

A Strategic Plan for Health Information Technology and Exchange



CITIZENS
HEALTH
INITIATIVE

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EXECUTIVE SUMMARY

The acquisition and deployment of Health Information Technology (HIT) and Health Information Exchange (HIE) throughout the healthcare system(s) in New Hampshire offers a unique opportunity to make substantial progress in improving the health of our citizens. **The direct benefits include: improved patient safety and healthcare quality, enhanced public health, healthcare cost reduction, access to care, and consumer engagement and empowerment.** It is vitally important that the State of New Hampshire have a strategic vision for both the implementation of information technology and a system of connectivity that will provide for the free exchange of information among providers throughout the state. HIT and HIE is a core pillar of our healthcare system.

The purpose of this document is to develop a roadmap for both the industry and public policy makers to achieve a fully deployed and integrated system of HIT and HIE. The genesis of this report is a Vision and Principals Statement that was developed by the New Hampshire Citizens Health Initiative and adopted in 2007 (**Appendix B**). The HIT and HIE Working Group re-affirmed this Vision and Principals Statement, and the Vision Statement below forms the basis of the Working Group's proceedings:

Vision Statement

Private and Secure. *A patient's personal health information will be secure, private and accessed by healthcare providers only with patient consent or as otherwise authorized by law.*

Promotes Quality, Safety and Efficiency. *HIT and HIE will serve as vehicles to promote quality, enhance patient safety, increase efficiencies in healthcare delivery, expand access and improve public health.*

Electronic. *All healthcare providers will use a secure, electronic record to store and access patients' personal health information.*

Patient Accessible and Portable. *All patients will have access to a secure, electronic and portable health record.*

Equitable. *HIT and HIE will be a vehicle to support equitable access to healthcare services through out the state.*

To achieve the vision of a transformed healthcare system with easy access to important clinical information, the HIT and HIE Working Group has identified five core strategies:

1. **Ensure that all providers of healthcare have access to electronic tools, irrespective of organizational size, financial capacity, or location.** Computerization of health records often referred to as electronic medical records (EMRs) has come slowly to the healthcare industry. However, most practitioners have adopted some forms of computerization. It is essential that all providers from the largest integrated hospital and physician systems to private practitioners, community health centers, nursing homes, and home health and hospice agencies adopt, acquire, and implement electronic medical records into their operations. This will allow for the eventual sharing of clinical information across the healthcare system and with patients and their families.
2. **Promote information exchange that enables healthcare providers to access and exchange clinical information and data across geographic and organizational boundaries.** The use of electronic tools and storage of patient data in an electronic file is valuable to clinicians only if the data is meaningful, easily retrievable at the point of care, can be provided by all entities generating the data, and can be shared with clinicians and consumers. Too often, clinicians operate within information silos using systems that include only their own patient data. It is essential that a system (or systems) of interconnectivity be efficiently deployed in an interoperable manner to provide information no matter where the patient seeks care.

3. **Develop a framework for engaging and empowering patients to access their health records and participate in their health management.** Computerization of electronic health records provides an important opportunity to engage patients more actively in the management of their health. There is a world of medical information available to consumers on the internet, yet few New Hampshire residents have direct electronic access to their own electronic health records. Technology exists that provides a way for patients to have access to their personal health records (PHRs). Engaging consumers in the maintenance and management of their health is a transformational opportunity to enhance patient/provider communication, improve outcomes, more closely monitor care, enhance consumer responsibility for their care, and improve efficiency of the delivery system.
4. **Support a privacy standard that protects patient health information while identifying and promoting the benefits of sharing clinical information between healthcare providers.** Protecting patient privacy and maintaining the public trust is a critical element to the successful deployment and optimal utilization of an electronic records system and the appropriate exchange of patient data. This protection must be balanced with enabling the transfer of clinical information in order to improve clinical quality and patient outcomes. Both provider and patient education efforts must take place in order to complete the privacy picture.
5. **Create a sustainable state-level entity to convene stakeholders, coordinate planning, monitor progress and report annually to the Governor, Legislature and the healthcare industry on the advancements of these initiatives.** To achieve the goals articulated in this report it is essential to establish a clearly recognized convening and coordinating structure. This structure will provide the leadership to achieve the goals and will require an annual monitoring and reporting of progress. This function should be a shared public/private undertaking that assures balanced input from all stakeholders.

While significant investments have already been made in the acquisition and deployment of health information technology, there is significant variation in the financial and technological capacity of various provider systems to achieve these goals. In general, large hospital systems, hospital-owned physician networks, and community health centers have the critical mass to successfully deploy the technology. Critical access hospitals, small or independent physician practices and post-acute healthcare providers (nursing homes, home health and hospice health agencies) are often disadvantaged in implementing these core strategies by their size, financial capacity, and access to both IT resources and financial capital.

There is significant opportunity for the state, the private sector, employers, consumers, and other stakeholders to work together to ensure full deployment of HIT and HIE in the coming years. The remainder of this document spells out the opportunities for New Hampshire, provides an overview of activities outside our borders, and identifies specific action plans, policy recommendations, and details of a proposed Successor Group.

OPPORTUNITY STATEMENT FOR NEW HAMPSHIRE

At its core, HIT and HIE efforts are about providing New Hampshire's citizens with a safe, high quality, cost-effective, and consumer-friendly healthcare system. The potential benefits of HIT and HIE to both consumers and the healthcare system as a whole presents a compelling list of reasons for a coordinated, focused, public/private initiative that will organize and prioritize steps to achieving this vision and provide for maximum utilization of limited financial resources:

- **Patient Safety and Healthcare Quality:** According to the Institute of Medicine, more than 100,000 deaths occur in this country annually due to medical error. Countless others occur that do not result in deaths. These errors are often the result of inadequate information available to the clinician, such as medication history. Additionally, higher quality patient care is possible through adherence to scientifically proven treatment protocols and guidelines. Information technology deployment is essential for the efficient management of this information and operational processes.
- **Public Health:** There are significant benefits to population health through integration of clinical information systems with public health information systems. Efforts such as syndromic surveillance, epidemiological studies, and determination of populations who require or would benefit from public health programs can be supported by HIT and HIE.
- **Healthcare Cost Reduction:** One of the key drivers for investment in HIT and HIE is to assist in reducing healthcare costs, primarily via increasing operating efficiencies and reducing duplication. The elimination of paper records and files, ending manual transmission of prescriptions, enhancing access to patient demographic and health coverage information, and transmission of lab results, problem lists, and radiology results electronically can all increase operating efficiencies as well as improve care. The availability of clinical information at the point of care can reduce the need for re-ordering tests and procedures which increase the cost of care.
- **Access to Care:** Technologies such as telehealth/telemedicine have the power to provide care to populations where specific medical services are unavailable. Currently, home health, radiology, dermatology, and behavioral health services are being provided through the use of these technologies to some communities in New Hampshire. With improvement in telecommunication infrastructure and appropriate reimbursement, these technologies will continue to proliferate.
- **Consumer Engagement and Empowerment:** There is much discussion about the "engaged healthcare consumer". In order to become engaged, the consumer needs access to cost, quality, and clinical information. This may be via a patient portal to their electronic health record, or via information delivered by a health plan or the New Hampshire Department of Health and Human Services.

Payment reform, quality and outcomes reporting, patient centered medical homes, disease registries, improved care management, telehealth, health system transparency, and public health disease surveillance are all examples of efforts that are dependent on all healthcare providers having access to technology across the continuum of care delivery. Without HIT and HIE investment, the potential of these efforts will not be fully realized.

While the healthcare industry as a whole has made significant investments in technology for diagnostic, clinical and treatment purposes, it has been relatively slow to adopt health information technology and health information exchange as a health management tool. It has only been in the last decade that substantial investments have been made for the adoption and deployment of electronic medical records.

The integration of these records into the operational environment and work flow of physician offices and hospital systems is a time consuming and challenging undertaking which requires investment of human and financial resources. The connecting of these isolated silos of data into a coherent system of data exchange within existing organizational structures has begun in the past five years. Transporting this data across organizational and geographic boundaries is at an early stage of development in many parts of the state.

Many of New Hampshire's healthcare providers, across a broad spectrum of care delivery, have made significant investment in HIT. These investments serve a foundational and vital role in the state's efforts to increase HIT adoption, and ultimately to achieve advanced levels of HIE.

THE CASE FOR HIT AND HIE INVESTMENT

HIT and HIE has the promise of addressing multiple issues within New Hampshire's healthcare landscape:

- **Technology Adoption:** Increasingly, New Hampshire is moving to a system of haves and have-nots with regard to the purchase and implementation of HIT. The larger, integrated delivery systems, multi-specialty practices, and community health centers have the critical mass needed to purchase, implement, and maintain EMR and ePrescribing platforms. Many other providers have also made investments in home health monitoring technology and other forms of telehealth. Smaller private practices (less than five clinicians) are having a more difficult time choosing, implementing, and paying for systems as technology purchasing is not their core business and the systems are expensive. There is a significant opportunity for HIT adoption in nursing homes, home care, specialty practices, community behavioral health centers, and other care settings not covered through integrated delivery systems, multi-specialty practices, and community health centers. It should be recognized that simply having limited technology, such as EMR, is not sufficient. It must be implemented with functionality and interoperability that is consistent across provider entities.
- **Internal HIE:** There is much HIE work to be done by our hospital institutions to integrate internal operating and clinical systems. An example of internal HIE is the integration of a hospital's inpatient clinical system with their outpatient EMR platform. Additional HIE may need to occur with other platforms such as lab and PACS (radiology) systems. In contrast, some multi-specialty practices and all of New Hampshire's community health centers have implemented their core EMR and billing systems and are now ready to work on HIE within and across communities.
- **Patient Mobility:** Based upon data from the New Hampshire Comprehensive Healthcare Information System (NHCHIS), it is evident that New Hampshire patients move freely across state borders as well as across communities within the state (**Appendix C**)—17% of care to New Hampshire residents is delivered outside of New Hampshire while between 29% and 69% of the residents in New Hampshire communities leave their community for care. Additionally, some New Hampshire healthcare organizations serve significant numbers of out-of-state residents which require coordination with out-of-state providers. This movement necessitates solutions for improved information flow across care communities and across borders so that a patient's full medical record can accompany the patient within the marketplace. This is consistent with work occurring at the federal level surrounding the development of state-level HIEs and the Nationwide Health Information Network (NHIN). This issue could also be addressed through a state-level patient portal strategy.
- **Equitable Distribution of Resources:** As articulated by the New Hampshire Telehealth Program, there is significant opportunity in New Hampshire to further advance the deployment of telehealth technologies (video conferencing, home health monitoring, store and forward technologies, etc.). However, adequate and dependable reimbursement from payers is an issue and needs resolution. The deployment of telehealth technologies will not only improve quality of medical care delivered to New Hampshire's rural areas, but will also improve the distribution of scarce resources (ie, child psychiatry, dermatology) to these areas (**Appendix D**).
- **Public Health Systems:** The New Hampshire Department of Public Health (DPH) has multiple IT systems that require updating and consolidating per their recent Centers for Disease Control (CDC) Public Health Information Network (PHIN) analysis conducted by an outside firm (**Appendix E**). There is a distinct opportunity for New Hampshire's DPH to expand their existing HIE platform to address these issues.

It is important to note that New Hampshire, as a whole, has made significant strides in adoption of HIT. However, there is wide variation in the level of investment and rate of adoption based upon organizational size, human and financial resources, access to capital and geographic location. This gap between the "haves and the have nots" needs to be closed to assure equal access for all New Hampshire residents to an optimal system of care.

There are market *and* policy actions that can be taken to support and complement current hospital and community investments in HIT. Policy actions may include legislative actions, Executive Orders, purchasing practices for state and local employee health benefit plans, and Medicaid reimbursement and medical management policies.

It is essential that a concept for statewide HIE functionality be developed to provide for the interconnectivity of disparate HIT systems. Although many hospitals and physicians currently exchange necessary patient information, there is no effort or coordinated approach underway to develop and implement a statewide network. There is significant activity centered on the development of local (hospital centric) Network Neighborhoods. A Network Neighborhood is a set of local healthcare provider entities (usually grouped around a hospital system) with electronic linkages that tie internal and external information flows together. *Figure 1* provides an example of such a network.

These community-specific Network Neighborhoods may be linked together in order to form regional or state-wide HIEs. *Figure 2* depicts not just the linking of the various community Network Neighborhoods, but also ties into non-clinical functions such as public health, insurers, and consumers. These are all important stakeholders in the HIE vision for the state.

While recognizing the importance of HIE to New Hampshire, the HIT and HIE Working Group did not achieve consensus on the form and structure of an HIE function that would serve the entire state. The Working Group discussed two primary options for HIE. The first being a state-level entity and the second being interlinked Network Neighborhoods. Both options will ultimately allow for state-level interconnectivity, but the latter more readily recognizes the investments made by local care providers to date. Whether initially state-level or not, successful HIE requires many things to be successful: a high level of participation by providers, privacy and interoperability standards, sufficient capital for infrastructure development and sustainability, the development and maintenance of a patient and provider record locator service, and adoption of a governance structure to support the operations.

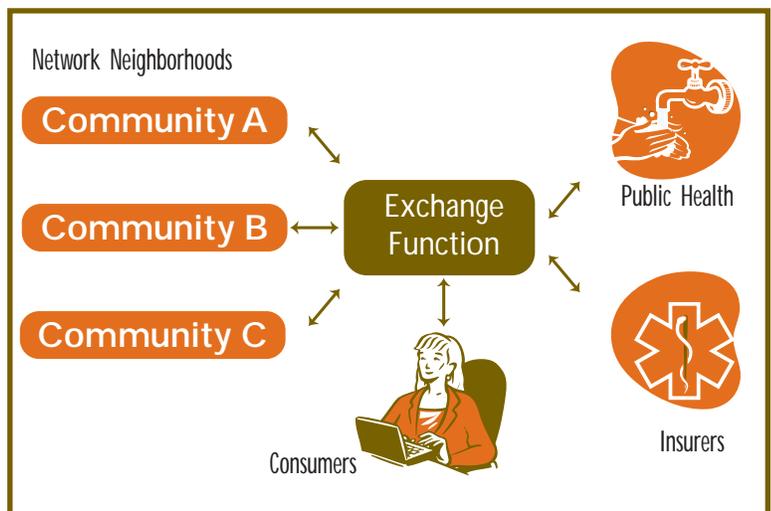
It is important to recognize that if multiple HIE efforts are undertaken, they will need to have the capability to link together in order to benefit all geographic areas of New Hampshire as well as to be coordinated with the Nationwide Health Information Network (NHIN) efforts. While New Hampshire is not currently bound to federal mandates regarding HIE, it would be prudent for New Hampshire to make investments that align strategically with the federal vision. It is also anticipated that additional federal funding may be available in future years, depending on the resolution of the current and near term federal fiscal crises.

The Working Group has identified many promising areas of opportunity where HIE pilots could be created. These pilots might eventually lead to the formation of an HIE entity serving the entire state if the pilot initiatives are harmonized. These pilots are discussed in the Action Plan on pages 10 and 11.

Figure 1



Figure 2



THE CURRENT LANDSCAPE: FEDERAL, REGIONAL, LOCAL

The advancement of health information technology (HIT) in the past decade has been significant. More Americans now have access to providers that use electronic medical records, electronic prescriptions, telehealth, and electronic exchange of information, which in turn is helping to improve clinical quality, reduce costs, and improve access.

At the same time, many providers and healthcare stakeholders are struggling to provide the capital needed for investment in HIT. The federal vision to create a system of interconnected HIEs is impeded by a lack of start-up capital, fiscal sustainability, privacy and security standards, and technical standards.

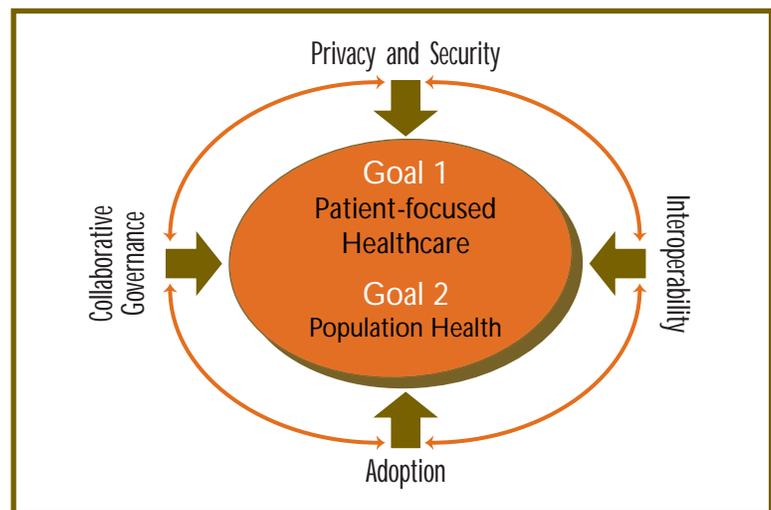
The current landscape has multiple areas of opportunity and significance that relate directly to this document. There are efforts being undertaken at the federal, regional, and state level that are directly related to, and in support of, one another.

AT THE FEDERAL/NATIONAL LEVEL

There are many initiatives currently operating at the federal level in support of HIT and HIE activities. New Hampshire has participated in some of these activities and will likely participate in future ones either as a result of federal mandates or as opportunities naturally align. This is not a full list of all federal HIT and HIE activities, but comprises those of significance to New Hampshire:

- The U.S. Department of Health and Human Services created the Office of the National Coordinator (ONC) in 2004. ONC is tasked with developing the standards for functionality and interoperability of information technologies that support the federal vision for an interconnected Nationwide Health Information Network (NHIN). These standards include business processes, electronic medical record certification, health data exchange interoperability, and privacy and security (ie, CCHIT, HITSP, AHIC, HISPC). It is expected that the incoming White House administration will continue to support these efforts.
- In June, 2008, the ONC released the first federal Strategic Plan for HIT and HIE entitled “The ONC-Coordinated Federal Health Information Technology Strategic Plan 2008-2012” (Appendix F). The high level ONC framework is provided in Figure 3. Sustainability of these efforts is implied, although not reflected by the diagram. In December 2008, ONC released a privacy and security framework document and the US Department of Health and Human Services released HIPAA privacy rules guidelines.
- Both the Institute of Medicine and U.S. Health and Human Services Office of the National Coordinator have stated that for healthcare quality to improve, investments must be made in efforts that will bring the population (public) health system and the personal care (medical) system together. To that end, ONC states that HIT and HIE is one vehicle to accomplish this.
- The Public Health Information Network (PHIN) is a national initiative of the US Centers for Disease Control to improve the capacity of public health agencies to use and exchange information electronically by promoting the use of standard messaging formats and vocabularies as well as by defining technical requirements. The standards and technical requirements are determined by adopting existing best practices (i.e., HL-7 messaging) related to efficient, effective, and interoperable public health information systems that support both routine public health activities and emergency preparedness and response. The CDC serves as the facilitator of the PHIN community and the steward for PHIN resources.

Figure 3



- The Centers for Medicare and Medicaid Services (CMS) is supporting incentives for HIT and HIE in areas such as pay-for-performance quality metrics, electronic prescribing adoption, and electronic medical record adoption.
- The National Governor’s Association’s State Alliance for e-Health has been a driving force in assisting states with developing clarity regarding multiple HIT and HIE efforts and released a report “Accelerating Progress: Using Health Information Technology and Electronic Health Information Exchange to Improve Care” (**Appendix G**).

AT THE REGIONAL LEVEL

There are multiple HIT and HIE efforts occurring in New England. The working group has reviewed these efforts, along with other states such as Michigan and New York, as part of this process. Regional efforts vary widely in their scope, funding, and operations. They are listed here in order for the reader to have a sense of what else is occurring within our region. Additionally, as New Hampshire moves forward on executing its HIT and HIE vision and as the National Health Information Network proceeds, it will be important to understand what New Hampshire’s neighbors are implementing.

- Vermont has developed a state-level organization called Vermont Information Technology Leaders (VITL) that is focusing on increasing HIT adoption and is implementing a state-wide HIE to support Vermont’s Blueprint for Health. VITL has developed a resource center to assist clinicians with HIT adoption. The Legislature recently instituted a tax on health insurance claims to fund their efforts over the next five years.
- Maine has developed an HIE entity called HealthInfoNet. There is no separate HIT effort that is coordinated at the state-level. HealthInfoNet is working collaboratively with providers, employers, consumers, and the state to implement a working HIE within the next two years. Maine has chosen a repository model for their HIE. They receive minimal state funding and are primarily funded via grant monies and provider support. Their total budget is approximately \$6.5M over two years.
- Massachusetts is working to implement both full EMR and HIE within three pilot communities. It is a \$50M project funded by Blue Cross Blue Shield of Massachusetts. The pilots are expected to end next year. Funding beyond that point has not been determined.
- Rhode Island has developed an HIE via their Department of Public Health for clinical information sharing within their provider community. It has been accomplished with state funding and is managed jointly between the DPH and the RI Quality Institute.

AT THE STATE LEVEL (NEW HAMPSHIRE)

Many entities in New Hampshire have made significant investments in HIT and HIE as a direct response to the need to continuously improve quality, create operational efficiencies, engage healthcare consumers, and implement innovative clinical models such as the nationally recognized Primary Care Centered Medical Homes (PCCCM). The following are key HIT and HIE efforts currently underway in the state:

- New Hampshire has a high level of electronic medical record (EMR) adoption within hospital-owned physician practices, community health centers, and some specialty practices. It is estimated that more than 65% of primary care clinicians have access to some form of EMR.
- Hospital based, integrated delivery systems and community health centers have invested significant resources to exchange clinical health information electronically (ie, lab data moving from a hospital to a health center), within their organizational environments. Dartmouth-Hitchcock has a long history of sharing patient information among its providers at its multiple operating sites and with its referring physician and affiliates.
- Hospital centric “Network Neighborhoods” like Elliot Health System are emerging to provide point to point connectivity between hospitals and non affiliated area providers (private physician practices, public health agencies, home health and hospice agencies, etc).

- New Hampshire was ranked in 2007 by RxHub as 14th in the nation for percentage of prescriptions filled electronically (ePrescribing). MA and RI are #1 and #2 respectively.
- New Hampshire providers and higher education institutions are preparing for the implementation of a Northern New England high-speed telecommunications network to support rural healthcare providers (\$25M FCC grant to the New England Telehealth Consortium).
- The New Hampshire Telehealth Program (NHTP) has developed an assessment of the current state of telehealth programs in New Hampshire as well as future needs.
- The North Country Health Consortium in partnership with the University of New Hampshire has completed an assessment of HIE opportunities in New Hampshire's North Country.
- New Hampshire Division of Public Health Services (DPHS) engaged a consultant to evaluate the state's readiness to meet PHIN certification requirements. Based on recommendations provided by the consultant, DPHS is preparing a project plan for the implementation of CDC PHIN-compliant messaging and vocabulary services.
- Prior assessment surveys of technology adoption have been conducted in New Hampshire by the New Hampshire Hospital Association and by the University of New Hampshire. The Action Plan section of this report recommends that this prior work be updated on a bi-annual basis.

PRIVACY AND SECURITY

Healthcare privacy and security is an extremely important topic in the deployment of HIT and development of HIE. There is existing national legislation such as HIPAA and CFR 42 Part 2, as well as state legislation that currently governs multiple aspects of privacy and security. Entities such as the U.S. Department of Health and Human Services, the U.S. Centers for Disease Control, and the National Governors Association are all working to address the implications of privacy and security in the era of electronic health information as well as to create recommendations for policy makers.

The HIT and HIE Working Group recognizes that the protection of personal healthcare information is of significant importance. It also recognizes that patient consent to have electronic information sharing among clinicians is critical to realizing the benefits to the patients and the healthcare system. The development of a common consent form and process for managing patient consent for all New Hampshire providers is an important step. There needs to be a balance between patient privacy and the ability to exchange clinical information to improve clinical quality and patient outcomes.

Finding the proper balance between protecting patient privacy and improving patient health through the timely exchange of information will require a full and open public discussion and constant vigilance.

ACTION PLANS

The following tables highlight a series of steps or actions to be undertaken by providers, payers, and policy makers to achieve the vision of an integrated health information system.

INCREASED HEALTH INFORMATION TECHNOLOGY (HIT) ADOPTION AND EXPANSION

The following recommendations include technical solutions, goals for adoption, and methods/actions for achieving adoption. The items are ranked in terms of importance based upon the work of the HIT and HIE Working Group members.

HIT ADOPTION AND EXPANSION OPPORTUNITIES

RANK	TECHNOLOGY	ADOPTION GOAL ¹	METHODS/ACTIONS TO ACHIEVING GOAL
1	Electronic Medical Records (EMR) and ePrescribing (eRX) adoption	<ul style="list-style-type: none"> • 100% EMR adoption by 2014 for all New Hampshire providers • 100% eRX adoption for New Hampshire providers by 2014 	<ul style="list-style-type: none"> • Development of financing mechanisms: <ul style="list-style-type: none"> • Develop a strategy to accelerate EMR adoption, particularly among non-employed physicians by providing tax incentives • Synchronize reimbursement for clinical, process, and efficiency outcomes (ie, P4P, medical home) • Create a state-administered small grants program • Create a state-administered technology revolving loan fund • Coordinate existing financial incentives and develop new incentives from Medicare, Medicaid, and private payers • State funding support for implementation of EMR at the Community Behavioral Health Centers • Require CCHIT-certified EMR solutions to be adopted by providers • Development of a resource center to assist providers identified in the gap analysis with selection and implementation of core technology
2	HIT and HIE Survey	<ul style="list-style-type: none"> • Bi-Annual Survey Process and Gap Analysis 	<ul style="list-style-type: none"> • Conduct a baseline survey in 2009 of all healthcare providers re: EMR, eRX, telecommunications infrastructure, HIE, telemedicine, and identify adoption barriers • Develop a gap analysis and a resulting plan of action
3	Portability of Patient Information	<ul style="list-style-type: none"> • 100% portability of patient information by 2014 	<ul style="list-style-type: none"> • Establish a strategy based upon provider EMRs as well as third-party Personal Health Records (PHR) providers such as Microsoft HealthVault, Google Health and Dossia • Develop a consumer education and communication plan
4	Telehealth	<ul style="list-style-type: none"> • Provide comprehensive, coordinated telehealth services to underserved areas • Incorporate telehealth into the Medical Home model 	<ul style="list-style-type: none"> • Legislative requirement for payers to reimburse for telehealth services similar to Medicare • Support a statewide telehealth program • Formalize pilot programs at the state level within the Department of Corrections, the Bureau of Behavioral Health, and other key areas
5	Public Health Department Information Technology	<ul style="list-style-type: none"> • Compliance with PHIN Assessment by 2014 • Integration of the new Vital Records platform with longitudinal public health databases 	<ul style="list-style-type: none"> • Development of integrated public health platforms at DHHS to support US CDC requirements
6	Telecommunications	<ul style="list-style-type: none"> • High-speed bandwidth delivered to all New Hampshire providers by 2014 	<ul style="list-style-type: none"> • Continued participation in New England Telehealth Consortium (FCC grant); includes development of regional healthcare network and group purchasing • Establish partnerships with Fairpoint and other telecommunications providers to develop a provider needs assessment

1. These goals tie directly to the Vision and Principles document developed in 2007.

HEALTH INFORMATION EXCHANGE (HIE) PILOT OPTIONS

In lieu of a statewide approach to an HIE entity as described on page 6, the following table outlines a series of HIE pilot opportunities before New Hampshire's healthcare community. Some are regional and many could also be done from a state-level perspective such as a public health or Medicaid HIE. These were ranked in order of priority by the HIT and HIE Working Group although there is no preclusion for pilots working in parallel efforts.

HIE PILOT OPPORTUNITIES

Rank	Pilot Opportunity	Description / Core Purpose	Possible Actions to Take	Possible Funding Paths
1	Local Network Neighborhood Expansion	<ul style="list-style-type: none"> Expansion of existing Network Neighborhoods in communities such as are beginning in Plymouth, Manchester, and the Seacoast 	<ul style="list-style-type: none"> Use the planning grant opportunities in Plymouth (Mid-State Health) and the Seacoast (CHAN) to seek HIE platform technologies Expand other, existing Network Neighborhoods, including those in competitive environments 	<ul style="list-style-type: none"> Provider sponsored Federal grant funding
2 (tie)	Statewide Patient Portal	<ul style="list-style-type: none"> Development of a free-standing patient portal (ie, not tethered to a provider or a health plan) that would serve the needs of all New Hampshire citizens Data would be populated at the request / control of the patient 	<ul style="list-style-type: none"> Enter discussions with leading Personal Health Record vendors to determine feasibility of such a strategy Engage consumers, employers, and providers in the strategy 	<ul style="list-style-type: none"> New Hampshire Citizens Health Initiative to underwrite feasibility strategy with its funding partners Funding for implementation TBD
2 (tie)	Payer	<ul style="list-style-type: none"> Development of a multi-payer database of clinical information to support chronic care management programs and patient identification efforts 	<ul style="list-style-type: none"> Develop a ROI study to quantify cost savings from reductions in medical expenditures. Utilize study to develop a Return on Investment (ROI) for network neighborhood HIE expenditures. 	<ul style="list-style-type: none"> Payers State (if state wanted to treat this as a public health or Medicaid initiative)
3	North Country Region	<ul style="list-style-type: none"> HIE, EMR-Lite, and PHR Technology Serving CAHs, CHCs, Nursing Homes, and Home Health Agencies 	<ul style="list-style-type: none"> Develop business plan and RFP for vendor services based upon initial North Country survey process 	<ul style="list-style-type: none"> North Country Health Consortium to act as grant writer to HRSA and other sources Consortium members
4	Internal Hospital Exchange	<ul style="list-style-type: none"> Improve interoperability of internal hospital systems (lab, ER, PACS, IP clinical, OP EMR) to prepare for cross-community connectivity Improve access to data in the ER setting 	<ul style="list-style-type: none"> Cost Benefit Analysis of internal effort vs. external HIE opportunity Evaluate use of patient portals and opportunity to develop a common approach across hospital systems Understand hospital systems clinical data priorities (included in the HIT and HIE gap analysis) 	<ul style="list-style-type: none"> Individual providers
5	Public Health	<ul style="list-style-type: none"> System consolidation to support PHIN analysis Focus on syndromic surveillance, chronic care surveillance, and registry consolidation Expansion of AHEDD platform Ensure support for population health needs Ensure effectiveness of quality measurement programs 	<ul style="list-style-type: none"> Evaluate current public health data collection efforts/requirements and match with the state's priorities for population health Develop RFP for vendor services based upon PHIN analysis and certification Audit current quality measurement projects and match with current data availability to prioritize areas of focus Develop strategies to address chronic care condition management 	<ul style="list-style-type: none"> CDC State of New Hampshire

STATE-LEVEL SUCCESSOR GROUP

HIT and HIE is a complex subject requiring ongoing support and the HIT HIE Working Group fully understands that not all questions were answered by this report, and that more time is needed to fully refine the strategy and develop a complete implementation plan to support the recommendations herein. This work will require that one or more Successor Group(s) be created and it is suggested that a public-private partnership model be adopted.

The HIT HIE Working Group recommends that the work to be conducted in response to this report be broken into two phases. Phase 1 will hold responsibility for ensuring that a statewide provider technology survey and gap analysis be completed in order to drive the efforts of Phase 2. Phase 2 will hold responsibility for the following functions:

1. Convene stakeholders bi-monthly to set goals, establish priorities, and encourage cooperation and coordination, and measure and report progress.
2. Develop a road map to be presented bi-annually to the Governor, the Legislature, and the healthcare industry that is based upon the following actions:
 - a. Completion of a survey of healthcare provider technology adoption and conduct a gap analysis report to identify progress and areas where continued technological deployment is required.
 - b. Identification of barriers to HIT and HIE adoption based upon an environmental scan at the state, regional, and national levels, as well as the aforementioned survey and gap analysis.
 - c. Creation of a set of recommendations for market and policy options to support HIT and HIE adoption.
3. Identify nationally recognized interoperability standards for HIT and HIE and promote said standards within the New Hampshire healthcare community (ie, HITSP, CCHIT, HL7).
4. Provide recommendations to policy makers on privacy and security that take into account local and national privacy and security efforts.
5. Develop and provide oversight for an HIT and HIE Resource Center that would conduct the following functions:
 - a. Provide a website for providers to enable the sharing of best practices for HIT and HIE as well as information about resources available to New Hampshire providers.
 - b. Provide a learning network for providers to transfer knowledge and streamline clinical and business processes.
 - c. Provide an ongoing consumer and public education function in collaboration with other consumer and provider organizations.
 - d. Coordinate with regional and national HIT and HIE efforts as appropriate.
6. Closely monitor the portion of the National Economic Stimulation Package that specifically addresses federal investments in HIT and HIE, and be prepared to shape a timely and effective plan for uses of those funds in New Hampshire, as well as any other Federal funds or incentives that may be available.

To achieve these functions, the Successor Group should be convened by the Office of the Commissioner of the New Hampshire Department of Health and Human Services and meet bi-monthly. It is recommended that the Successor Group be comprised of no more than fifteen (15) knowledgeable and energetic members with some familiarity of the work of past work groups and national and regional HIT and HIE activities. As the Successor Group's goal is to provide tools to transform the state's healthcare industry, there needs to be adequate representation from appropriate stakeholders including the following interests: Governor's

Office, New Hampshire Administrative Services (State Employee Health Plan), Consumers, Employers, Providers, Insurers, and the New Hampshire Citizens Health Initiative.

POLICY RECOMMENDATIONS

The HIT and HIE Working Group debated at length whether this report should include specific policy recommendations beyond those of establishing the Successor Group. While numerous policy ideas were discussed and debated, there was not sufficient time or consensus to make specific recommendations. It was decided that further research and discussion of each would be required. With further development of the issues, future policy actions could accomplish the following:

1. **Authorize or require an activity** (i.e., requirement to develop a common consent to share information process for provider adoption; requirement of insurers to reimburse providers for telehealth services);
2. **Remove barriers or enable a specific function** (i.e., enabling legislation for a future statewide or regional HIE);
3. **Create a funding mechanism** (i.e., an assessment on health insurance claims to fund HIT and HIE activities including a resource center).

In addition to policy actions (legislation, Executive Orders, NH DHHS policies, and State Employee Health Plan purchasing policies), it is important to note that voluntary market actions (vision and missions statements, objectives, and operating principles) can also be taken that would harmonize with any possible policy actions.

SUMMATION

While much has been accomplished by individual and group practitioners, hospital systems and ancillary healthcare providers to acquire, implement and share HIT and information at the point of care, there is no statewide view or consensus on how to interconnect these systems to provide for the electronic flow of patient information from an individual provider, practice, or system to another. There are significant gaps in the level of information technology adoption among providers based on size, location and financial capacity. There is a consensus in the industry that we must advance HIT and HIE in the most effective and efficient manner possible.

The cost and effort associated with raising all practitioners and providers to an acceptable level of HIT adoption and then creating a network of electronic connectivity is significant and there are many barriers and impediments to be overcome. However, the long-term benefits to the citizens of New Hampshire that result from improved quality of care, reduced medical errors, improved communication and consultation among practitioners, reduced duplication of tests, enhanced office and work flow efficiencies, increased access by patients to their medical records, and increased participation by patients in the care and management of their health far outweigh the cost of the investment.

If we truly hope to shape a system of healthcare for our citizens that is patient focused, efficient, cost effective, accessible and provides high quality and superior outcomes, we must make the collective effort to develop, acquire and implement a system of information technology and exchange that is visionary, robust and adaptive to change.

This effort will take the combined resources of federal, state and local government working in partnership with healthcare providers, payors and patients to make the investments necessary to achieve the vision.

APPENDICES

Click on link below for each appendix:

- A. [Executive Order 2008–06](#)
- B. [Vision and Principles](#)
- C. [Study of Patient Movement](#)
- D. [New Hampshire Telehealth Program White Paper](#)
- E. [NH DHHS DPH PHIN Analysis Report](#)
- F. [ONC-Coordinated Federal Health Information Technology Strategic Plan 2008–2012 Executive Summary](#)
- G. [Accelerating Progress First Annual Report and Recommendations From the State Alliance for e-Health](#)
- H. [Definitions/Glossary](#)