U.S. Department of Health and Human Services

Nationwide Health Information Network: Trial Implementation

NHIN Evaluation Deliverable #15

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Submitted to:

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> **Technical (standards and adoption)** – Describe how the technical standards and specifications used in the Trial Implementations support adoption and connectivity for your HIE.

MedVirginia has welcomed the opportunity to participate in the development and use of technical standards and specifications. We trust that our work has contributed to the utility and value of such standards. Likewise, we have benefitted from participation by gaining a deeper understanding of standards and specifications, which in turn assists MedVirginia in the management and operations of our HIE.

This area of work within the Trial Implementation directly supports MedVirginia's goals for adoption and connectivity. First, we recognize that interoperability is fundamental for data exchange and integration. Data have historically been housed in provider-based "silos", and the development and use of technical standards and specifications greatly increases the viability of clinical data exchange and integration.

Moreover, data suppliers will be easier to secure and integrate when technical standards and specifications are utilized. Costs – whether measured in time, money or effort – become more affordable. We also note that HIEs participating in the Trial Implementation gain the added benefit of credibility, further encouraging both data suppliers and data users to participate.

MedVirginia is committed to the highest levels of confidentiality, security and privacy. We especially appreciate the efforts of NHIN in the area of security and privacy standards, allowing us to proceed with confidence that our policies, procedures and processes are in alignment with industry best practice.

Finally, integration with, and connectivity to, physician EHRs enables achievement of higher levels of safety, quality and efficiency, while supporting the physician's existing workflow tools. The standards and specifications developed in the trial implementation enable such integration to be done much more efficiently and effectively.

The Workgroup process adopted by ONC in establishing the cooperative was a beneficial addition to our individual work in advancing our HIE functionality. Although the contributors were at varying stages of operation, MedVirginia appreciated the ability to draw upon a much broader set of technical expertise than would otherwise have been available to us. We are also pleased to have been a contributing member on all of the workgroups in order to advance the development of our sister HIEs.

> **Functionality** – Describe how the NHIN trial implementation functionality supports your organization's users and your organization's goals. Identification / inclusion / prioritization of future needs is appropriate.

MedVirginia is fully committed to the NHIN Trial Implementation, and the functionality developed and deployed for the Trial Implementation supports our organization and our users. The mission of MedVirginia is to foster the adoption and use of health care information technology to improve the efficiency and efficacy of health care delivery. The vision of MedVirginia is to become the most electronically integrated medical community in the U.S. Participation in the Trial Implementation provides significant contribution to both the mission and vision.

Prior to this NHIN II project, MedVirginia had actively engaged several relationships with other agencies to pursue effective, comprehensive delivery of healthcare, such as:

- Using one of the first awards granted by Governor Kaine's Virginia Health (HIT) Council to support clinical automation of four free clinics in the Richmond area.

- Developing a technology partnership in the Rural Virginia E-health Collaborative (RVEC), an Agency for Healthcare Research and Quality (AHRQ)–funded initiative to define a Health IT "roadmap" for the rural Northern Neck Area.

- Participating in the Centers for Medicare & Medicaid Services (CMS) Medicare Coordinated Care Demonstration (MCCD), targeting chronically ill seniors at moderate to high risk for adverse health outcomes.

- Based on the projected impact on quality and patient safety, a Richmond-based risk purchasing group (for medical malpractice insurance) requires its members to become MedVirginia Solution users.

These examples highlight MedVirginia's commitment to the core principles of the National HIT objectives, including facilitating the "accurate, appropriate, timely and secure exchange of health information" and providing "information that follows the consumer and supports clinical decision making". Participation in the NHIN Cooperative has allowed MedVirginia to more readily implement core HIE capabilities that are consistent with best practices and in compliance with standards. In addition, MedVirginia views the core services and use cases of the NHIN not as independent and unrelated functionalities, but as a synergistic set of activities in which the whole is truly greater than the sum of its parts. As but one example and as mentioned above, MedVirginia is a committed partner of area free clinics. Support to the free clinics cuts across many of the use cases of NHIN – including those in which MedVirginia directly participates – yielding a robust complement of clinical capabilities for participating clinics that rivals those of the typical private practice. These include the provision of resources necessary for medication management and e-prescribing; referral management for specialty care; clinical decision support within the clinic setting; the deployment of culturally sensitive personal health records for poor and uninsured patients; and collaboration with hospital emergency departments to promote continuity-of-care for patients without medical homes.

Discussed below is the value derived from the functionality specifically related to MedVirginia's three use cases.

EHR – LAB Use Case

The timely delivery of lab results is an essential component in any physician's process of clinical decision-making. Clinical decision-making is enhanced even further when lab results are incorporated into a physician's EHR and clinical workflow.

In this project, MedVirginia is building upon its current HIE capabilities by implementing local HIE- and NHIN-based services that will populate lab values from reference labs into EHRs at provider organizations. In addition, we are demonstrating the ability to display lab results in the HIE clinical data system for physicians who do not have an EHR.

MedVirginia *Solution*^{sm} currently receives lab results from four acute care hospitals, two rehabilitation hospitals, and one reference laboratory. Results are incorporated into a patient-centric electronic chart for view by authorized providers. Other clinical data, such as radiology reports, medication histories, discharge summaries and operative notes, are conveniently accessible within the same display as the lab results. Lab results also are "pushed" to the ordering physician and to "copy to" physicians. These results appear in the physician's clinical "inbox". Upon opening the "message" containing the lab result, the physician can take a variety of actions, such as filing the result, forward to another physician for review, or ordering a medication.

The MedVirginia *Solution*^{sm} electronic chart and clinical inbox, as described above, are primarily used by physicians who do not have an EHR. For physicians *with* an EHR, MedVirginia is demonstrating, via this Use Case, the ability to direct lab results into the physician's EHR, for both the ordering physician and those copied on a result.

Normal ranges and critical values are defined by the laboratory and not by MedVirginia. In both the clinical inbox and in the electronic chart, out-of-range results are clearly identified with special icons. When lab results are pushed to a physician's EHR, the laboratory's normal range is also provided in the data transmission.

The functionality developed and demonstrated for this Use Case in the Trial Implementation has widespread market value for MedVirginia's users. Regardless of where a practice resides on the IT adoption continuum, the functionality will support enhancements in both efficiency and quality.

Content Specifications for the Authorized Release of Information to a Trusted Entity Use Case (SSA)

MedVirginia believes that the SSA Use Case represents an opportunity to leverage local and national HIE capabilities to deliver value-added services for providers, Social Security claimants, and the SSA.   We are demonstrating secure, efficient workflows that will allow the SSA to accelerate the disability determination process while reducing administrative burden on providers. More specifically, MedVirginia is assisting the SSA to achieve the following improvements:

- Reduce U.S. Mail portions of the process, replaced with electronic communications
- Streamline "authorization" process for access to information
- Streamline collection and compilation of available medical evidence

Our approach to the SSA Use Case is to leverage our operational HIE and data-rich clinical repository in a manner that utilizes NHIN interfaces, data exchange protocols, user authentication, and subject discovery transactions. This functionality will be utilized in moving rapidly to full production, thereby realizing the benefits articulated above.

Medication Management Use Case

The Medication Management Use Case is in close alignment with MedVirginia's efforts to create a safer, higher quality, and more efficient healthcare system. Even as medications have become an increasingly important component in the physician's armamentarium, so too have concerns increased regarding safety and cost. This is particularly true for patients suffering from chronic disease and who are on multiple prescriptions written by multiple providers.

As stated in the Use Case Description, medication management can be improved through increased information exchange. This will result in benefit for patients, clinicians, pharmacists, and payers. With its extensive user base and clinical partners, MedVirginia is uniquely positioned to positively impact medication management. MedVirginia's approach to enhancing medication management is built on a patient-centric, community-wide, and consolidated medication history database. This medication history supports: (1) the integration of all of a patient's medications, regardless of prescriber; (2) the application of clinical decision support to identify potential adverse drug events; and (3) the implementation of workflow tools that improve the efficiency and effectiveness of medication management. This medication history is accessible in both the inpatient and ambulatory settings.

The NHIN Trial Implementation ensures that MedVirginia's work in Medication Management is consistent with industry best practice.

Additional Functionality – Consumer Engagement

Much of MedVirginia's early focus has been on providing meaningful data and functionality to providers. Over the past year, the organization has also spent quite a bit of time developing strategies for consumer engagement. The Trial Implementation has provided MedVirginia an opportunity to further enhance its technical approaches to consumer engagement, as well as, define best practices for policy and standards development. We are now prepared to move forward with integration of personal health records and secure messaging as part of our core services.

> **Governance** – Describe how the trial implementations informed your governance efforts or fits within your governance process. Identification / inclusion of future governance issues that need to be addressed is appropriate.

Since its inception, MedVirginia has utilized an open and participatory governance process to support its community-based health information exchange (MedVirginia *Solution*^{sm}) by including a broad range of stakeholders from across the healthcare community in its decision-making processes. MedVirginia's ability to bring all of these important healthcare representatives to a common table to discuss and create a functional HIE has been one of the keys to our success.

When MedAtlantic, CenVaNet, and Central Virginia Health Network (through its ownership of CenVaNet) initially partnered in the late 1990s to begin discussing the need to bring a functional HIE to Richmond, they discussed the various corporate structures and governance models that could be used to accomplish this. After evaluating numerous models, they decided that instead of using an existing company as the vehicle for creation of an HIE, they should form a subsidiary company whose sole mission would be to support the development, operation and long-term sustainability of an HIE technology platform. This led to the formation of MedVirginia.

As a private enterprise, MedVirginia has approached HIE development in a disciplined, results oriented fashion placing a premium on real world solutions that will enhance the exchange of relevant clinical information. As MedVirginia is a closely held company rather than a publicly traded corporation, it can focus on intermediate term development and is not hostage to the pressure of providing a "profit" to satisfy investors. This combination of entrepreneurial discipline and the ability to invest in systems development has allowed MedVirginia to succeed where many other well-intentioned initiatives have failed.

MedVirginia is directly accountable to its members to demonstrate tangible success in implementing the HIE. This accountability is monitored through traditional business

governance mechanisms like member and manager meetings, and quorum and voting requirements.

In addition to traditional business governance, which is by necessity a proprietary function, the Members also thought it important to have an open, transparent and participatory governance process that would make MedVirginia accountable to the community because the HIE is a community utility. MedVirginia's community governance mechanisms include the use of advisory boards, councils, work groups, teams, and committees.

MedVirginia recognized that there are many other healthcare participants whose opinion, guidance, and expertise would be necessary to develop a successful community HIE. To obtain input from these important stakeholders, MedVirginia created the Community Advisory Board. The twenty-four members of the Advisory Board represent a wide array of healthcare participants. While all are important contributors to the recommendations of the Advisory Board, there are a few who deserve special mention. The Chair of the Advisory Board is Michael Matthews, CEO of MedVirginia. The Advisory Board is also fortunate to have the Honorable Louis W. Sullivan, M.D., as a member. Dr. Sullivan is the former U.S. Secretary of Health and Human Services whose early push for interoperability led to the creation of the Workgroup for Electronic Data Interchange (WEDI). The Advisory Board has representatives from the Virginia Department of Health and the statewide Quality Improvement Organization (QIO). Other providers represented on the Advisory Board include pharmacists, physicians, and safety net providers. In addition to representing providers, the Advisory Board also has payer representation from both local employers and Virginia's largest health insurer, Anthem BCBS.

The Management Board and the Members take the recommendations from the Advisory Board into consideration when making decisions for MedVirginia. Their feedback regarding expanded use of *Solution*[sm] for quality improvement and public health purposes is particularly valuable. For example, in 2006, the Advisory Board recommended that the free clinics and safety net providers be an area of focus for MedVirginia. This recommendation led to the development of an "IT roadmap" for this important group of community providers. This "roadmap" has served as a catalyst to rapid deployment of IT capabilities, including the implementation of new practice management systems, participation in MedVirginia's secure message and results reporting functionality, and the commitment to a pilot in e-prescribing.

Subsequent to the selection of MedVirginia for participation in the Nationwide Health Information Network (NHIN) Trial Implementation, MedVirginia reviewed the contract deliverables with the Advisory Board to gain their input. The quality of engagement was such that the duties of the Advisory Board were expanded to include input to NHIN and service as the NHIN Steering Committee. This additional responsibility was unanimously approved by the Advisory Board in February 2008.

Overall, the NHIN Trial Implementation has been valuable to these governing and advisory bodies. MedVirginia's Board Chair, Dr. James Ratliff, has been very engaged with the Trial Implementation and attended the AHIC demonstration in September. In addition, he will be leading the EHR-Lab Demonstration for the MedVirginia in December. These experiences have provided critical context for MedVirginia's role as a community-based HIE, deepening the understanding of importance of industry best practices and compliance with NHIN standards. Likewise, the Wounded Warrior scenario has been very extensively discussed by our governing and advisory boards, and there is a strong commitment to make this area of work a strategic and developmental priority. Perhaps most importantly, participation in the NHIN Trial Implementation has provided these boards with additional assurances that the MedVirginia HIE is on the right track, technically and procedurally. The Board of Managers and Advisory Board are deeply grateful for the organization's participation.

> **Operational Efficiencies** – Describe how the NHIN trial implementations may contribute to operational efficiencies as you continue to grow and build your data exchange connections.

The NHIN Trial Implementation contributes to operational efficiencies in a number of areas. Clearly, the adoption of uniform standards reduces the costs of both implementing interfaces as well as maintaining interfaces. The collaborative approach to policy and standards development has enabled our organization to "share the load" with ONC and other NHIEs.

> **Feasibility and fit in the emerging market** – Describe how the NHIN trial implementations addressed the feasibility of the NHIN and how nationwide data exchange fits in the emerging market, nationally and for your immediate stakeholder community.

MedVirginia recognizes that inter-HIE data exchange (across geographic jurisdictions) has more practical value for some than others. However, the capabilities so developed have significant value for a number of strategic priorities. For example, the SSA use case offers a near-term production opportunity that benefits all stakeholders – SSA, the patient/beneficiary, and the providers. The ability to exchange data with the VA and DoD is of critical importance to the Commonwealth of Virginia. In MedVirginia's current service area, the McGuire VA Medical Center can be integrated in our community HIE exchange, giving providers a consolidated view of the patient's clinical data. There are also discussions with the DoD, VA and civilian health systems in the Hampton Roads region regarding the feasibility of clinical data exchange. The infrastructure and policy framework of NHIN will prove most valuable in both these initiatives.

The MedVirginia Business Plan discusses the strategic framework within which NHIN will fit on an ongoing basis. Projections at this point indicate that NHIN is financially feasible. The organization will assess specific applications of NHIN – such as with the SSA and VA/DoD – to determine areas of future investment and support.

Stakeholder satisfaction – Describe how the trial implementations and the NHIN affect your stakeholders' satisfaction. Prioritization of future services / capabilities and how that would increase stakeholder satisfaction is appropriate.

From its inception, MedVirginia has been committed to bringing value and satisfaction to our many stakeholders. Key to such value and satisfaction are having complete and accurate data; functionality that leads to greater efficiency and effectiveness; and participation that reaches critical mass of adoption and use.

The NHIN Trial Implementation has contributed to success in each of the above areas. There is a significant opportunity for a more extensive set of clinical data, such as medication histories and VA/DoD clinical summaries. Functionality has been enhanced as well, particularly in the areas of medication management and integration of labs into EHRs. We also recognize that participation in NHIN brings with it enhanced credibility for the organization, thereby leading to opportunity for increased participation by both data suppliers and data users. Our involvement has helped to "demystify standards" with our current and potential local data suppliers, which increases our credibility and helps ease the establishment of a true community record.

MedVirginia's participation in the NHIN Trial Implementation serves as a benefit to early-adopters of physician EMRs in the market. Currently, the more technologically advanced practices are looking to improve the inter-practice communication. Our ability to provide additional data sources, or to connect across the NHIN to other communities, is both real and perceived value to the physician EMR user. Because of our active participation in the NHIN, physicians are not having to wait on local adoption and EMR penetration to appreciate external benefits of automation.

Future services and capabilities follow naturally from the work accomplished to date. In particular, interoperability with the VA/DoD, full production with SSA, and incorporation of consumer tools such as PHR and secure messaging all directly benefit from our work in NHIN.

It should also be noted that MedVirginia has an ongoing commitment to quality, performance and user satisfaction. These quality measurement and improvement processes are essential to ensuring stakeholder satisfaction. As indicated, NHIN performance is incorporated into these processes. Current processes include:

- System performance (e.g., uptime, message rejection rate)
- Help desk activity (calls / help tickets)

- System utilization (users, user retention, logins, chart views)
- User training satisfaction
- Audit logs
- Regulatory compliance reviews
- Data suppliers (number and satisfaction)

> **Perceived value** - Describe how the trial implementations have helped advance your organization's goals, strategies and plans for the future.

As described above, the NHIN Trial Implementation is very significant with MedVirginia's goals, strategies and plans for the future. That was the basis for MedVirginia's strong commitment to NHIN in our original proposal, and continues to be our motivation for maximum participation.

Benefits are both tangible and intangible, and have been discussed extensively in this response document. These can be generally grouped into the following categories: functionality; trading partner readiness (e.g., VA/DoD); credibility with internal and external stakeholders; identification and integration of industry best practices; and future business opportunities.