Jeff Blair, MBA, Director of Health Informatics; and Bob White, MD, Director of Clinical Informatics at LCF.

G. NHIN Contract Deliverables

i. Criteria: LCF/NMHIC should meet all deliverables as defined in Part 1, Section F.2 of the contract and addendums.
ii. Accomplishments: LCF/NMHIC has met or exceeded all deliverables as required in the contract and addendums as described below:

Ref	Contract Deliverable	Original Due Date	New Due Date	LCF/NMHIC Status
1	A comprehensive work plan that includes a written description of proposed process/strategy to execute all tasks and apply the Earned Value Management (EVM - as referenced in section 300.4 of OMB Circular A-11) to the extent practicable. The work plan shall also provide the Project Officer with project activities; task prioritization; resource requirements, including person hours by task; interim milestones to achieve deliverables; interdependencies and intersections with other activities and risk mitigation strategies.	Within 2 weeks of Effective Date of Contract (EDOC)	Completed	The LCF/NMHIC Work Plan was submitted to ONC on time.
2	A project start-up meeting with the Project Officer to review the contract, introduce Contractor and Government staff, and identify and prioritize initial activities.	Within 3 weeks of EDOC	Completed	Project start-up meeting occurred on October 18, 2007. LCF/NMHIC and MedPlus staff participated as required.
3	Participate in meetings and related activities as defined in Task 3 above.	Collaborative – up to 12 meetings per year Tasks – weekly to bi-weekly meetings Fora – 3 during performance period Exchange testing – one in person meeting Demonstrations – up to 3 Tracking – 2-3 meetings/ month	Ongoing	LCF/NMHIC staff has participated in the following Collaborative Workgroups: Leadership & Communication, DURSA, Testing, Core Services Content, Security & Technical, Provider Perspective, and Population Perspective. LCF/NMHIC staff has attended all Public Forums, Testing Events, and the NHIN AHIC Demonstration.
4	Written monthly status and financial reports describing progress against milestones, potential risks and risk mitigation strategies, EVM to the	Beginning 2 months of EDOC and every month	Ongoing	All written monthly status and financial reports have been submitted.

Ref	Contract Deliverable	Original Due Date	New Due Date	LCF/NMHIC Status
	extent practicable and planned activities for the coming month and report such status orally and in writing every month to the Project Officer. The financial reports shall include: (1) actual cost for the reporting month and cumulative cost for the contract to date, (2) budgeted costs for the reporting month and contract to date, and (3) estimated costs by month for the remainder of the performance period of the contract.	thereafter. All reports shall be provided and submitted on or before the 10th day of the month following the reporting period.		
5	Common template for data use and reciprocal support agreement and clearance to support health information exchange of test data with other trial implementations implemented by other NHIN contractors while ensuring the privacy and security of all health information is maintained.	Within 4 months of EDOC	Completed	The LCF/NMHIC Medical Director and attorney provided significant support toward the completion of this task.
6	Fully **executed** data use and reciprocal support agreement that allows for trial health information exchange of **test** data with other awardees while ensuring the privacy and security of all health information is maintained.	Within 6 months of EDOC (March 31)	June 30, 2008	LCF/NMHIC has fully executed the test data DURSA.
6B	Fully **executable** data use and reciprocal support agreement that allows for trial health information exchange of **test** data with other awardees while ensuring the privacy and security of all health information is maintained.		March 31, 2008	LCF/NMHIC has fully executed the test data DURSA.
7	Standards-based interface specification recommendations to support the core services (Appendix A) of this RFP. (Each NHIN Contractor will be assigned lead or co-lead project management responsibility for these specifications for some services of the NHIN.)	Within 6 months of EDOC (March 31)	March 31, 2008	LCF/NMHIC and MedPlus staff have been engaged and contributed significantly in the completion of this milestone.
7A	Description of functional capabilities and detailed information exchanges needed to support the implement of the use cases (This deliverable will be handed off to the core services WG as input to the specifications for use cases in deliverable #7B)		April 30, 2008	LCF/NMHIC staff participated in the Provider Perspective Workgroup in developing the EHR Lab Results and Emergency Responder Use Case Requirements documents submitted to ONC on April 30, 2008.

Ref	Contract Deliverable	Original Due Date	New Due Date	LCF/NMHIC Status
7B	Standards-based interface specification recommendations to support the use case specific services of this RFP.		June 30, 3008	LCF/NMHIC staff worked with the Core Services Content Workgroup in developing the EHR Lab Results and Emergency Responder Use Case Content Specification documents submitted to ONC on June 30, 2008.
8	Test scenarios and plans to exercise core services during the cooperative implementation testing activity near the end of the period of performance	Within 9 months of EDOC (June 30)	June 30, 2008	LCF NMHIC staff participated in the Requirements Management subgroup of the Testing Workgroup and provided information and feedback to the Test Plan.
8A	Test scenarios and plans to exercise use cases during the cooperative implementation testing event		September 15, 2008	LCF/NMHIC staff participated in the Provider Perspective Workgroup and Testing Workgroup in developing the EHR Lab Results and Emergency Responder Use Case Test Scenarios and Test Cases submitted to ONC on October 13, 2008.
9	Service area-specific business plan that shows how the health information exchange will share data nationally and be self-sustaining within five years.	Within 9 months of EDOC (June 30)	September 30, 2008 Extended to November 14, 2008	LCF/NMHIC Business Plan was submitted to ONC on September 30, 2008.
10	Demonstration of data flowing within exchange jurisdiction that creates or accesses summary records to support health exchange from participating provider organizations	Within 9 months of EDOC (June 30)	June 30, 2008	Documentation of data flowing within NMHIC's jurisdiction submitted to ONC on June 30, 2008.
11	Develop, test, implement and evaluate common interfaces in trial implementation. Determinations will be made to determine if remediation of items identified at testing event have been accomplished and final determination of who will demonstrate in September. Funding will be terminated for those who can not accomplish the demonstration.	Within 11 months of EDOC (August 29)	August 29, 2008	Successfully participated in NHIN Core Services Conformance and Peer to Peer Testing and attended the August Test Event. LCF/NMHIC demonstrated the Core Services functionalities at the event and did not require any remediation activities.
11B	Develop, test, implement and evaluate use case interfaces in trial implementation. Determinations will be made to determine if remediation of items identified at testing event have been accomplished and final		November 30, 2008	LCF/NMHIC and MedPlus staff have been participating in NHIN Use Case Peer to Peer Testing and are scheduled to attend the Test Event at NIST on November 12- 14, 2008

Ref	Contract Deliverable	Original Due Date	New Due Date	LCF/NMHIC Status
	determination of who will demonstrate at the NHIN Forum in Dec. Funding will be terminated for those who can not accomplish the demonstration.			
12	Participate in "cooperative exchange testing" meeting with all NHIN awardees to test and eliminate final issues of connection for core services and demonstrate successful interchange between all awardees implementing those capabilities.	Within 12 months of EDOC (Sept)	4 weeks before September 23 AHIC demonstration (dates TBD)	LCF/NMHIC staff attended the Cooperative Exchange Testing Event August 18-20, 2008 and met all requirements without remediation.
12B	Participate in "cooperative exchange testing" meeting with all NHIN awardees to test and eliminate final issues of connection for core services and AHIC use cases and demonstrate successful interchange between all awardees implementing those capabilities.		4 weeks before the NHIN Forum (dates TBD)	LCF/NMHIC staff is scheduled to attend the Use Case Test Event November 12-14, 2008.
13	Participate in a public meeting that will demonstrate the connectivity across all contractors in sharing data by implementing the agreed upon specifications for interfaces.	Within 12 months of EDOC	September 23, 2008 at AHIC	Successfully demonstrated the exchange of Summary Patient Records during the NHIN Trial Implementation demonstration on September 23, 2008.
13B	Participate in the NHIN Forum demonstrations		December 2008 (dates TBD)	LCF/NMHIC staff is scheduled to attend the Use Case Demonstration Forum December 15-16, 2008.
14	All software developed with use of government funds including complete system design documents identifying in detail integrated commercial products (whose licenses need not be conveyed to the government), commercial product versions utilized along with specific configuration data and any custom scripting required, encapsulated deployment packages, source codes and manuals to facilitate subsequent deployments. The licenses will include all intellectual property (of non-commercial products) developed as part of this contract.	Within 12 months of EDOC (Sept 28, 2008)	Jan 24, 2009	In progress.
15	Complete evaluation as described in Task 11	Within 12 months of EDOC (Sept 2008)	October 31, 2008 Extended to November 14, 2008	Evaluation Report submitted to ONC on November 14, 2008.

Ref	Contract Deliverable	Original Due Date	New Due Date	LCF/NMHIC Status
16	Common template for data use and reciprocal support of health information exchange of **live** data that protects the privacy and confidentiality of health information exchanged.		August 15, 2008	We have continued to support the DURSA working group as they work toward this deliverable.
16B	Fully executable data use and reciprocal support agreement for health information exchange of **live** data that protects the privacy and confidentiality of health information exchanged.		October 1, 2008	We have continued to support the DURSA working group as they work toward this deliverable.

H. Conclusions and Next Steps

Lovelace Clinic Foundation and the New Mexico Health Information Collaborative would like to thank the Office of the National Coordinator for the opportunity to participate in the NHIN Trial Implementations.

The NHIN Trial Implementations enabled NMHIC to demonstrate in September, 2008, that it can exchange summary patient records with other NHIEs over the NHIN by complying with national standards for interoperability and the Data Use and Reciprocal Support Agreement (DURSA). In December, 2008, NMHIC expects to demonstrate that it can also exchange lab results and emergency responder information over the NHIN. In addition, the NHIN Trial Implementations has enabled NMHIC to demonstrate the potential to provide continuity of care within New Mexico by sharing data among private sector health care providers, the Veterans Health Administration, the Military Health Service of DoD, and the Indian Health Service, via the NHIN.

The next steps for NMHIC are to connect the remaining major hospitals and medical groups in Albuquerque to the NMHIC network and provide support services for clinician usage so that NMHIC network services can be commercially available by August, 2009. NMHIC will need to manage this accomplishment on a tight budget during 2009, and secure a commitment by all payers in the state to support NMHIC beginning in 2010, based on a single financial construct (the same per member per month rate for all payers). NMHIC is optimistic that it can meet these challenges.