

STRATEGIC AND OPERATIONAL PLAN

July 30, 2010

TABLE OF CONTENTS

STRATEGIC PLAN

S.1	Introduction	4
S.2	Environmental Scan	6
S.3	HIT Adoption	11
S.4	HIE Development and Adoption	14
	S.4.1 WVHIN Vision	15
	S.4.2 WVHIN Mission	16
	S.4.3 WVHIN Guiding Principles	17
	S.4.4 WVHIN Services and Functionality	18
S.5	Medicaid Coordination	22
S.6	Coordination of Medicare and Federally Funded State Based Programs	26
S.7	Participation with Federal Care Delivery Organizations . .	30
S.8	Coordination with Other AARA Programs	32
	S.8.1 Regional HIT Extension Centers	33
	S.8.2 HITECH Workforce Training.	33
	S.8.3 Broadband Technology Opportunities	34
	S.8.4 DOL: Employment and Training Program	35
	S.8.5 HRSA Bureau of Health Professions (BHP)	35
S.9	Governance Model	35
	S.9.1 Collaborative Governance Model	35
	S.9.2 State Government HIT Coordinator	39
	S.9.3 Accountability and Transparency	40
S.10	Finance	42
	S10.1 Sustainability	42
S.11	Technical Infrastructure	46
	S.11.1 Interoperability	46
	S.11.2 Technical Architecture/Approach	47
	S.11.3 Master Patient Index (MPI) Management	52
S.12	Business and Technical Operations	53
	S12.1 Implementation	53
S.13	Legal/Policy	57

S.13.1 Privacy and Security	57
S.13.2 State and Federal Laws	59
S.13.3 Policies and Procedures	60
S.13.4 Trust Agreement	61
S.13.5 Oversight of Information Exchange and Enforcement	62

OPERATIONAL PLAN

O.1 Introduction	63
O.2 Coordination with ARRA Programs	65
O.3 Coordination with Other States	67
O.4 Governance	70
O.4.1 Governance and Policy Structure	70
O.5 Finance	73
O.5.1 Cost Estimates and Staffing Plan	73
O.5.2 Controls and Reporting	82
O.6 Technical Infrastructure	84
O.6.1 Standards and Certifications	84
O.6.2 Technical Architecture	85
O.6.3 Technology Deployment	90
O.7 Business and Technical Operations	96
O.7.1 Current HIE Capacities	97
O.7.2 State Level Shared Services and Repositories ...	100
O.7.3 Standard Operating Procedures for HIE	102
O.7.4 Approach for Monitoring/Plan for Remediation of HIE Performance	103
O.8 Legal/Policy	103
O.8.1 Established Requirements	103
O.8.2 Privacy and Security Harmonization	106
O.8.3 Federal Requirements	107
O.9 Outcomes and Performance	108
O.10 Planning	109
O.11 Training and Technical Assistance	109
O.12 WVHIN Gap Analysis	110

APPENDICES

All Appendices can be viewed at:

<http://www.wvhin.org/Appendices/Pages/default.aspx>

- A. West Virginia Health Information Technology Readiness Final Report
- B. Existing Broadband Capabilities and Unmet Demand for West Virginia Health Care System
- C. WV Health Information Technology Statewide Strategic Plan
- D. WVHIN Code
- E. Community Outreach Plan Overview - NEW
- F. WV Privacy and Security Framework
- G. Legal Opinion Letter
- H. WV-96
- I. Side by Side Analysis - NEW
- J. Mental Health Records - NEW
- K. Project Organizational Structure – NEW
- L. WVHIN Project Plan – NEW
- M. Privacy and Security Framework Best Practice Recommendations – NEW
- N. HITECH Act Implications for HIE - NEW

STRATEGIC PLAN

S.1 Introduction

According to the *eHealth Initiative's Sixth Annual Survey of Health Information Exchange 2009*, there are almost 200 self-reported Health Information Exchange (HIE) initiatives across the country with a substantially increased number of organizations that reported being operational. The impetus for HIEs has increased as a result of the passage of the American Recovery and Reinvestment Act (ARRA) of 2009 and specifically key provisions from the Health Information Technology for Economic and Clinical Health (HITECH) Act. These provisions called for the Office of the National Coordinator (ONC) to create a program to engage in collaborative agreements with states or "qualified" state-designated non-profit, multi-stakeholder partnerships to "conduct activities to facilitate and expand the electronic movement and use of health information among organizations according to nationally recognized standards."

Today, in West Virginia, despite progress in the adoption of electronic health records (EHR) within health care organizations, there are few, if any, operational health information exchanges providing longitudinal health information. While West Virginia shares many barriers and challenges with other states, it also has unique strengths and opportunities that can be leveraged to ensure success.

The West Virginia planned HIE has the basic objective of ensuring care providers have access to patient history before clinical decisions - an objective that is at the heart of the HIE movement. While EHRs focus on helping providers make the transition from paper to online record keeping, HIE focuses on moving these digital health

records through the fragmented health care system quickly so that as patients move through the system, clinical information is available at the point of care. The HIE envisioned for West Virginia will improve the quality of clinical outcomes through better coordination of patient care, reduced costs associated with the delay of patient data, and reduced fragmentation.

The West Virginia Health Information Network (WVHIN) is well positioned to provide a cost-effective HIE infrastructure that benefits from economies of scale while enabling communities to develop their own unique solutions. As a convener and collaborator, the WVHIN will build bridges among healthcare stakeholders to launch and fund a statewide HIE. It will help communities address complex issues such as setting standards for interoperable data exchange, considering liability risks, setting policies for privacy and security, and exchanging data across state lines. It will collaborate with other health information technology (HIT) and HIE initiatives to leverage collective resources.

The WVHIN is a public/private partnership created by the West Virginia Legislature in 2006. The intent of the legislation was for the WVHIN “to promote the design, implementation, operation and maintenance of a fully interoperable statewide network to facilitate public and private use of health care information in the state”. With this authority, the WVHIN established a multi-stakeholder board and has been working with its stakeholders to develop and implement a state-level HIE.

The WVHIN is a public/private partnership that receives administrative support from the West Virginia Health Care Authority (HCA), and HCA is an autonomous agency of West Virginia Department of Health and Human Resources (DHHR). DHHR, WVHIN, the Bureau for Medical Services (Medicaid), the Governor’s Office

of Health Enhancement and Lifestyle Planning (GOHELP), and the West Virginia Health Improvement Institute (WVHII) are working together to coordinate efforts to achieve the goals and objectives of the state HIE.

S.2 Environmental Scan

West Virginia needs and is ready for the formation of a state-level HIE. There are 1.8 million people in this geographically diverse and highly rural state with a high level of elderly and low-income individuals in many of the rural areas. With a geographically dispersed population, access to and coordination of care is a critical issue. At the same time, there is a growing base of EHR users among hospitals, physicians, clinics, other providers and HIE/HIT initiatives. Finally, there is growing momentum among key stakeholders to ensure that the WVHIN is funded and launched.

To serve this rural population, there is a relatively high number of hospitals with less than 100 beds and a high level of clinics serving the underserved. This environment makes access to care and care coordination both difficult and essential. Based on the population profile and the number of small providers, a strong case has been made for the need for a statewide HIE, which will help providers overcome communication and geographic barriers to access and coordination of care.

In 2008, a survey to determine HIT and HIE development and adoption entitled, *West Virginia Health Information Technology Readiness Final Report (Appendix A)*, was conducted by Shepherd University Research Corporation (SURC) and KRM Associates, Inc. The scan, commissioned by Medicaid through Medicaid Transformation Grant funding, was comprised of a series of surveys to help assess the

HIT landscape and readiness across the state. Likewise, in 2009, another survey, *Existing Broadband Capabilities and Unmet Demand for West Virginia's Health Care System (Appendix B)*, was conducted by KRM Associates, Inc. and the West Virginia Health Care Authority. This survey built upon findings from the 2008 *West Virginia Health Information Technology Readiness Final Report*. Both reports discuss HIT and HIE adoption by physicians, clinics, health departments, and hospitals across the State of West Virginia.

According to the *Existing Broadband Capabilities and Unmet Demand for West Virginia's Health Care System* report, conducted by KRM Associates, Inc. and the West Virginia Health Care Authority, 23% (7) of the West Virginia hospitals surveyed indicated they are participating in a Regional Health Information Organization (RHIO) or Health Information Network (HIN). The 2009 data shows that West Virginia's providers and healthcare organizations are adopting and using HIT, however progress in this area still needs to occur:

- 21% of clinics and county health departments have implemented or begun implementation of EHR systems
- 44% of physicians have an EHR system
- The number of hospitals operating and fully utilizing an EHR system is less than 50%.
- VA Hospitals are using the Federal Health Information Exchange (FHIE) to exchange data with the Department of Defense (DoD) hospitals
- 64% of the hospitals use teleradiology
- 54% of hospitals report having T-1 or T-3 Internet connectivity

- Only half of the small physician offices reporting have a Practice Management System
- 18% of small physician offices reported currently using teleradiology
- Almost all physicians have an Internet connection

Furthermore, a 2009 SureScripts report shows that 946 physicians utilized e-prescribing which is 34% of WV physicians; 436 community pharmacies utilized e-prescribing which is 88% of the pharmacies and 1.05 million physician prescriptions were filled electronically which is 90% of the physician total.

The State of West Virginia recently received \$126 million of federal stimulus funds for the Statewide Broadband Infrastructure Project. These funds will be used to expand broadband across West Virginia and will broaden the state's health information technology infrastructure. In addition, the West Virginia Telehealth Alliance (WVTA) is participating in the FCC's Rural Health Care Pilot Program. As such, the WVTA was awarded \$9.7 million in state and federal funds to improve broadband connectivity among eligible health care entities in the state.

The WV Health Improvement Institute (WVHII), WV Medical Institute (WVMI) and the WV Community Health Network (CHN) recently received \$6 million to fund the West Virginia Regional Health Information Technology Extension Center (RHITEC). WVHIN and the West Virginia RHITEC are currently collaborating to promote certified EHR adoption and ensure health information is interconnected throughout the state through HIE. The WVHIN is also partnering with the WVU Center for Health Ethics and Law to establish a statewide advance care planning document electronic registry accessible 24 hours a day to all emergency

services and health care providers. The WVHIN will make the advance care planning document registry available on its portal which will be easily accessible to providers for obtaining up-to-date documents within the registry.

HIE is also a main component of the *West Virginia Health Information Technology Statewide Strategic Plan (Appendix C)*, which WVHIN leadership contributed to developing through a collaborative process with other stakeholders representing governmental and non-governmental healthcare organizations in West Virginia. The plan recognizes that ensuring a viable and robust exchange which supports the flow of information across the healthcare system is an essential component of West Virginia's HIT vision for the future. The diagram below outlines the vision of West Virginia's HIT Plan and the supporting activities that must take place to fulfill this vision.

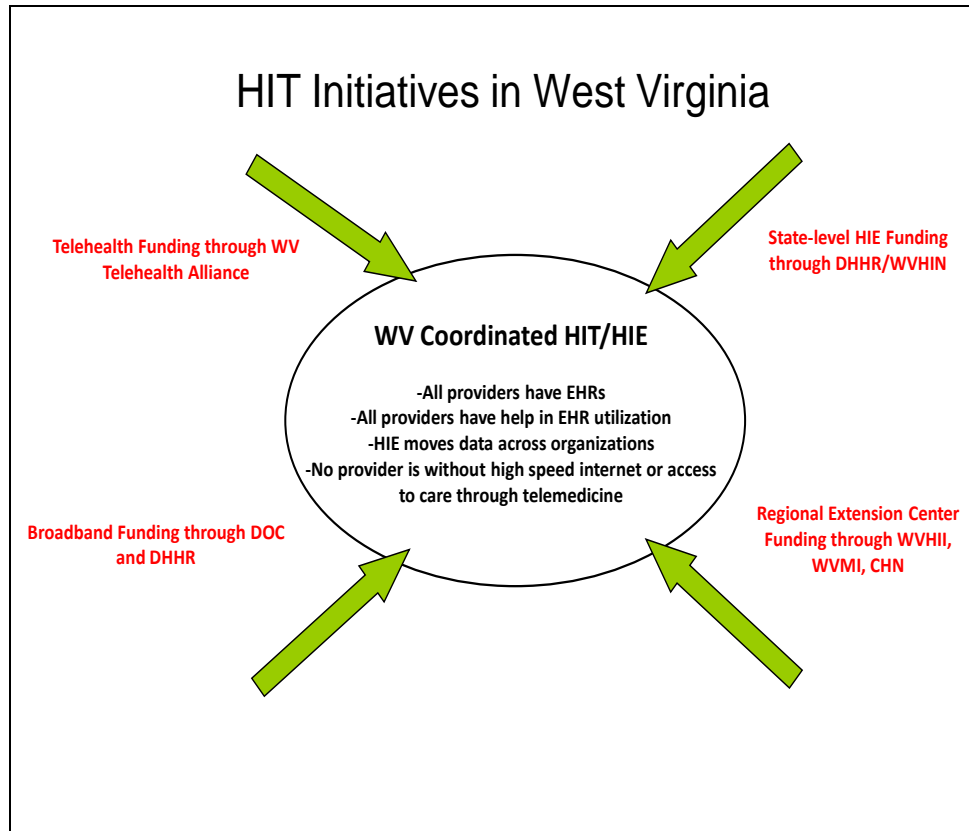
Vision: **This vision** for the health information system strategic plan is to ensure a coordinated information technology infrastructure and a delivery system is established that allows patients, families, communities, and the health care system to collaboratively partner to improve the health and well being of all West Virginians.

Accelerate The Adoption of HIT	Foster Health Information Exchange	Ensure Broadband Infrastructure	Create Useable and Accessible State-Wide Data	Develop the Work Force	Ensure Financial Viability & Sustainability
<ul style="list-style-type: none"> -Accelerate adoption of EHRs -Serve as a Regional Extension Center for HIT -Encourage Reimbursement System to Promote Use -Encourage Adoption of Tele-health Technology -Telemedicine -Encourage e-Prescribing -Encourage Patient Health Records -Standards 	<ul style="list-style-type: none"> -State Institutions as Early Adopters -Clinical Messaging -Coordinated Care -Improve Quality and Value 	<ul style="list-style-type: none"> -Complete a Broadband Inventory to Identify Gaps and Needs -Establish a Budget for Tele-Health Alliance -Align Reimbursement to Create Local Business Case -Work with the Vendor Community to Encourage Local Investments 	<ul style="list-style-type: none"> -Leverage MITA to establish State Data Infrastructure -Encourage Adoption of National Standards -Establish Security Protocols -Encourage Voluntary Reporting by Payers - Encourage Voluntary Reporting by Providers -Provide Transparency -Drive Improvement in Key Areas Using Data 	<ul style="list-style-type: none"> -Establish a Regional Extension Center -Establish a Centralized Technical Help Desk for Provider Support -Recruit and Retain Health IT Professionals 	<ul style="list-style-type: none"> -Leverage Federal Partnerships (MITA/CMS/ONCHIT /ARRA) -User Feeds and Aligned Reimbursement to Support the Use of Technology -State Role in Driving Technology

Through WVHIN's outreach activities, WVHIN leadership continues to generate interest in HIE participation from healthcare providers, payers, Medicaid, and other key stakeholders. Several large hospitals in West Virginia have shown interest in becoming WVHIN's first pilot. However, the Wheeling Medical Referral Region (MRR) has been identified as a focus area for WVHIN's first pilot due to its progressive use of technology and strong provider network relationships.

S.3 HIT Adoption

Specific detail regarding HIT adoption by WV providers can be found in the Environmental Scan section of this plan. Advancing the adoption of HIT across the state of West Virginia is the primary goal of many initiatives across the state. The diagram below depicts some of the organizations within West Virginia which are ensuring a coordinated state response to HIT/HIE.



In addition to the initiatives depicted in the diagram above, other key WV HIT accomplishments include:

- The Community Health Network (CHN) of West Virginia was a Health Resources and Services Administration (HRSA) Integrated Services Delivery Network grantee for the purpose of adapting the VistA-RPMS EHR in a non-federal primary care environment.
- The West Virginia Telehealth Alliance (WVTA) is one of 69 organizations across the U.S. that is participating in the FCC's Rural Health Care Pilot Program. As such, the WVTA will have approximately \$9.7 million in state and federal funds to improve broadband connectivity among eligible health care entities in the state.

- The state received five Transformation Grants from the Centers for Medicaid and Medicare Services (CMS), which represents the largest award given. These grants are being used to address the health information technology needs of the State Medicaid Program.
- The West Virginia Medical Institute (WVMI) has been participating in a national effort entitled Health Information Security and Privacy Collaborative (HISPC). WVMI and WVHIN were designated by Governor Joe Manchin in 2006 to participate in this multi-state collaborative to address the privacy and security concerns with EHR/HIT.
- West Virginia has participated in the National Governor's Association e-Health Alliance that is an initiative designed to improve the nation's health care system through the formation of a collaborative body that enables states to increase the efficiency and effectiveness of the HIT initiatives they develop.
- West Virginia participates in the National Committee on Vital and Health Statistics that serves as the statutory public advisory body to the Secretary of Health and Human Services in the areas of population health, privacy, security, quality, standards, electronic health records, personal health records, health information exchange and the Nationwide Health Information Network (NHIN).
- The WVHIN is a NHIN contractor, for a second year. This contract is valued at \$3,365,822.

WVHIN leadership continues to meet with hospital executives and providers throughout West Virginia to gauge interest in exchange, WVHIN functionality, and identify connectivity needs. Additionally, the WVHIN and the WV RHITEC will advance physician adoption of certified EHRs and encourage participation in the WVHIN. Once WVHIN chooses its technology vendor, the vendor will also work with physicians and hospitals to identify connectivity needs and requirements for HIT as part of the WVHIN's emerging services.

S.4 HIE Development and Adoption

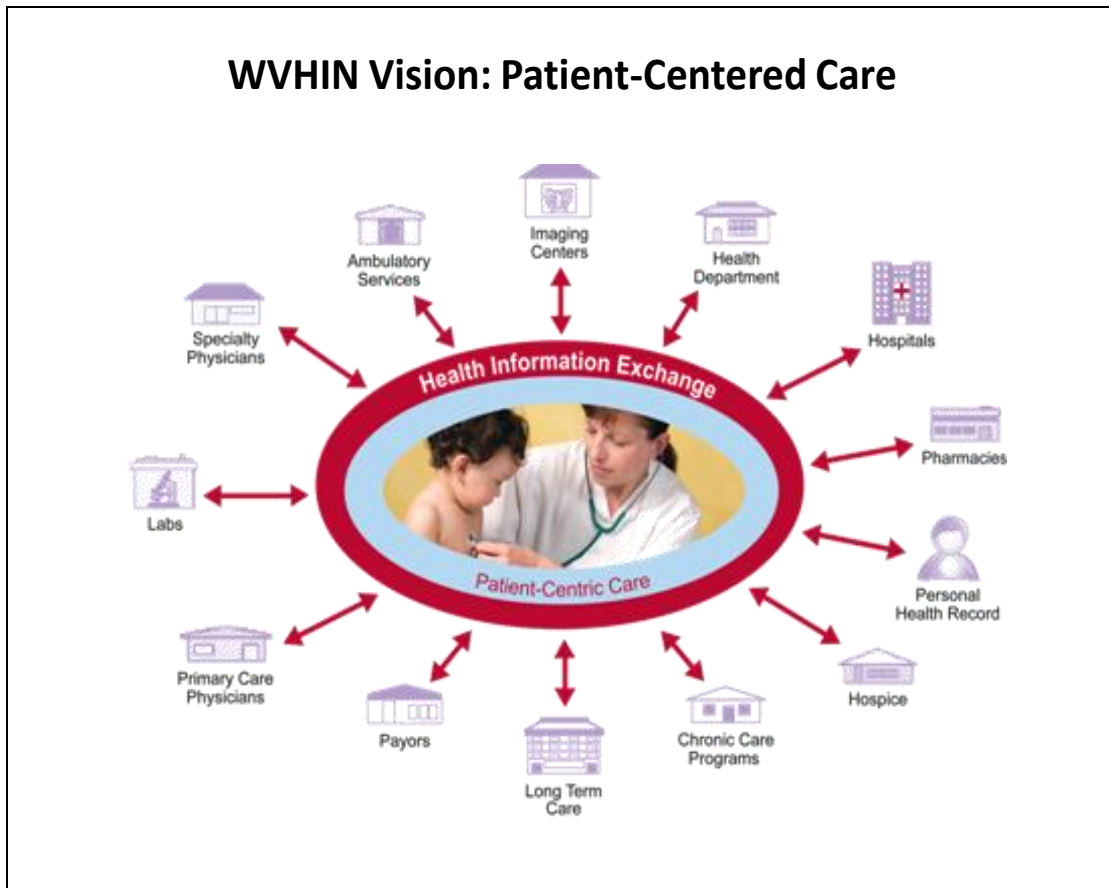
Currently, critically important patient data is often fragmented and residing in silos that do not communicate with each other. The WVHIN's HIE will connect providers and others electronically to enable clinical information and administrative data to be shared between organizations. The WVHIN will provide the interoperability necessary to enable secure exchange of information and will oversee access to health care data to transform health care in West Virginia through improved quality and value.

Since its inception, WVHIN has reached out to physicians, hospitals, diagnostic laboratories, health plans, public health entities, and care providers across the healthcare spectrum in an effort to provide education on HIE and discuss its importance in improving West Virginia healthcare. Thus, the WVHIN has ensured that the interests of its stakeholders have been incorporated into its planning efforts thus far. A broad range of stakeholders have been engaged in the WVHIN planning process through the WVHIN Board, WVHIN's and RHITEC's Physician Advisory Council, WVHIN's Finance Committee, and WVHIN's Request for Proposal (RFP) task forces which represented around 60+ key stakeholders from across the state. The RFP task forces

established WVHIN's RFP requirements in the areas of data standards, functionality, privacy and security, and technology. WVHIN also had over 20 stakeholders participate in reviewing and scoring vendor product demonstrations.

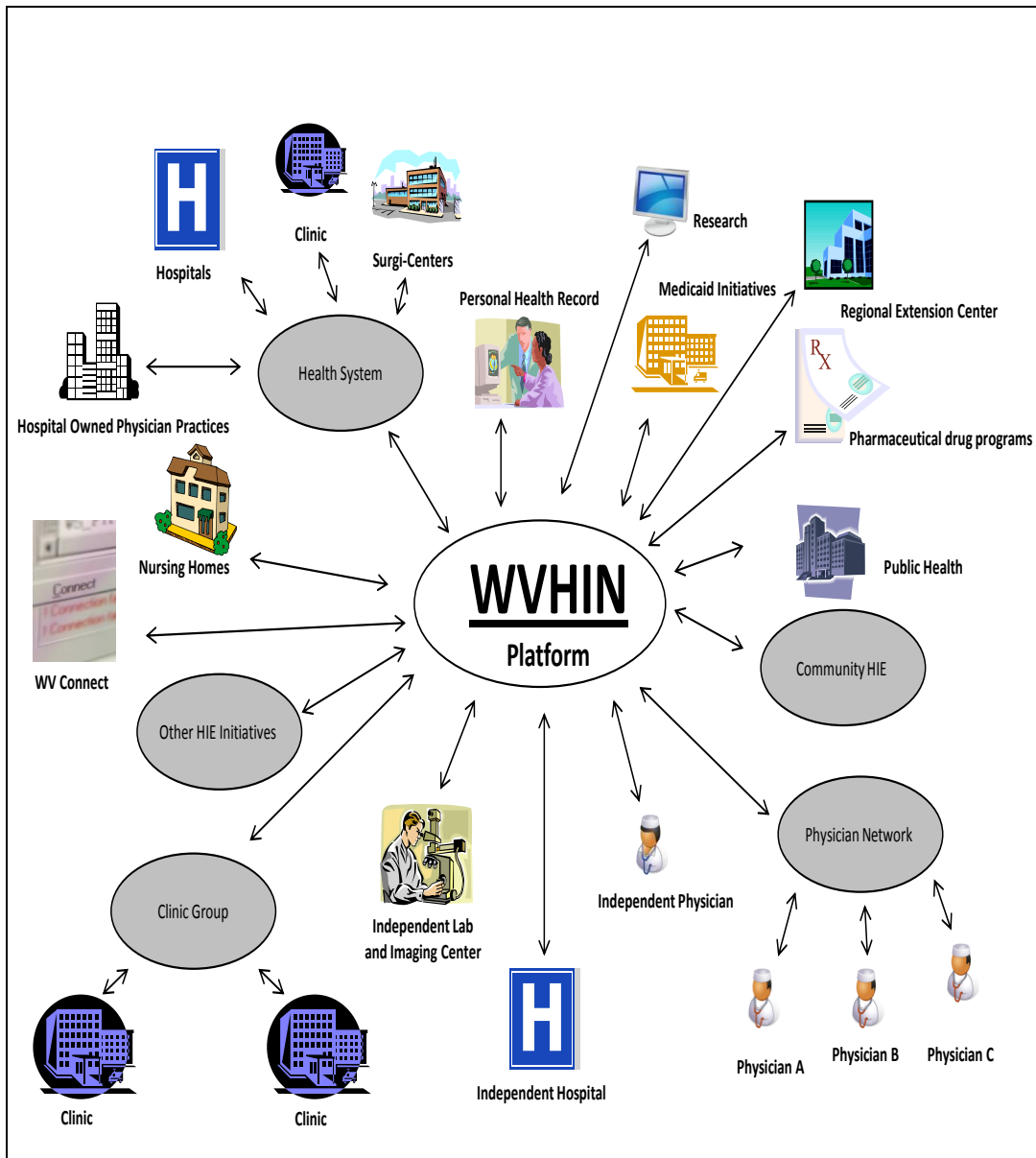
S.4.1 WVHIN Vision

High quality, patient-centered care facilitated by health information technology.



S.4.2 WVHIN Mission

The West Virginia Health Information Network provides the health care community a trusted, integrated and seamless electronic structure enabling medical data exchange necessary for high quality, patient-centered care.



S.4.3 *WVHIN Guiding Principles*

To achieve its mission, the WVHIN abides by the following guiding principles:

- **Collaboration** – The WVHIN works in collaboration with private/public partners, providers, other health care stakeholders, and consumers.
- **Facilitation of Patient-centered care** – Authorized clinicians have access to available information at the point of care regardless of where the patient has been seen or where the physician is located. Data movement will ease utilization of health care systems by consumers, providers and all related support entities.
- **Participation by all providers** – All providers have access to affordable solutions regardless of location.
- **Quality improvement** – The provider and payer communities have access to tools to improve the quality and efficiency of care through greater access to data over time and improved data analysis tools (e.g. e-prescribing, chronic disease management).
- **Patient participation** -- The patients, over time, have access to information and electronic tools enabling them to take responsibility for their own care and wellness along with their physician.
- **Privacy and Security** – Patients are assured that their personal data is held private, confidential and secure in accordance with HIPAA and other state and national requirements.
- **Sustainability** – The WVHIN achieves financial viability through fair and reasonable support from stakeholders.

S.4.4 WVHIN Services and Functionality

In order to meet the Meaningful Use requirements, the WVHIN revised its original three-phased pathway to an approach that focuses on addressing stakeholder priorities for HIE services and functionalities **that will allow stakeholders to meet Meaningful Use**. The WVHIN is focused on providing the needed functionality to stakeholders when they want it – tools that will enable providers to meet Meaningful Use. For example, a physician office that may want to have the functionality to electronically check patient insurance eligibility and file claims would have the option to access this functionality through the WVHIN. A hospital, on the other hand, may want to access the inquiry functionality through the WVHIN. A community pharmacy which may not be able to receive prescriptions electronically will benefit from WVHIN's e-prescribing functionality. The WVHIN will ensure that pharmacies which are not able to connect will at least be able to receive e-prescribing notification via fax.

A broad segment of WVHIN stakeholders have evaluated vendor demonstrations of the functionality that was published in WVHIN's 2009 RFP. This functionality includes:

- **Clinical Messaging** – using secure, electronic tools to enable results and reports to be transmitted electronically from data senders to data receivers (e.g. clinical laboratory results).
- **Referrals** – using the WVHIN's connectivity to share information between multiple inpatient and ambulatory providers.
- **Inquiry** – to enable clinical information about a patient to be accessed electronically by authorized providers (e.g. sharing patient care summaries across disparate healthcare organizations).

- **E-prescribing** – WVHIN’s solution will enable it to connect to certified EHRs which will support e-prescribing functionality. WVHIN recognizes it may need to provide connectivity to existing pharmacies, etc., that cannot currently receive prescriptions electronically and thus will offer e-prescribing through the exchange.
- **Public Health Exchange** – to provide the ability to electronically submit reportable disease and registry information to the West Virginia (WV) Bureau of Public Health and to disseminate public health alerts to WVHIN participants.
- **Electronic Eligibility and Claims Transactions** – to provide the capabilities to check patient insurance eligibility, file claims and conduct other business with payers through a single sign on.
- **Personal Health Records** – to provide patients with tools to participate in coordination of the care and in managing their health.
- **Encounter Recording** – to provide physician practices with capacity to document patient encounters electronically and to update key data elements through an application that provides some EHR-like modules that meet the requirements of Meaningful Use.
- **Computerized Patient Order Entry** – WVHIN’s solution will enable it to connect to certified EHRs which may include CPOE functionality.
- **Registry Tools** – WVHIN’s solution will provide connectivity to existing registries to help track chronic disease management and preventive services.

- **Clinical Decision Support** – WVHIN’s solution will enable it to connect to certified EHRs which may include clinical decision support functionality.
- **Measurement and Reporting** – initially, ability to track levels of activity and eventually, track outcomes for performance measurement reporting.
- **MPI-RLS** – to manage and link critical patient identification information between disparate health systems.
- **Single Portal** – provides users with the ability to access the WVHIN applications and other applications from multiple institutions (i.e., Medicaid, health plans, public health, etc.) from one device for purchase or at a no charge for download and/or access from the WVHIN portal.

The WVHIN’s stakeholders shaped the functionality and service offerings of the WVHIN. To date, executive leadership from West Virginia University Hospitals, Monongalia General Hospital, Charleston Area Medical Center, Wheeling Hospital, and St. Mary’s Medical Center are participants in WVHIN’s vendor selection process. These key hospitals see value in connecting to the WVHIN in order to minimize their development of multiple costly interfaces and access the needed functionality to meet Meaningful Use. In addition, representatives from physician offices, LabCorp, Mountain State BlueCross BlueShield, Bureau of Public Health, Medicaid, PEIA, and many others are participants in the vendor selection process.

Selection of functionality was based on assisting providers in meeting Meaningful Use as well as the stakeholder demand for the functionality. WVHIN chose this approach because as the state designated entity for health information exchange, it is

imperative that WVHIN be responsive to the needs of our stakeholders by offering functionality that our stakeholders will value and use. This approach is key to helping WVHIN become financially self sustainable because the approach centers on WVHIN providing services that are in demand.

Stakeholders understand that WVHIN is not a competing health system, but a statewide exchange designed to connect existing health systems networks to ensure that West Virginia as a whole achieves Meaningful Use. WVHIN recognizes ONC's goal of enabling providers to meet 2011 Meaningful Use requirements through e-prescribing, exchange of labs, and exchange of patient information. Thus, WVHIN offers all three of these plus numerous other services. WVHIN will place a priority on physician adoption, with the goal of achieving 70% physician adoption by 2012, which will be a key to obtaining financial sustainability.

WVHIN and the WV RHITEC have established a Physician Advisory Council which consists of a unique group of primary care and specialty physicians from all regions of the state. The Council is helping mobilize the physician adoption of EHRs at the community level and encouraging participation in the WVHIN. In partnership with the RHITEC, WVHIN is targeting its awareness, education, and outreach efforts towards primary care physicians initially, including rural health clinics and Federally Qualified Health Centers (FQHC) across the state.

WVHIN leadership continues to meet with hospital executives throughout West Virginia to develop interest in exchange. There have been three (3) initial Medical Referral Regions (MRR's) identified (i.e. Wheeling, Morgantown, Charleston) and these will make up the initial rollout. Wheeling Hospital has agreed to participate as the lead

pilot region with the Hospital taking the lead in efforts to develop the region and get approximately 280 physicians in the area connected to a certified EHR. A signed Memorandum of Understanding is already in place between WVHIN and Wheeling Hospital. Coordination between WVHIN, RHITEC and Dr. Jim Comerici – the leading physician for the medical providers in that region – has already begun.

WVHIN also continues to work with other key stakeholder groups (i.e. payers, Medicaid, public health, etc.) towards promoting exchange and has been successful in obtaining cooperation and collaboration from a diverse group. WVHIN and Medicaid have established a partnership and are committed to working closely together to ensure interoperability among WV's Medicaid Management Information System (MMIS) and the statewide HIE. Medicaid has committed to populating the WVHIN with six years of Medicaid data.

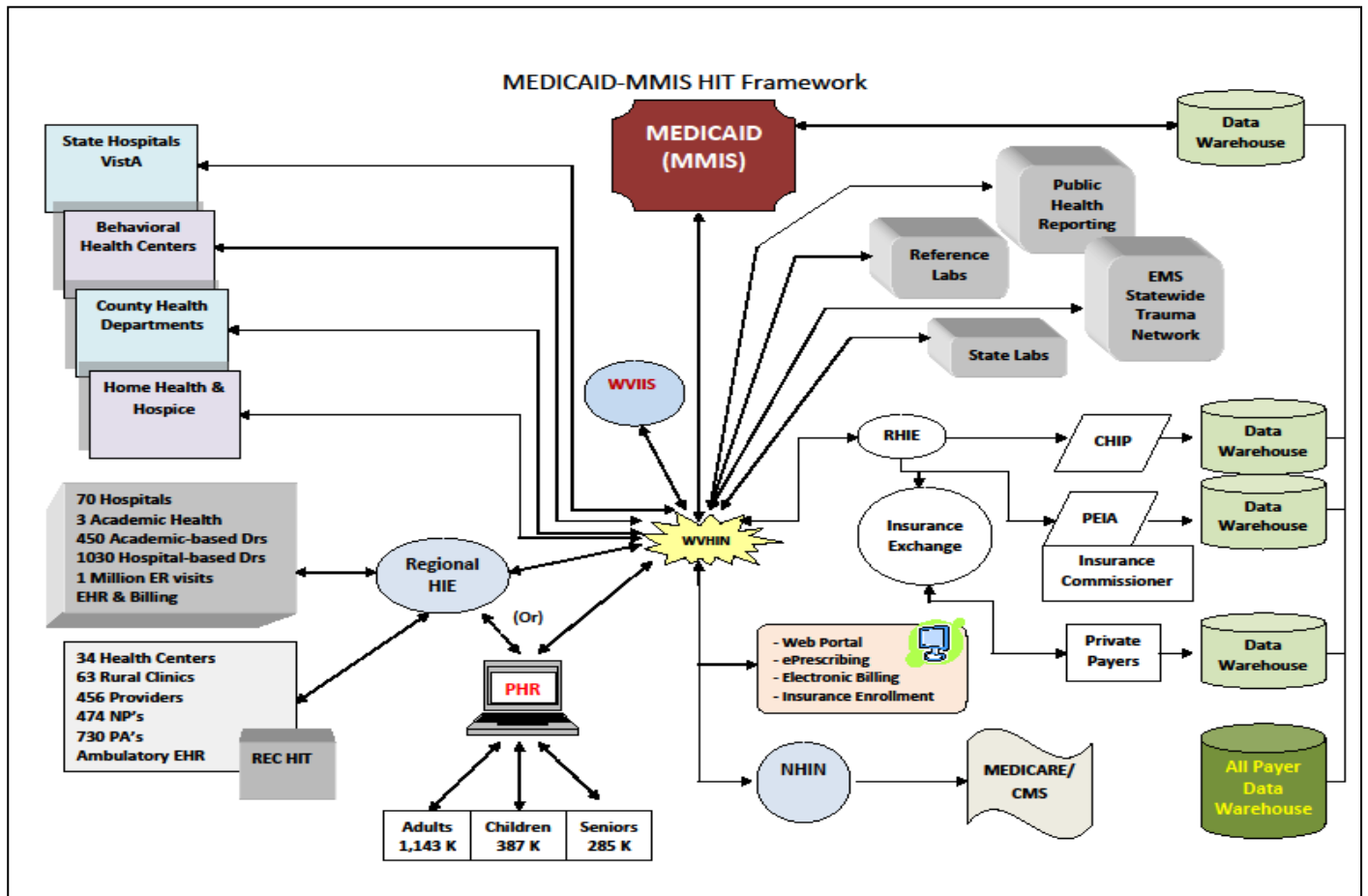
In partnership with WVMI, the WVHIN participated in the national HISPC project. WVMI and the WVHIN worked with a host of partners to assess how privacy and security policies, regulations, and business practices might affect the creation and operation of an interoperable health information network. To ensure consumer input and involvement in the process of health information exchange and electronic health records, WVMI and the WVHIN educated consumers about electronic health records and health information exchange, particularly in the areas of privacy and security.

S.5 Medicaid Coordination

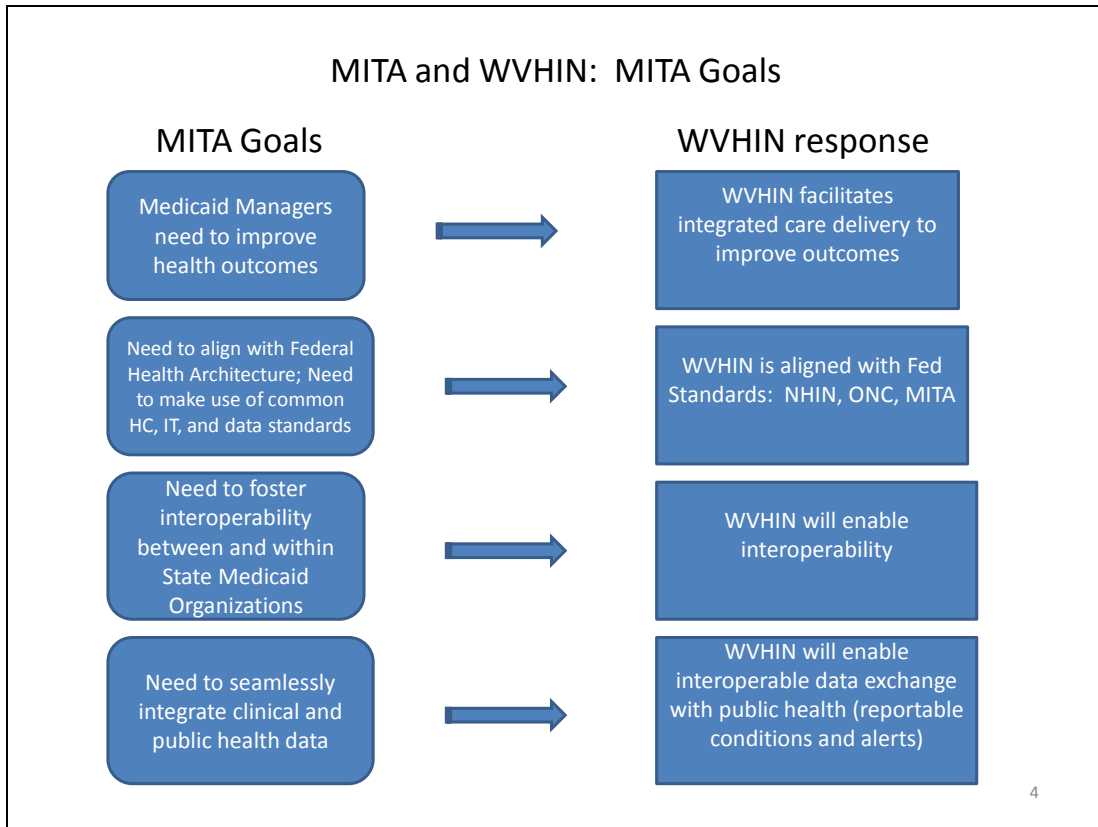
As stated above, WVHIN and Medicaid have established a partnership and are committed to working together to ensure interoperability between WV's MMIS and the statewide HIE. Medicaid is currently planning to implement a new MMIS system

following Medicaid Information Technology Architecture (MITA) Framework. The WVHIN's Chief Operations Officer (COO), Raul Recarey, and Chief Information Officer (CIO), Dennis Belter, are currently working two days a week at Medicaid's offices. Mr. Recarey and Mr. Belter worked with Medicaid on the development of their Health Information Technology Planning-Advanced Planning Document (HIT-P-APD), which has now been approved. Now Mr. Recarey and Mr. Belter are assisting Medicaid with the development of their State Medicaid HIT Plan (SMHP).

More specifically, Mr. Recarey and Mr. Belter are currently working and will continue to work with key Medicaid personnel to determine if Medicaid can leverage the integration, connectivity and networking services that the WVHIN can provide. The WVHIN will also provide advice relating to the new functionality that will be required in the MMIS, such as adding clinical information, enhanced claims processing and data warehousing. The conceptual Medicaid-MMIS HIT Framework envisioned for WV, and how the WVHIN will be leveraged within that framework, is depicted below.



Additionally, Medicaid and the WVHIN have collaboratively reviewed MITA goals to ascertain how best the WVHIN can support: the improvement of health outcomes, alignment with Federal Health Architecture (FHA), the use of common standards, interoperability, and integrate clinical and public health data. Results of that collaborative effort are outlined below.



Medicaid and WVHIN continue to work together to identify common business priorities. Several elements of the WVHIN that support Medicaid have been identified.

These include:

- Provide data exchange with public health
- Establish a user portal to support Medicaid applications and connectivity
- Utilization of common data standards to support collaboration and interoperability
- Compatibility and interoperability with the national Health Information Network
- Provide functionality and connectivity required in the new MMIS as defined in the HIT-P-APD
- System Architecture to support MITA and WVHIT Statewide Strategic Plan compatible

S.6 Coordination of Medicare and Federally Funded, State Based Programs

The WVHIN's governance structure is consistent with and complementary to Medicaid and Medicare plans for the implementation of Meaningful Use incentives. The WVHIN is a public/private partnership that receives administrative support from the Health Care Authority (HCA); the HCA is an autonomous agency under the Department of Health and Human Resources (DHHR). DHHR is responsible for the administration of most health-related federally funded state-based programs in West Virginia. West Virginia's State Government HIT Coordinator, working collaboratively with GOHELP, DHHR, Medicaid and WVHIN, as well as other entities, will interact with the federally funded state health programs and also the HIE activities within the state.

These relationships will augment WVHIN efforts to obtain input from these entities and ensure that fundamental IT elements from each program are ultimately integrated into WVHIN functionality. These programs include:

- State Medicaid
- Children's Health Insurance Program (CHIP), Department of Administration
- Epidemiology and Laboratory Capacity Cooperative Agreement Program, Bureau for Public Health (CDC)
- HIV Care Grant Program Part B States/Territories Formula and Supplemental Awards/AIDS Drug Assistance Program Formula and Supplemental Awards, Bureau for Public Health (HRSA)
- Maternal and Child Health State Systems Development Initiative programs, Office of Maternal Child and Family Health, Bureau for Public Health (HRSA)
- State Offices of Rural Health Policy, Medicare Rural Hospital Flexibility Grant Program, Bureau for Public Health (HRSA)

- State Offices of Primary Care, Community Health Systems, School-based Health Centers, and Black Lung Clinics, Bureau for Public Health (HRSA)
- State Mental Health Data Infrastructure Grants for Quality Improvement, West Virginia Data Infrastructure Grant for Quality, Bureau for Behavioral Health and Health Facilities (SAMHSA)

For example, most recently, the WVHIN participated with a multi-state collaborative in the submission of an application for a Children’s Health Insurance Plan Reauthorization Act (CHIPRA) quality demonstration grant specific to the area of promoting the use of HIT for the delivery of care for children. As stated in the grant, “CMS expects that successful demonstration grant projects funded under this solicitation will leverage HIT and health information exchange (HIE) to maximize the quality of children’s health care and will enhance linkages with other child-focused programs in order to create a seamless, integrated system of care and services based on the needs of the whole child”. Additionally, the grant builds upon other state and federal ehealth activities and aligns with MITA, so that states may maximize IT resources across business enterprises.

The WVHIN’s implementation approach is built on the premise that the services, functions, and tools will assist providers in achieving Meaningful Use of information technology and thus, qualifying for Medicaid and Medicare incentives. These capabilities tie directly to the HIT applications outlined in a paper produced by the Office of the Assistant Secretary for Planning and Evaluation (ASPE) regarding “The Underserved and Health Information Technology: Issues and Opportunities” and include e-prescribing, personal health records, computerized physician order entry, clinical decision support and disease registries. These capabilities will incentivize

information exchange among not only providers, but other stakeholders such as laboratories, pharmacies, etc. The WVHIN's technical architecture will allow continued innovation in product and service offerings to adapt to revised Meaningful Use requirements as they are developed.

The Community Health Network of West Virginia was a HRSA Integrated Services Delivery Network grantee for the purpose of adapting the VistA-RPMS *electronic health record system* (EHR) in a non-federal primary care environment. West Virginia is unique relative to its penetration of open source solutions based on the federal investments in the VistA-RPMS systems. Seven state healthcare facilities and four VA hospitals have implemented the VistA system. The Community Health Network of West Virginia has implemented RPMS, a variant of VistA, in over 30 clinics in West Virginia. The WVHIN has been collaborating with the Community Health Network of West Virginia to connect to the WVHIN and enable exchange of data between the VistA-RPMS systems that are used by many providers in West Virginia.

Most recently, representatives from the WVHIN and the Community Health Network presented information to physician office managers on HIE and EHRs at the WV Primary Care Association's Health Information Technology Conference that was held in Charleston, WV on June 23, 2010. Additionally, WV Medicaid has already committed to populating the WVHIN with six years of Medicaid data.

West Virginia was also the recipient of five Medicaid Transformation grants focused on HIT and quality and health outcomes. These grants are titled: Healthier Medicaid Members through Personal Responsibility, Healthier Medicaid Members through a Stronger Medicaid Program, Healthier Medicaid Members through Applied

Technology, Healthier Medicaid Members Health Systems Improvements, and Healthier Medicaid Members through Enhanced Medication Management.

As explained in section S.5, WVHIN leadership works closely with Medicaid leadership to ensure a coordinated approach to West Virginia's HIT/HIE infrastructure. WVHIN is committed to working collaboratively with Medicaid to use HIT/HIE to improve quality of care and contain costs for West Virginia's Medicaid programs, which are main goals of the Transformation grant funding. The funds allocated for the Enhanced Medication Management grant, for example, are being used to develop an e-prescribing system which will be offered through the WVHIN. Additionally, the funds allocated for the Personal Responsibility grant are being used to develop a PHR which will also have connectivity to the WVHIN.

WVHIN has contacted Jon Langmead with the CMS Philadelphia Regional Office to inquire about options for obtaining Medicare data for the WVHIN in order to advance a robust HIE. In addition to this, WVHIN is in advanced negotiations with private vendors to provide WVHIN participants with Medicare, Medicaid, and private insurance eligibility data.

WVHIN reviewed the Request for Information (RFI) for the Social Security Administration's (SSA) Medical Evidence Gathering and Analysis through Health Information Technology (MEGAHIT) project in 2009. The WVHIN plans to explore options for exchanging data with SSA in 2011. The WVHIN has made contact with William Martinez from SSA about integrating WVHIN into the SSA's disability determination process.

WVHIN is also working with the West Virginia University Center for Health Ethics and Law which received a \$100,000 grant from the Benedum Foundation in 2009 to establish a statewide advance care planning document electronic registry. The WVHIN, in partnership with the WVU Center for Health Ethics and Law, will be establishing a statewide advance care planning document electronic registry accessible 24 hours a day to all emergency services and health care providers. The WVHIN will make the advance care planning document registry available on its portal which will be easily accessible to providers and patients for obtaining up-to-date documents within the registry. Documents contained in such a registry would include a medical power of attorney, living will, do not resuscitate card, and Physician Orders for Scope of Treatment (POST) forms.

S.7 Participation with Federal Care Delivery Organizations

WVHIN has been collaborating with Federal Care Delivery Organizations throughout all planning phases. DHHR, through its Bureau for Behavioral Health and Health Facilities, invested \$10 million installing and equipping its seven (7) state-operated hospitals and long term care facilities with an EHR system. Implemented by MedSphere, the system known as VistA is an open source product originally developed by the VA.

In addition, all U.S. Department of Defense (DoD) healthcare facilities in West Virginia are using a variant of the VistA system, known as the Composite Health Care System, as well as the Indian Health Service (IHS), and other public and private healthcare facilities in West Virginia.

WVHIN will be adopting NHIN standards and protocols and intends to apply for validation to become a participant in the Nationwide Health Information Network (NHIN). Since this Exchange connects entities that currently include the Social Security Administration (SSA), Med Virginia, the Department of Veterans Affairs (VA), the Department of Defense (DoD), Centers for Disease Control and Prevention, (CDC) and Kaiser Permanente, WVHIN envisions participation into the NHIN as the integration mechanism used to interconnect with Medicaid and other federal programs as mentioned above.

As a signatory to DURSA, WVHIN will comply with the NHIN Performance and Service Specifications and demonstrate compliance through ongoing testing and validation. The DURSA also incorporates the NHIN Operating Policies and Procedures which WVHIN will adhere to. WVHIN plans to the adopt NHIN standards from inception and will ensure that the selected HIE vendor will be able to meet the minimum set of NHIN specifications that must be supported by all NHIN candidates. These core services, which must be implemented as the basis of the technical validation sets, are defined as: Core NHIN Services, the set of services below must be supported by all applicants for NHIN validation:

- Messaging Platform Service
- Authorization Framework Service
- Service Registry Service.

The selected vendor will be required to support Core NHIN Services and either NHIN Patient & Document Services, the NHIN Health Information Event Messaging Service, or both.

S.8 Coordination with Other ARRA Programs

The West Virginia Health Information Technology Statewide Strategic Plan, which was created through a collaborative process of stakeholders representing governmental and non-governmental healthcare organizations in West Virginia, clearly articulates the required alignment among existing and planned regional and state efforts and resources that can advance health information technology adoption and health information exchange. The vision proposed in the plan has several “pillars” including HIT adoption (via the RHITEC), statewide health information exchange, ensuring a broadband infrastructure, creating usable and accessible statewide data, work force development and ensuring sustainability (with leveraging federal partnerships). Each “pillar” represents strong coordination with other ARRA programs.

GOHELP is the mechanism through which ARRA funded programs will be coordinated, working in collaboration with the HIT Coordinator. GOHELP was created in 2009 for the purpose of coordinating all health care system reform initiatives among executive branch agencies, departments, bureaus and offices in the state of West Virginia and to coordinate development, improvement, and implementation aspects of state agencies' initiatives impacting West Virginia's health care delivery system.

GOHELP's Acting Executive Director meets with leadership from the WVHIN, Medicaid, Department of Commerce, DHHR and the HIT Coordinator, and other appropriate entities to ensure West Virginia's HIT infrastructure is developed through a coordinated approach. West Virginia has the correct governance structure

to make sure that we are utilizing the most efficient and cost-effective means of meeting the State's health information technology objectives.

S.8.1 Regional HIT Extension Centers

The West Virginia Health Improvement Institute (WVHII) has been designated as the West Virginia Regional HIT Extension Center (RHITEC). WVHIN is supporting and augmenting WVHII's RHITEC outreach and educational efforts to the provider community in coordinating HIE aspects of HIT adoption and use. WVHIN is acting as a partner with the RHITEC in the following areas: education and outreach, vendor selection and group purchasing, implementation and project management, and WVHIN is assuming a lead role in the areas of HIE interoperability, and will harmonize its privacy and security policies with HIT partners. The RHITEC and WVHIN's Physician Advisory Council is also helping drive physician adoption of certified EHRs and participation in HIE.

S.8.2 HITECH Workforce Training

At this time, an applicant for HITECH workforce training has not been identified. A likely applicant is WVHII, which through the RHITEC, will work in and in partnership with universities, colleges and two year community colleges. WVHIN will work collaboratively with the RHITEC to identify incumbent health IT employees throughout the course of implementation for inclusion in the training activities anticipated through this program.

S.8.3 Broadband Technology Opportunities Program (BTOP) Initiatives

WVHIN has committed to collaborating with the West Virginia Department of Commerce (WVDoC) and the West Virginia Telehealth Alliance on broadband initiatives involving sustainable adoption through telemedicine with a focus on improving patient outcomes related to long-term chronic disease. The WVDoC received \$126 million in federal stimulus funding for the Statewide Broadband Infrastructure Project. This funding will be used to improve West Virginia's high speed Internet access, and in particular, to expand broadband to rural areas within West Virginia. WVHIN has provided the WVDoC with physician location data and has initiated discussions regarding health information exchange bandwidth requirements. WVHIN has a working relationship with the Secretary of Commerce and has received assurance that all identified broadband needs of healthcare providers will be incorporated in the Statewide Broadband Infrastructure Project.

In addition, the West Virginia Telehealth Alliance (WVTA) is participating in the FCC's Rural Health Care Pilot Program. As such, the WVTA was awarded \$9.7 million in state and federal funds to improve broadband connectivity among eligible health care entities in the state. The WVHIN and WV Telehealth Alliance focused on ensuring the needed telecommunications infrastructure is in place across the state. WVHIN's COO, Raul Recarey, is a member of the WV Telehealth Alliance Board.

S.8.4 DOL: Employment and Training Program for Healthcare Sector Industries

West Virginia has not specifically identified West Virginia Department of Labor Employment and Training Administration (DOL-ETA) applicants for this ARRA funded program. However, the HIT Coordinator in collaboration with GOHELP, will contact Workforce West Virginia, which oversees the Workforce Investment Boards (WIB) across the state, to identify potential awardees under this grant program and to identify HIT/HIE training and placement strategies for participants of their programs.

S.8.5 HRSA Bureau of Health Professions (BHP)

ARRA funds have been specially allocated to increase BHP programmatic capacity. WVHIN is committed to collaborating with DHHR in reaching out to FQHCs, Rural Health Clinics, and other providers of care to vulnerable, uninsured, underinsured populations, and health professions schools – all of which are targeted by BHP programs.

Domain Requirements

S.9 Governance Model

S.9.1 Collaborative Governance Model

The WVHIN was established by W. Va. Code § 16-29G-1, *et seq.* (Appendix D) in 2006 and was charged to design, implement and maintain a statewide health information exchange (HIE). This enabling legislation gave legitimacy to the state-level HIE and established a 17-member public/private board comprised of the state's greatest

champions for HIE. The WVHIN board represents a cross section of stakeholders and is a neutral party well positioned to harmonize the interests of varied stakeholders.

WVHIN’s board composition includes representatives from hospital and physician associations, nursing homes, medical schools, the Health Care Authority, health plans, government and others. WVHIN’s collaborative governance model with multi-disciplinary stakeholder representation is shown in the membership list below.

Julian Bailes, M.D.	Chairman	Physician
Sonia D. Chambers	Secretary/Treasurer	WV Health Care Authority
J. Fred Earley, II, Esq.	Vice Chairman	Mountain State Blue Cross Blue Shield
Jim Brick, M.D.		WVU School of Medicine
Arnie Hassen., (for Richard Rafes, JD, PhD)		WV School of Osteopathic Medicine
Ted Cheatham		WV Public Employee Insurance Agency
Sarah Chouinard, M.D.		Physician
Robert Coffield, Esq.		Legal Representation
Michael Fidler, M.D., (for Joseph Selby, M.D.)		WV State Medical Association
Secretary Patsy Hardy		WV Department of Health and Human Resources (It should be noted that Medicaid’s interest are represented by the board member representing WV DHHR)
Sam Kapourales, (for George Koros)		WV Board of Pharmacy
Joe Letnaunchyn		WV Hospital Association
Jennifer Plymale, (for Charles McKown, Jr.)		Marshall University Joan C. Edwards School of Medicine
Louise Reese		Acting Executive Director of WV Primary Care

		Association
Jesse Samples		WV Health Care Association
Kyle Schafer		WV Office of Technology
John Wiesendanger		West Virginia Medical Institute

WVHIN has established goals, objectives, and milestones to implement the HIE in a consensus-based approach that includes statewide coverage of all providers by 2014. This consensus-based approach is organized and supported through a variety of mechanisms, including the WVHIN board, the Executive Committee, the Finance Committee, WVHIN's task forces which developed requirements for WVHIN's RFP (i.e. Privacy and Security Task Force, Data Standards Task Force, Functionality Task Force, Technical Task Force), and WVHIN's/WV RHITEC's Physician Advisory Council. These organizational mechanisms have been fundamental to WVHIN's planning process and will continue to play an important role in WVHIN's implementation process. As an initial part of WVHIN's outreach activities, many of WVHIN's stakeholders (i.e. hospitals, physicians, payers) agreed to engage in the process of becoming a participant in the WVHIN by signing a formal Letter of Intent (LOI). As stated earlier, WVHIN plans to roll-out the Wheeling MRR pilot in early 2011.

Roles of the board members include, but are not limited to the following: offering legal expertise in matters concerning the privacy and security of health care information; offering perspectives concerning HIE from actively practicing physicians, etc. Furthermore, WVHIN's Finance Committee, representing key executive

leadership from health systems, health plans, and state agencies, is currently working on finalizing its business model, including a financial sustainability plan. The Finance Committee is chaired by a WVHIN board member. Board members are integral players in ensuring WV's HIE is implemented and succeeds. WVHIN Board members provide the needed outreach and education to stakeholders across the state which is vital to the success of WVHIN's ongoing development.

WVHIN has elicited consumer group participation to represent the interest of special populations in the RFP development process but has recognized the need for increased involvement particularly around privacy policy development and consumer participation outreach. WVHIN has determined that the best way to receive consumer input is through a Consumer Advisory Council. This will be a group that will function much like the WVHIN Physician Advisory Council functions now. WVHIN is seeking the assistance of its many stakeholders to recommend potential Consumer Advisory Committee members. The committee will provide feedback on the patient consent process and associated forms. WVHIN feels it is important to have consumers involved in the development of the materials that will be used to promote participation in the exchange and point out the benefits to individuals and families. The timeframe for initiating the committee is within 2010.

WVHIN has been an active participant in the NHIN activities, including successfully demonstrating authorized and secure electronic exchange and use of health information for ONC at its national conferences. WVHIN also managed a pilot project involving authorized and secure electronic exchange among state providers. The

WVHIN team was also involved in the development of the Data Use and Reciprocal Agreement (DURSA).

WVHIN is aware of NHIN's Governance Framework Planning Work Group which is working to establish a conceptual framework for long-term governance of the NHIN. WVHIN's governance model will be aligned with the emerging national model as specific requirements are made available.

S.9.2 State Government HIT Coordinator

Ed Dolly will serve as State Government HIT Coordinator. Mr. Dolly is the Deputy Commissioner for Process, Applications and Methodologies at the WV Bureau for Medical Services (Medicaid). With over 20 years experience in the information technology (IT) field and having served as President of the Finance, Operations and Computer Technology (FOCTS) section of a local health association, Mr. Dolly is well prepared to fulfill the duties as West Virginia's State Government HIT Coordinator. Mr. Dolly has overall responsibility for ensuring that federal partners, WVHIN, RHITEC and various other state agencies are fully cooperating in the effort to get providers to meet Meaningful Use of certified EHRs. The HIT Coordinator has been designated by Secretary Patsy Hardy, DHHR (Department of Health and Human Resources) as the key liaison in this effort. With roles in both West Virginia Medicaid and in the WVHIN, the HIT Coordinator is in an ideal position to drive the integration of initiatives relating to certified EHRs.

The HIT Coordinator will also work in concert with the office of GOHELP, which has been created by the Governor's office, to facilitate coordination and communication of all HIT initiatives across the state. The West Virginia HIT

Coordinator regularly meets with the Cabinet Secretaries from various agencies and will assist with the internal adoption of electronic records at DHHR, which also includes the West Virginia Medicaid program, Public Health, and the Department of Commerce. The Coordinator will also be working with the U.S. Department of Veterans affairs to link the federal medical records for veterans with the records used by providers.

S.9.3 *Accountability and Transparency*

Oversight and accountability are accomplished through the board (that meet on a monthly basis) and the Executive Committee (which is made up of five WVHIN board members that meet on a monthly basis). WVHIN staff make decisions concerning daily operational activities while the board makes significant and/or policy level decisions and approves all contracts.

A quorum (i.e. 8 members) must be present for WVHIN's board to vote on significant issues. WVHIN staff provides both weekly updates and monthly status reports to the board. The board has given an Executive Committee (composed of 5 board members) authority to act and make decisions in lieu of the entire board on matters that require immediate attention between board meetings. Any actions taken by the Executive Committee must be ratified by the board at their next regular meeting. As needed, the WVHIN may establish advisory committees to the board to ensure any newly identified stakeholders are represented through WVHIN's governance model.

Many of WVHIN's board members are public officials who represent and protect public interest. In addition, consumer representatives from the West Virginia Mental Health Consumers Association and the West Virginia Association for Retired Persons are represented on WVHIN's Privacy and Security Task

Force, which developed privacy and security requirements that were incorporated into WVHIN's RFP for its HIE solution. Furthermore, board meetings are open to the public and minutes are publicly posted on the WVHIN's website at www.wvhin.org. Board meeting minutes contain a treasurer's report which describes year-to-date expenses, commitments, current balances, as well as a description of how monies are spent and matters that require immediate attention. The WVHIN has bylaws which are also publicly posted on WVHIN's website. These bylaws discuss management of conflict of interest issues, committees of the board, etc.

To develop requirements for WVHIN's RFP for its HIE solution, the WVHIN established task forces in the areas of data standards, technology, privacy and security, and functionality. These four task forces were staffed with individuals across the state and were representative of WVHIN's stakeholders. Each task force had a charter with a defined scope of work, guiding principles, deliverables, etc. All task forces included a chairman who created a consensus-building environment and guided the task force members through the RFP requirement development process. A fifth task force, the RFP task force, consisting of chairmen from the four aforementioned task forces plus other individual stakeholders throughout the state took the lead role in evaluating all vendor proposals. Members from the other four task forces also played a role in evaluating certain sections of the vendor proposals. The WVHIN continues to be committed to ensuring a transparent vendor selection process.

S.10 Finance

S.10.1 *Sustainability*

WVHIN believes that long-term sustainability of the HIE depends on broad stakeholder participation and involvement, and to this end has enlisted participation from a broad and diverse group of stakeholders. Sustainability will be accomplished through the provision of a multitude of cost-effective connectivity options plus select combinations of varied future products and services. Fees for connectivity and services will be borne by health plans, insurance companies, state agencies like Medicaid, DHHR, Public Health and others that utilize one or more features provided by WVHIN, in addition to physicians, hospitals and other medical providers. The WVHIN pilot project which is already scheduled to begin in the Wheeling Medical Referral Region (MRR) will encompass the tertiary care hospital in the region, a minimum of 2 laboratories and approximately 280 physicians. The pilot project is scheduled to commence in the first quarter of 2011. We anticipate that implementation of the pilot will give us very valuable information regarding a typical MMR rollout, provide utilization statistics, identify services required, help finalize the needed training, support and help define the complexity involved in integrating multiple PHRs and EHRs.

The WVHIN Finance Committee is developing an effective pricing structure for services and since the committee is made up of our future client stakeholders this provides additional assurance of financial sustainability. We anticipate the pilot rollout

to encompass a six month period. We have researched several suggested models and have concluded that a combination of subscription and transaction models work best for the West Virginia market.

- Subscription Model – which has the assumption that all stakeholders benefit and would be asked to join the WVHIN making a contribution. Subscription may also be on a per member per month basis.
- Transaction Model – An electronic solution is significantly less in cost for result distribution than either mail or fax. This would create an economic incentive for payers, hospitals and local labs to pay the transaction fee.

More specifically, the WVHIN sustainability model and plan will address the following areas:

1. Expected HIE infrastructure costs and staffing model
2. Outreach to MRRs
3. Revenue capacity model for the state
4. Stakeholder benefits
5. Implementation plans among the medical referral regions
6. Start-up funding, overall potential of the WVHIN for financial sustainability and the impact of ARRA and the cooperative agreement

We recognize that sustainability reaches beyond financial boundaries and future growth will also depend on the other elements of our Strategic and Operational Plan that deal with continued stakeholder, ONC, and state agencies involvement, which are

addressed in other sections of our plan. Beginning with basic connectivity, WVHIN is relying on a business model approach that will strive to continuously identify market needs and then develop services to meet the demand and generate revenue. One example of this is that WVHIN has already in advanced stages of negotiations with developing alliances with private groups to help create products that satisfy market needs. WVHIN is developing a universal eligibility portal that will allow physicians and hospitals to view coverage, eligibility and co-payment information to virtually all (covered) patients that enter their facility for service. Such a portal fills a much needed service that is presently lacking and will be offered as a value-added service to all providers for connecting through WVHIN.

Market understanding of the value of exchange has matured and because of this the WVHIN is no longer pursuing individual ROI analysis approach. We are now approaching service offerings on an individual need bases to help organizations meet Meaningful Use.

To facilitate start-up funding, the West Virginia HCA has contributed \$50,000 in fiscal year 2007 and \$1.5M per year since fiscal year 2007. In addition the WVHIN also received \$3.5M from the West Virginia legislature. Furthermore, Mountain State Blue Cross Blue Shield donated \$250,000 to the WVHIN. This funding has been used to develop the internal operational infrastructure needed to support the initial governance, technical, outreach and business activities of the WVHIN. The HCA funding and additional funding received from the ONC via the Statewide HIE Cooperative Agreement Program (\$7.82 million) will support continued start-up and roll-out

activities of the WVHIN including planning and initial operational support, technology investment and deployment, and pilot implementations in West Virginia's first MRRs.

The WVHIN has recently received vendor responses to their HIE technology and services RFP (the RFP was distributed in November 2009). These responses are critical in that the technology and associated services represent approximately 70% of the overall WVHIN budget. Preliminary reviews of the responses and their respective costs have provided the WVHIN with an opportunity to prepare alternative financial scenarios. With the costing analysis from the RFP, the WVHIN is assessing funding scenarios based on the following:

- The need to achieve sustainability after Year 4 (based on ONC guidelines)
- Stakeholder fee participation – To date, the WVHIN has identified multiple revenue scenarios based on fee income from participating stakeholders factoring in the revenue potential of each group. Stakeholder groups targeted included hospitals, physicians, health plans, self-insured employers, Medicaid and other providers such as nursing homes and FQHCs at reduced rates.
- Vendor negotiations – Based on the RFP responses, costs range from \$1M – \$9+ M in sustainability years 5 and 6 and beyond. Based on the responses, there are enough vendors in each cost range to allow for competitive negotiations and “fit” within WVHIN's ability to pay. More specifically, vendor proposed costs in sustainability years 5 and 6 can be categorized as follows: Low cost - 2-3 vendors (\$2M annually); Low to high cost – 6-9 vendors (\$5M annually); and all cost ranges – 12 vendors (\$1M to \$9M+ annually).

In summary, financial sustainability is achievable. The preliminary cost analysis reveals that WVHIN is in a very good negotiating position with both the vendor and with the stakeholders even if all key stakeholders are not participating in the start-up years.

S.11 Technical Infrastructure

The WVHIN's strategy for building technical infrastructure incorporates requirements of the State HIE Program and other ARRA-related programs. The WVHIN technical architecture includes the hardware, software, applications, network, standards, and other technology related aspects that will provide the relevant technical services for HIE operation.

The technical infrastructure is designed to include electronic services that will support statewide HIE including: Eligibility and claims transactions, e-prescribing and refill requests, ordering and results delivery, quality reporting to Medicare and Medicaid, prescription fill status and/or medication fill history, clinical summary exchange, and other services as outlined in the WVHIN's implementation approach.

S.11.1 Interoperability

The primary objective of the WVHIN's technical infrastructure is to promote full interoperability and health information exchange throughout the state. Two key components of the infrastructure design include adoption of NHIN standards and the incorporation of the necessary standards and certifications in order to achieve Meaningful Use.

WVHIN will adopt NHIN standards from its inception. WVHIN is currently ONC's partner and contractor and thus has been fully engaged in reviewing and

commenting on NHIN foundational elements as they are developed. These include: the Definitive Plan, Performance and Service Specifications, Interface Specifications, Validation Plan, Operating Policies and Procedures, and Architecture Overview. The WVHIN has successfully demonstrated authorized and secure electronic exchange and use of health information for ONC at its national conferences. WVHIN also managed a pilot project involving authorized and secure electronic exchange among state providers. WVHIN's RFP for a technology partner (released in November 2009) included the following NHIN specific technical and interoperability requirements:

- a. Conformance with NHIN's Performance and Service Specifications and integration with IHE.
- b. Compliance with the current drafted terms and conditions of the NHIN DURSA and plan to monitor the evolving terms and conditions.

WVHIN's structured RFP process developed specific requirements related to standards and certifications. These requirements included not only technical infrastructure related standards and certifications, but also standards applicable to semantic interoperability (data standards), Health and Human Services (HHS) adopted interoperability standards and certification requirements such as Certification Commission for Health Information Technology's (CCHIT) certification standards for their modular certification program – called Preliminary ARRA 2011 – that is limited to the standards for qualifying EHR technology under ARRA.

S.11.2 Technical Architecture/Approach

The WVHIN was created by the West Virginia Legislature in 2006 “to promote the design, implementation, operation and maintenance of a fully interoperable statewide

network to facilitate public and private use of health care information in the state”. Accordingly, the technical architecture/approach adopted was one in support of a statewide infrastructure. In late 2008, WVHIN issued a Request for Information (RFI) resulting in 17 vendors showing an interest in providing a HIE infrastructure in West Virginia. Technical specifications provided as a result of the RFI indicated that five vendors had the capacity to provide the functionality required to build the infrastructure and thus validated WVHIN’s technical direction.

Also, in late 2008, the WVHIN developed a “Technology Plan”. Based on the RFI responses, WVHIN staff discussions, assumptions, and requirement work accomplished to date, the framework for this plan included the following:

- **Architecture**
 - a. Secure, flexible, and able to enforce the privacy, security, and data usage policies established by WVHIN
 - b. Robust, documented, and tested business continuity and disaster recovery capabilities
 - c. Adherence to industry standards for data exchange and certification
 - d. Published interface specifications and development support for data providers and EHR users
 - e. The ability to react to changes in functional priorities which may result from stakeholder re-prioritization or federal government incentives (e.g. e-prescribing)

- **Functionality**
 - a. Comprehensive in its ability to support both the short and long term functional requirements anticipated as an exchange platform
- **Technical Processes**
 - a. Processes documented and coordinated with WVHIN staff for activities such as:
 - i. New user adds, terminations, and changes
 - ii. System maintenance periods
 - iii. System backup
 - iv. Disaster recovery practices
 - v. Usage audits
 - vi. Incident response, notification, remediation and follow up
- **Technical Services**
 - a. Comprehensive readiness evaluation, training material, and on-site training
 - b. Implementation project management
 - c. Implementation outreach
 - d. Help desk
 - e. Custom technical projects such as historical data loads, custom (non-standards based) interfacing, transition solutions, custom reporting, and audit research
- **Communication**
 - a. Coordinated efforts between the vendor and WVHIN staff to:

- i. Promote the exchange with in person outreach
 - ii. Issue media releases
 - iii. Deal with challenges such as data breach, dissatisfied users, lack of education, or community confidence
- **Affordability**
 - a. Delivery of solutions with a fee schedule that is customized to different constituencies based on their ability to pay

Development of the statewide technical architecture evolved through the transparent stakeholder-based vendor selection process initiated in August of 2009. As part of the RFP process, four task forces were convened: Privacy and Security, Technical, Data Standards, and Functionality. The task forces were charged with developing requirements (based on the current needs and opportunities throughout the WV technical landscape) related to their specific area of focus to enable Meaningful Use. Guiding Principles were established to guide the RFP process and have since been modified as follows:

Principle	Description
WVHIN HIE Services and Functionalities	There is Board agreement on the HIE services and functionalities. The offered HIE services and functionalities are in demand by WVHIN stakeholders and will assist stakeholders in achieving Meaningful Use.
Core Functionality	The Core Functionality that WVHIN provides is moving the data from point A to point B across organizations. This is done through: clinical messaging, inquiry across organizations (Continuity of Care Document), and e-prescribing.
The WVHIN Does Not Compete with EMR Vendors	The WVHIN enables all users to participate in the WVHIN irrespective of the electronic medical record (EMR) they use as long as it is ONC certified.

Principle	Description
<p>Meaningful Use Functionality and Bringing the Provider Community Along</p>	<p>Providers must achieve ARRA’s definition of Meaningful Use by 2015 or be subject to Medicare penalties. WVHIN is committed to helping the provider community achieve the definition of meaningful use by:</p> <ol style="list-style-type: none"> 1) Connecting all providers to the WVHIN 2) Providing some EHR-like modules that meet the requirements of Meaningful Use
<p>Secure Network</p>	<p>WVHIN will provide a private and secure network to serve everyone, including: consumers, providers, payers, public health, and researchers. WVHIN will be implementing an Identity and Access Management (IAM) solution that provides account management, centralized user provisioning, authentication, authorization, single-sign-on, logging and auditing. The IAM Authentication service provides system functionality for identifying system users and assessing the user credentials. A trust model will be developed creating user accounts in protected applications with individual user ID’s for each user. Each user is limited to search for only patient data in home facilities (facilities where the user has the rights to practice). A metadata index or Record Locator Service (RLS) is maintained for each patient’s clinical data that includes information about classes of clinical data available. When information is requested it is submitted to a Clinical Data Service module (CDS) that retrieves the data from the facility where the data is stored based on the user’s right to access.</p> <p>Data Layer Security – All data determined to be sensitive based on regulatory and compliance requirements and security policies will be encrypted (i.e. PII Personally Identifiable Information and PHI Protected Health Information as defined by HIPAA). Security protocols for encryption of data in transmission include Secure Sockets Layer (SSL), Transport Layer Security based on SSL used to support secure HTTP connections and Internet Protocol Security (IPsec) used to support private networks and remote user access through dial-up connections. A Firewall will be utilized to keep unauthorized users out of the protected network, prohibit vulnerable services from entering or leaving the network and provide protection from routing attacks.</p>
<p>Participation Eligibility</p>	<p>Everyone can participate with no exclusions.</p>

Principle	Description
NHIN	WVHIN will adopt NHIN standards and ensure interoperability with other exchanges.
Architecture	WVHIN is neutral regarding open source versus non-open source architecture. The architecture will be standards-based and adaptable to meet the requirements of ARRA and Meaningful Use.
Solution	WVHIN is seeking an established, commercially-available and hosted-solution.
Consent Management	The WVHIN approach to consent management includes having each HIE participant receive a privacy notice before or at the time of collecting personal health information (PHI) from the patient. This notice is permission for the HIE participant (physician, clinic, etc) to use their PHI information for their continued care. The privacy notice will be developed in accordance with the organization's business and legal strategies and contain an explanation of opt out rights and the methods for opting out. Our approach will allow consent forms to be captured through a web form (after ascertaining a patient's identity) or a paper based consent form. The consent form will contain information regarding the requirement to obtain affirmative consent, list of third parties with whom the PHI will be shared, details of PHI that would be accessed by third parties, the purpose of access/sharing, exceptions to the authorization and sensitive health information (for e.g., HIV/AIDS, Genetic Testing Results etc). The opt-out flag will be set if the patient indicates they do not want to share their clinical data through the physician portal, if a patient has opted but no class of application user or clinical super users will be able to gain access to the patient's clinical data.
Physician Adoption	WVHIN will achieve 70% physician adoption by 2012.
Sustainable HIE	WVHIN is to be self-sustaining by fiscal year 2014.

S.11.3 Master Patient Index (MPI) Management

WVHIN will have a community MPI which is used to conduct patient matching both when the data is populated into the exchange and when the end user does a patient

search. When a patient is added to the WVHIN, the MPI logic will determine whether the patient already exists in the HIE or whether a new patient record needs to be created. When an end user enters information to search for a patient in the WVHIN Portal, the MPI is used to find the patient or list of patients that match the information user in the search. WVHIN plans to use a best-in-breed MPI software product. The MPI technology will conduct all of the patient matching functions for WVHIN. Day to day monitoring and tuning of the system will be supported by the chosen vendor.

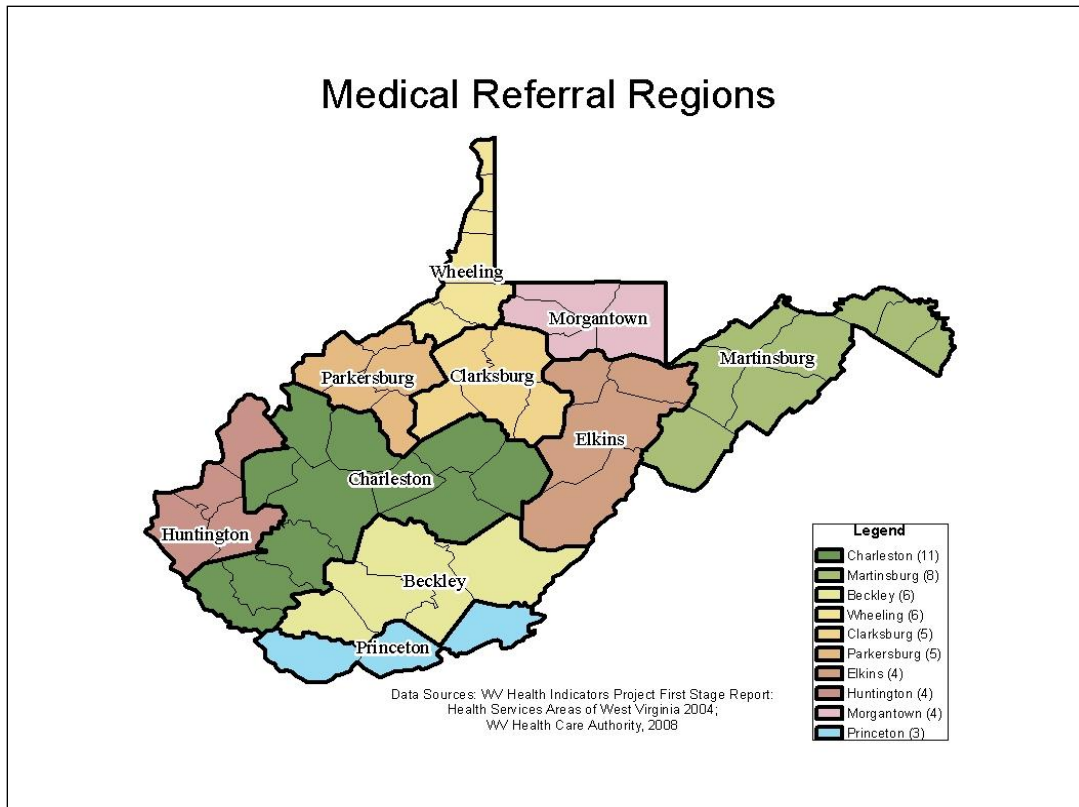
S.12 Business and Technical Operations

S.12.1 *Implementation*

WVHIN, in partnership with Medicaid and RHITEC, will provide support to health care systems and providers in achieving Meaningful Use during the implementation schedule set forth by CMS. The WVHIN has established a 4 year HIE pathway to achieve the WVHIN mission and assist stakeholders in achieving Meaningful Use. The HIE pathway includes rolling out the HIE in accordance with medical referral patterns. The WVHIN has identified ten MRRs in the state (as seen below), which are geographical areas in which referral patterns are largely self-contained. Four of these regions (Charleston, Huntington, Wheeling, and Morgantown) have both relatively high levels of electronic adoption among providers and have shown an interest in participating in the WVHIN.

Additionally, the State Hospitals and FQHCs have widely adopted electronic medical data and are interested in becoming early adopters of the WVHIN, as are other individual hospitals and other entities. Most recently, WVHIN signed an agreement with

Wheeling Hospital to become WVHIN’s first pilot, expected to roll-out in early 2011. WVHIN is also working with the Upper Ohio Valley Individual Practice Association (IPA) in Wheeling to recruit the IPA’s approximately 300 physicians to the WVHIN. WVHIN’s strategy for execution of the rollout is described in more detail in the Operational Plan.



The success of the WVHIN’s HIE is driven by high participation rates by the majority of physicians, not just a few. WVHIN has set a goal of 70% physician participation in the WVHIN by 2012. For many, the assumption is that many physicians will be purchasing their own EHRs or will have access to high-end EHRs through other entities such as hospitals, Medicaid-sponsored resources, Individual Practice Associations (IPA), health plans, etc. In addition, many also assume that the EHRs they are using will

have the capacity to achieve Meaningful Use as defined by the HITECH Provision of the ARRA Act and regulations promulgated pursuant to that act.

However, there will also be two groups of physicians whose needs will not be met above that need to also connect to the WVHIN. They will also need to achieve Meaningful Use:

- Very small paper-based practices that will not readily adapt to EHR utilization. Options will be made available to providers for certified EHRs or modules that will meet the requirements of Meaningful Use.
- Practices, which are currently electronic with a Practice Management System and an EHR that does not currently meet Meaningful Use. They need specific applications that fill gap areas to achieve Meaningful Use.

In response to these needs not otherwise met, WVHIN is looking for a vendor that can provide additional options to providers for certified EHRs or modules that meet the requirements of Meaningful Use.

To further facilitate high utilization among physicians, WVHIN will establish a portal that will enable physicians to access multiple applications from many sources including Medicaid, WVHIN, hospitals, public health, RHITEC, telehealth, health plans, etc. The intent is to create the “iPhone” experience for users of the system.

The WVHIN and the RHITEC have established a Physician Advisory Council that is driving physician participation in HIE. WVHIN views the promotion of certified EHRs as the primary role of the RHITEC. To this end, WVHIN is supporting the

RHITEC who will be working exclusively in the promotion of certified EHRs. While traditional wisdom is that physicians are difficult to organize, there are a significant number of physicians that have a highly vested interest in making certain all physicians participate in the HIE. Of particular importance are those physicians with EHRs who cannot optimize their own practices unless they are able to exchange electronic data with other physicians.

WVHIN's Strategic Plan establishes an approach to provide two-way transmission of messages, electronic prescribing, cross-referrals between physicians, and inquiry capability for authorized clinicians to access core patient data from multiple locations for most of the state within two years. Supportive services will be provided via WVHIN, the RHITEC, and the selected vendor. WVHIN has begun dialog with local and regional Health Information Organizations (HIO) to understand capacity and initiatives throughout the state. Several HIOs have been identified as early adopters; each with slight variation as to what services will best provide value to the HIO. WVHIN will continue to inventory these initiatives, along with existing state services and repositories, and develop parallel plans (along with the implementing selected solution) to assess the feasibility of leveraging these initiatives, services and repositories.

WVHIN's successful outreach strategy is based on a comprehensive communications plan that outlines the strategy deployed to effectively communicate with all stakeholders. The communication strategy includes the following areas (*Appendix E*):

- Market Positioning, Communications and Education
- Medical Referral Region Outreach

- Health System Outreach
- Physician Outreach
- Outreach to Other Providers
- Payer Outreach
- Consumer Outreach

The WVHIN will adopt NHIN standards and ensure interoperability with other exchanges. WVHIN is currently ONC's partner and contractor in building the Nationwide Health Information Network and has successfully demonstrated authorized and secure electronic exchange and use of health information for ONC at its national conferences. WVHIN also managed a pilot project involving authorized and secure electronic exchange among state providers.

S.13 Legal / Policy

S.13.1 *Privacy and Security*

WVHIN is a public/private partnership which receives administrative support from the WV Health Care Authority, an autonomous state agency within the West Virginia Department of Health and Human Resources. The WVHIN was established in 2006 by the West Virginia legislature. This enabling legislation gave legitimacy to the state-level HIE and established a board comprised of the state's greatest champions for HIE. WVHIN serves as a clearinghouse and facilitator for educating public officials about the advantages of HIE and the necessity of removing barriers. The WVHIN board is comprised of 17 public and private members, representing a cross section of

stakeholders and is a neutral party well positioned to harmonize the interests of varied stakeholders.

In 2008, WVHIN, through its Consumer/Employer/Privacy Committee, built its privacy and security framework, (*Appendix F*), with the input of its stakeholders, including consumers representing specially protected information, such as mental health. This framework is consistent with the Connecting for Health Common Framework, as well as ONC's Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information.

The 2008 Framework has been updated and harmonized with WV State laws. The Privacy and Security Committee (which has morphed from the Consumer/Employer/Privacy Committee) is being aided by legal counsel in following a process of drafting HIE policies that protect consumer privacy rights particularly around specially protected information and providing consumers with the choice and the ability to correct PHI. To ensure patient privacy rights, WVHIN has developed an approach to consent management for consumers that includes having each HIE participant receive a privacy notice that fully explains all patient rights and participation options around sensitive information including the ability to resend an opt out decision and receive an accounting of disclosure of their data. WVHIN will work closely with its technology partner to design and integrate privacy requirements into the HIE. At this time WVHIN's Privacy and Security Committee has extensively discussed the opt out policy option with consideration of state law for specially protected information (draft available upon request). WVHIN anticipates multiple rounds of changes to this draft; however, this will provide more detail about how our process will work.

Data will be secured through an Identity and Access Management solution (IAM) that is used to verify HIE user authentication. WVHIN plans to use a best-in-breed software product to ensure the best possible patient matching process and a Data Layered Security system including security protocols for encryption of data in transmission include Secure Sockets Layer (SSL) and a firewall will be in place to ensure unauthorized users are prevented from entering the network.

S.13.2 State and Federal Laws

WVHIN conducted an analysis of state and federal laws. WVHIN is subject to the following West Virginia and federal law and policy identified to date:

- HIPAA, as a business associate. 45 CFR §§ 160 and 164.
- HITECH, as a business associate. HITECH § 13400.
- Substance Abuse regulations. 42 CFR Part 2.
- DEA regulations regarding prescription of controlled substances.
- National laboratories' policy requirements regarding patient authorization.
- Legal opinion letter analyzing and harmonizing specially protected information under WV and federal law with health information exchange, consent process, and electronic prescribing. (*Appendix G*)
- WV Executive Branch Privacy Principles and Policies.
www.privacy.wv.gov
- WV Office of Technology Security Policy.
www.technology.wv.gov/Pages/default.aspx
- WV law regarding establishment and operation of the WV Health Information Network. Note, WVHIN is not subject to the Freedom of

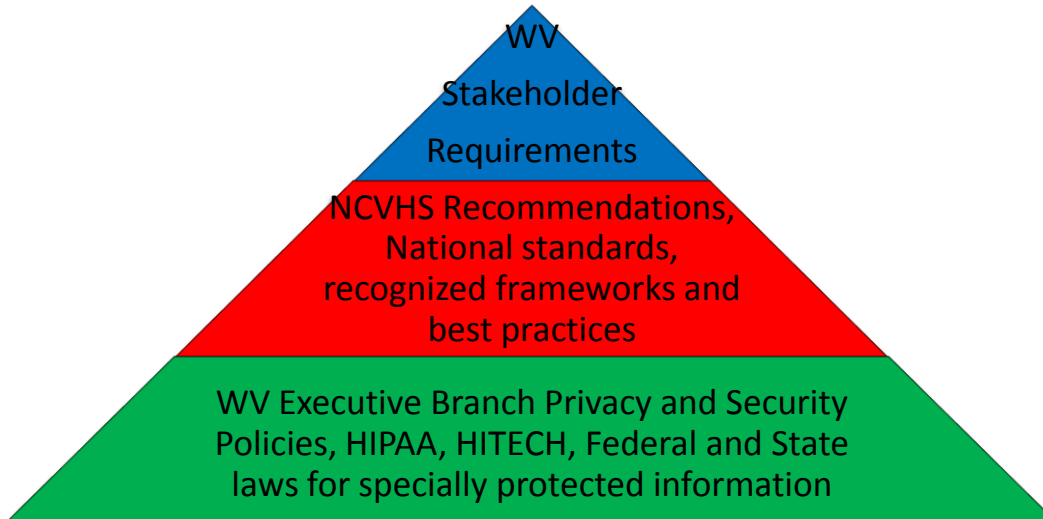
Information Act or State Purchasing processes. W. Va. Code § 16-29G-1 *et seq.*

- WV Open Governmental Proceedings Act. W. Va. Code § 6-9A-1 *et seq.*
- WV Attorney General Purchasing Requirements. Form WV-96 (*Appendix H*)

S13.3 Policies and Procedures

The WVHIN's Privacy and Security Framework is comprised of the following principles: individual rights/participation, consumer notice, minimum necessary/limited use, security safeguards, consumer consent and authorization, and global considerations. In 2009, a side by side analysis, (*Appendix I*, was performed to ensure alignment of the WVHIN's privacy and security principals with the Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information (ONC) and the WV Executive Branch Privacy Principles. Through this analysis, WVHIN ensures that all eight HHS principles are included in WVHIN's Privacy and Security Framework.

This figure represents the relationship between WVHIN's Privacy and Security Requirements, standards, best practices, principles and stakeholder requirements:



S.13.4 *Trust Agreement*

WVHIN is proficient in trust agreements development by virtue of our participation on the NHIN Data Use and Reciprocal Support Agreement Team and has the capacity and authority to develop reciprocal support, data sharing, and data use agreements. WVHIN will utilize its Privacy and Security Committee mentioned above to approve the agreements that will be used with participants, and ensure that the universe of needed policies and procedures is identified and contained in the trust agreement. On an annual basis, WVHIN will provide a status report on development, implementation and training around privacy and security. The report will identify policy and legal requirements determined necessary for trust/participation agreements, identify types of trust/participation agreement templates developed, and the number of executed agreements. In addition, the report will identify strategies deployed for interstate HIE, as well as status, successes, challenges and lessons learned.

S.13.5 Oversight of Information Exchange and Enforcement

Because WVHIN is part of WV's Executive Branch, it is a member of the Executive Branch Privacy Management Team (PMT) and benefits from the PMT's support and resources. The State Privacy Office, which supports the PMT, is sponsored by the WV Health Care Authority, which provides administrative support to the WVHIN and is co-located with WVHIN; the former WVHIN Executive Director is the State's Chief Privacy Officer and has agreed to assist WVHIN with privacy architecture and strategy.

The WVHIN Privacy and Security Officer is the point of contact for WVHIN privacy and security issues, and is responsible for mitigation strategies and response procedures. WVHIN will develop policies to assure that the WVHIN's Board is notified of all security incidents related to the external unauthorized disclosure of PHI within a timely manner and that staff, along with vendors, as appropriate, perform a root cause analysis. The WVHIN Privacy and Security Officer will review all root causes analyses, including recommendations for remediation and/or mitigation. WVHIN staff will periodically report on all complaints received to the WVHIN's Executive Committee.

WVHIN will periodically audit its operations, and require the same of its participants, to ensure adherence to legal and policy requirements. Audit results shall be presented to the WVHIN's Board. As risks are identified, and as appropriate, WVHIN's Privacy and Security Officers shall develop and deploy mitigation strategies, and shall notify the WVHIN's Executive Committee. WVHIN's Executive Committee shall determine appropriate reporting to the full board, upon the advice of WVHIN's Chief Operations Officer.

OPERATIONAL PLAN

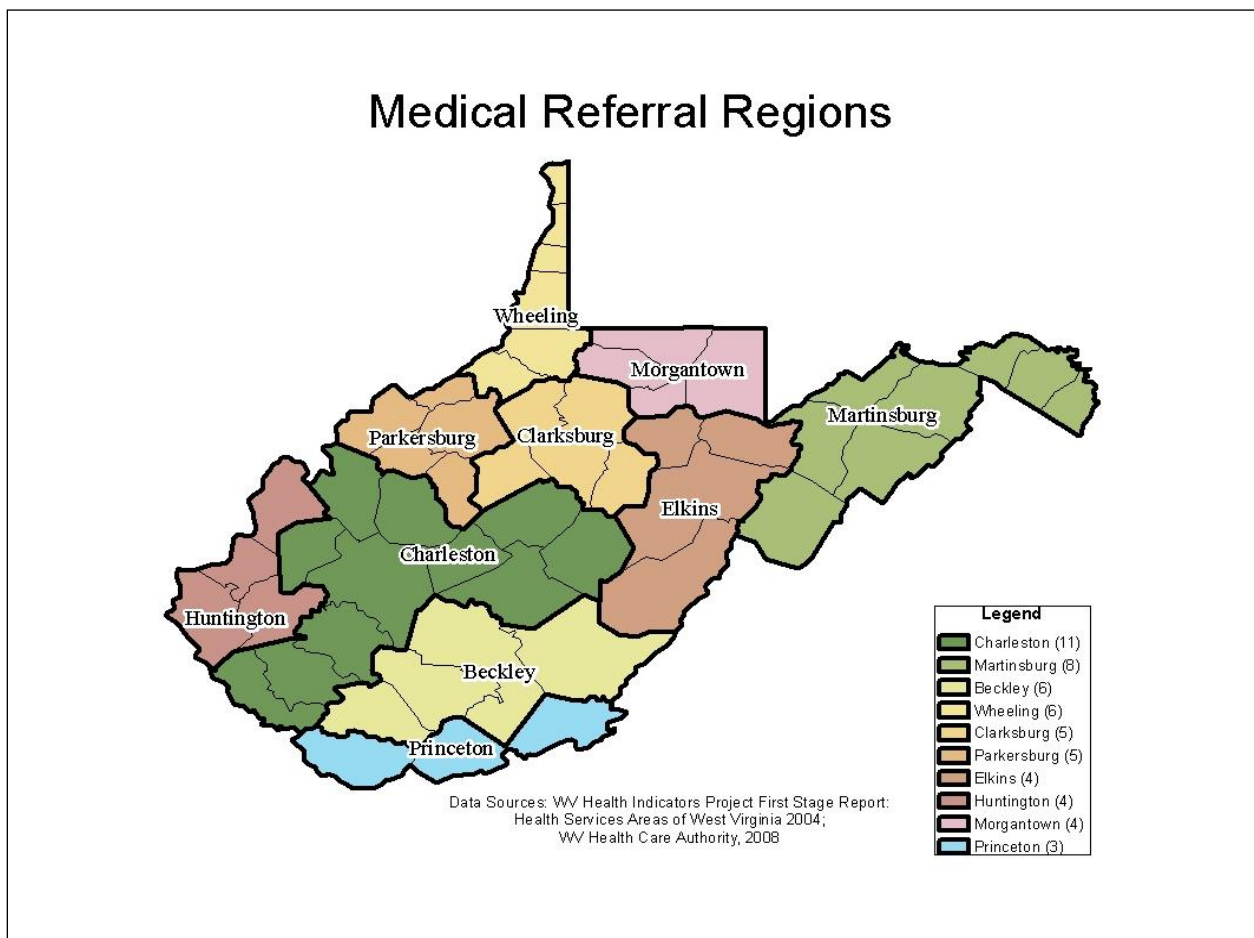
O.1 Introduction

The WVHIN has learned in working with other states that early adopters are instrumental in the long term success and the development of services. Identifying technologically advanced pilots sets the stage for others to follow and the WVHIN has already identified such a pilot MRR (Wheeling).

WVHIN's strategy to implement services recognizes the importance of quickly getting providers to meet 2011 Meaningful Use criteria through the exchange of patient data and creating value to the users of the exchange. WVHIN plans to roll-out its services through West Virginia's 10 Medical Referral Regions (MRR) as mentioned in the Strategic Plan.

WVHIN's MRRs are based on Health Service Areas (HSA) within West Virginia. A HSA is based on West Virginia residents' medical services utilization patterns: The linkage between the patients' county of residence and the counties where medical services were provided. Thus, a HSA is identified as a group of counties where most of the counties' residents receive medical services within a geographic area. The Princeton MRR, for example, shows that medical service utilization patterns are largely contained within a three county area. The MRR concept provide WVHIN leadership with the opportunity to understand patient flow/provider referral patterns within West Virginia and thus the WVHIN can enable data exchange between hospitals, physician practices, etc. within geographic regions that have a need to share data on their patient population.

The WVHIN plans to work in partnership with its technology vendor to roll-out the HIE by MRR according to a specific implementation schedule until statewide implementation is achieved by 2014. WVHIN’s first pilot roll-out within the Wheeling MRR is scheduled to begin in early 2011 and the WVHIN has set the goal of getting 70% of WV physicians connected to the HIE by 2012; this target will be vital to ensuring WVHIN’s financial sustainability. The MRR rollout strategy has been endorsed by WVHIN’s stakeholders and the strategy is seen as an effective implementation approach which will enable providers and other organizations to access data on their patient populations.



O.2 Coordination with ARRA Programs

GOHELP requests and collects summary information on ARRA funded projects. The efforts of the RHITEC are being closely aligned with the implementation plan for the health information exchange. WVHIN will also be reaching out to other ARRA projects, such as the Broadband Technology Opportunities Program (BTOP) and HITECH Workforce Training efforts, to discover areas of program intersection and opportunities for WVHIN to augment or support such initiatives.

WVHIN is collaborating closely with Medicaid to coordinate ARRA specific activities such as the development of the WVHIN operational plans and the SMHP. Planning discussions are ongoing as to how to leverage both the statewide HIE infrastructure and MMIS to best serve the State's health services and agencies and other stakeholders via (1) Shared services such as access to e-prescribing, Personal Health Records (PHRs), claims and eligibility data, etc; (2) The provision of clinical decision support systems to collect and report on health data for improving population health in WV; and (3) Advancing other ehealth capabilities critical to the MMIS environment such as case management, medical review and clinical surveillance.

There are specific points of coordination between WVHIN and other WV entities that have received ARRA funding. For example, the RHITEC and the WVHIN are working together on physician outreach efforts. For example, on June 23, 2010, representatives from the RHITEC and WVHIN presented information on HIE and EHRs to physician office managers at the West Virginia Primary Care Association's Health Information Technology Conference in Charleston, WV. WVHIN and RHITEC also share a Physician Advisory Council, made up of over 20 primary care and

specialty physicians across the state, which is helping to mobilize the physician leadership at the community level. This council is a valuable resource to both the RHITEC and WVHIN in the way of providing physician insight on RHITEC and WVHIN business models, service offerings, marketing methods, etc.

WVHIN is also collaborating with the West Virginia Department of Commerce (WVDoC) which received \$126 million in federal stimulus funding for the Statewide Broadband Infrastructure Project. This funding will be used to improve West Virginia's high speed Internet access, and in particular, to expand broadband to rural areas within West Virginia. The West Virginia Statewide Broadband Infrastructure Project plans to bring high-speed Internet access to West Virginia's vastly underserved region by expanding the state's existing microwave public safety network and adding about 2,400 miles of fiber.

The expanded statewide network expects to directly connect more than 1,000 anchor institutions, including public safety agencies, public libraries, schools, government offices, and other critical community facilities at speeds of up to 45 Mbps. As a result of this project, every K-12 school in the state will have a high-speed Internet connection. In addition, access to healthcare, distance learning opportunities, and broadband and video applications for emergency first responders will be greatly expanded.

WVHIN's Secretary-Treasurer, Sonia Chambers, regularly attends meetings of the Broadband Deployment Council which oversees the project. Ms. Chambers as well as Raul Recarey, WVHIN's COO, regularly communicate with Kelley Goes, Secretary of

WVDoC, on our shared vision of providing all healthcare providers with high-speed Internet access and the ability to connect to the WVHIN.

WVHIN has a working relationship with Secretary of Commerce and has received assurance that all identified broadband needs of healthcare providers will be incorporated in the Broadband Project. Broadband Deployment Council members also include Kyle Schafer, Department of Administration designee, who also is a WVHIN board member; representatives from the Division of Homeland Security; a labor representative; a telecommunication providers' representative; a broadband equipment/device manufacturers' representative; a higher/secondary education representative; a representative from the general public; a cable operators' representative; a designee appointed by the Governor; a member from the general public; and Kelley Goes, Secretary of the WVDoC.

O.3 Coordination with Other States

The WVHIN is a member of the Statewide HIE Coalition. This is a coalition of states and State-Designated Entities that is designed to provide a forum for its members to share their experiences with statewide HIE, including their experiences leveraging HITECH's various funding streams and provisions, and to enable members to identify and advocate for federal policies that will support successful statewide HIE. In addition to West Virginia, Statewide HIE Coalition members include Arizona, California, Colorado, Delaware, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, New York, North Carolina, Rhode Island, Tennessee, Texas, and Vermont.

WVHIN's involvement in the NHIN has enabled it to coordinate with other states during the Trial Implementation project and now with the NHIN 2 Option Year 1 contract. As part of this contract, the WVHIN team has participated with other states on the Cooperative Leadership Workgroup, Communications Workgroup, and the DURSA Workgroup.

In partnership with WVMI, the WVHIN participated in the national HISPC project as part of the Consumer Education and Engagement Collaborative. WVMI and WVHIN, representing West Virginia, worked with Colorado, Georgia, Kansas, Massachusetts, New York, Oregon, and Washington to develop a series of coordinated, state-specific projects that focused on: educating targeted population groups on the risks and benefits of health information exchange; educating consumers about privacy and security regarding health information exchange; developing messaging to address consumer privacy and security concerns. For more information, please visit <http://www.ehealthwv.org/eh/default.aspx>.

The WVHIN also recognizes that its designated funding for interstate HIE will require the WVHIN to begin coordinating with states that border West Virginia around an HIE approach. The WVHIN will take the lead in reaching out to neighboring states to initiate discussions regarding patient cross-over data and to draft Interstate Compact language that encompasses national standards, criteria for interoperability, privacy and security, and Meaningful Use criteria.

West Virginia has a number of Medical Referral Regions that include health care facilities in bordering states where it is known that West Virginia patients are going for services. Likewise, several West Virginia facilities have a significant percentage of

patients receiving care in bordering states. WVHIN is including interstate data exchange in its Privacy and Security policy. A review of the data use and confidential records laws including Substance Abuse Treatment, HIV/AIDS, and Mental Health Records for Kentucky, Ohio, Pennsylvania, Maryland, and Virginia has been conducted (*Appendix J*) and is informing the development of WVHIN policies and participant agreements to facilitate and enable interstate exchange. A natural process for initiating interstate data sharing agreements will arise with the planned MMR roll out time line.

The WVHIN plans to make its Strategic/Operational Plan public and accessible via its website after the plan has been approved by ONC. Furthermore, in 2008, as part of the NHIN Trial Implementation Contract deliverable, WVHIN's Business Plan was submitted to ONC and is currently available on the NHIN Resource page of the Health and Human Services website. While this Business Plan pre-dates HITECH and Meaningful Use, it still contains core HIE-related components around governance and planning that may be valuable to states which are beginning to plan for statewide HIE. WVHIN plans to continue to share HIE-related information with other states and participate in national initiatives which coordinate and support the development of HIE's across the nation. WVHIN actively participates in the National Governor's Association (NGA) State Alliance for eHealth, the State Level Health Information Exchange (SLHIE) Consensus Project, and other associations where best practices and lessons learned are shared.

Domain Requirements

O.4 Governance

O.4.1 *Governance and Policy Structures*

WVHIN board member representation was set in statute by W. Va. Code § 16-29G-1, et seq. in 2006. Thus, adding members to the WVHIN board requires this legislation to be amended. The West Virginia Department of Health and Human Resources (DHHR) recently introduced legislation that would add additional board members to the WVHIN board in order to better meet ONC expectations regarding stakeholder representation of the HIE's governing organization. Due to the time constraints of the legislative session and the priorities of other bills introduced into the West Virginia legislature, this legislation was not passed. However, the WVHIN intends to establish advisory committees (i.e. consumer committee, public health, etc.) to the WVHIN board to ensure all stakeholder interests are represented by WVHIN's governance model; representation within these committees will better align with ONC expectations regarding stakeholder representation of an HIE's governing organization.

The WVHIN recognizes that successful statewide HIE governance requires day-to-day operational activities which support functional public and private collaboration and participation. Thus, WVHIN leadership continues to pursue operational activities which support public and private collaboration and participation. For example, WVHIN's COO and CIO are working closely with WV Medicaid's Commissioner, Nancy Atkins, and other Medicaid staff on its State Medicaid HIT Plan (SMHP). WVHIN and Medicaid are committed to working together to ensure interoperability

among WV's MMIS and the statewide HIE. Medicaid interests are currently being represented on the WVHIN board through the DHHR representative.

WVHIN leadership recognizes there are many components involved in approaching HIE accountability. WVHIN has established a statewide legal and policy framework for HIE, outlined in the Legal/Policy section of this document. WVHIN is requiring its chosen vendor comply with all HIPAA privacy and security standards and all legal requirements under HITECH. WVHIN is ensuring that the selected vendor's system conforms to the most current national standards.

The WVHIN initially established task forces to develop RFP requirements in the areas of privacy and security, technology, functionality and data standards for WVHIN's HIE. WVHIN's Privacy and Security Task Force has now matured into the Privacy and Security Committee that is currently overseeing the process of drafting policies, operational procedures and data exchange user agreements. Beginning in 2010, draft policies will be circulated broadly to stakeholders, and WVHIN advisory committees for feedback and input. To involve consumers, and identify interested Consumer Advisory Committee members, open listening sessions will be held to present WVHIN policy and process steps. WVHIN is initiating a Consumer Advisory Committee in 2010 that will assist in shaping West Virginia HIE policies to reflect choice and individual rights.

Many of the same stakeholders who made up the RFP committees in 2009 became the members in the vendor selection process in 2010 by participating in vendor functionality demonstrations and defining the most valued services for WVHIN to provide to meet Meaningful Use and ensure sustainability. A major

milestone for WVHIN is the selection of a technology vendor that will be our partner in standing up the West Virginia HIE. The anticipated date for completing the extensive selection process and contracting with a partner is fall 2010. WVHIN will begin its first pilot in early 2011. The WVHIN Finance Committee has been meeting to develop a pricing model for WVHIN services, participant agreements and associated forms that will be completed for Board of Directors review and approval in 2010. WVHIN ensures that its governance model will remain flexible to evolve with the evolving national HIE landscape.

WVHIN has a detailed Project Organizational Structure which is included in (*Appendix K*) with job descriptions. The WVHIN has primary responsibility for the project as overall Project Manager. The need for a rigorous approach to program and vendor management continues throughout the life of the WVHIN project and will be accomplished through a Performance Management Plan that will be reviewed with the vendor, stakeholders and WVHIN Board on a regular basis. The Performance Plan will entail a variety of regular activities designed to maintain the overall health of the WVHIN solution. Daily maintenance activities for the system are performed that include a confirmation that previous errors or problems have been addressed, discussion of modifications to the system or databases to address performance issues or improve performance, and schedule any hardware upgrades or new releases of system software and application software. The Performance Management Plan has the following benefits:

- **Improved performance** – By collecting and monitoring relevant organizational metrics it will allow the WVHIN to oversee and evaluate its own performance,

implement changes, and continue to improve its organization, processes and technologies

- **Organizational Alignment** – will assist management in building consensus around the WVHIN vision and strategies. In addition it allows managers a better understanding of strategic objectives and to build the WVHIN’s commitment to achieve the objectives.
- **Feedback and Learning** – Feedback and Learning will focus on the collection of performance data for evaluation of our strategy and the quality of our execution.
- **Detailed Approach** – Our detailed approach to Program Management will ensure that every individual in the organization, clients, stakeholders, State Agencies and the ONC have the opportunity to provide information and constantly review strategic objectives.

O.5 Finance

O.5.1 *Cost Estimates and Staffing Plans*

The following table outlines the costs associated with implementation of the WVHIN’s strategic and operational plans beginning 2010 through 2013.

WV HEALTH INFORMATION NETWORK - DETAILED BUDGET

	2010	2011	2012	2013
PERSONNEL				
Executive Director	\$ 32,000.00	\$ 32,800.00	\$ 33,620.00	\$ 34,460.50
Chief Financial Officer	\$ 7,500.00	\$ 7,687.50	\$ 7,879.69	\$ 8,076.68
Various Positions TBD	68,000.00	\$ 17,000.00	\$ 17,000.00	\$ 6,800.00
Total Personnel	\$ 107,500.00	\$ 57,487.50	\$ 58,499.69	\$ 49,337.18
FRINGE BENEFITS				
Executive Director	\$ 15,000.00	\$ 15,375.00	\$ 15,759.38	\$ 16,153.36
Chief Financial Officer	\$ 2,400.00	\$ 2,460.00	\$ 2,521.50	\$ 2,584.54
Various Positions TBD	32,000.00	\$ 8,000.00	\$ 8,000.00	\$ 3,200.00
Total Fringe Benefits	\$ 49,400.00	\$ 25,835.00	\$ 26,280.88	\$ 21,937.90
TRAVEL				
Lodging	\$ 2,320.00	\$ 2,378.00	\$ 2,437.45	\$ 2,498.39
Airfare	\$ 2,000.00	\$ 2,050.00	\$ 2,101.25	\$ 2,153.78
Conference Fees	\$ 1,000.00	\$ 1,025.00	\$ 1,050.63	\$ 1,076.89
Meals	\$ 400.00	\$ 410.00	\$ 420.25	\$ 430.76
Ground Transportation	\$ 400.00	\$ 410.00	\$ 420.25	\$ 430.76
Miscellaneous	\$ 800.00	\$ 820.00	\$ 840.50	\$ 861.51
	6,920.00	\$ 7,093.00	\$ 7,270.33	\$ 7,452.08
Local Travel				
Lodging	\$ 6,240.00	\$ 6,396.00	\$ 6,555.90	\$ 6,719.80
per diem	\$ 1,440.00	\$ 1,476.00	\$ 1,512.90	\$ 1,550.72
	18,360.00	\$ 18,819.00	\$ 19,289.48	\$ 19,771.71
Lodging	\$ 2,400.00	\$ 2,460.00	\$ 2,521.50	\$ 2,584.54
Airfare	\$ 1,600.00	\$ 1,640.00	\$ 1,681.00	\$ 1,723.03
Conference Fees	\$ 5,200.00	\$ 5,330.00	\$ 5,463.25	\$ 5,599.83
Meals	\$ 600.00	\$ 615.00	\$ 630.38	\$ 646.13
Miscellaneous	\$ 800.00	\$ 820.00	\$ 840.50	\$ 861.51
	10,600.00	\$ 10,865.00	\$ 11,136.63	\$ 11,415.04
Total Travel	40,775.00	\$ 41,794.38	\$ 42,839.23	\$ 43,910.22
Equipment				
	1,900,000.00	\$ 1,225,000.00	\$ 825,000.00	\$ 480,000.00
		\$ 150,000.00	\$ 150,000.00	\$ 150,000.00
Interface Software	1,900,000.00	\$ 1,375,000.00	\$ 975,000.00	\$ 630,000.00
Supplies				
Laptop Computers	9,600.00	\$		
Handheld PDA w/service	6,400.00	\$		
Desktop Computers	7,000.00	\$		
Workstations	17,500.00	\$		
	40,500.00	\$		
Training material	6,000.00	\$ 9,000.00	\$ 4,500.00	\$ 3,000.00
Outreach/public relations materials				
	100,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
Total Supplies	146,500.00	\$ 19,000.00	\$ 14,500.00	\$ 13,000.00
Contractual				
WF Health Institute	50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00
Project Evaluation	61,354.00	\$ 46,180.00	\$ 37,847.00	\$ 27,982.00
Strategies for Tomorrow	100,000.00	\$ 75,000.00	\$ 50,000.00	\$ 25,000.00
Legal Services	200,000.00	\$ 150,000.00	\$ 100,000.00	\$ 20,000.00
Public Relations	100,000.00	\$ 100,000.00	\$ 150,000.00	\$ 100,000.00
Matrix	373,500.00	\$ 414,868.00	\$ 425,240.47	\$ 434,816.07
Total Contractual	\$ 884,854.00	\$ 836,048.75	\$ 813,087.47	\$ 657,798.07
GRAND TOTAL	3,129,029.00	\$ 2,355,165.63	\$ 1,930,207.27	\$ 1,415,983.36

The WVHIN Project Plan – (*Appendix L*) has been updated with current projected dates. Included within Appendix L is a supplemental narrative that describes some of the milestones in the Operation Plan.

The WVHIN Privacy and Security Officer is the point of contact for WVHIN privacy and Security issues, and is responsible for mitigation strategies and response procedures. Risk management is a critical process for managing uncontrollable project activities or circumstances that may result in negative consequences to project or product performance. The WVHIN risk management process is used to identify, assess and document associated risks with cost, resources, schedule, and technical aspects. The WVHIN risk management approach involves two major processes, risk assessment and risk mitigation. Risk assessment includes activities to identify risks, to analyze and prioritize those risks. Identification involves the process of identifying and documenting specific factors that can negatively impact the WVHIN implementation if not properly managed. Once risks have been identified it is important to prioritize these risks for mitigation and monitoring through the project life cycle.

A valuable tool the WVHIN will be using for this process is Microsoft Project which contains templates for the documentation of risks. Risks are generally brought to the forefront through a variety of avenues which include stakeholders, clients, project participants and consumers.

Risk mitigation entails effecting means to reduce a risk's impact on the project. During Risk mitigation the project management team develops a strategy to reduce the impact the risk has on the project and develops corrective action plans. The goal is to prevent the risk from materializing or if a risk occurs, guide organizational resource to

appropriately respond to it. The WVHIN management team will utilize the documentation in Microsoft Project Management to record, monitor and report the results of all mitigation actions.

WVHIN has identified a number of project issues and risks. These are summarized below along with proposed resolution and mitigation methods.

- Physicians with No Access to EHR - The RHITEC will act as driver in working with physician offices without an EHR to connect them to WVHIN. The RHITEC will assess these physicians' technology needs and identify their best options for migration to a certified EHR.
- Physician Participation - WVHIN will place a priority on physician adoption, with the goal of achieving 70% physician adoption in by 2012. WVHIN has realigned its pathway for HIE implementation in order to support providers in meeting Meaningful Use criteria; this may entice physicians to hook into WVHIN in order to maximize Medicare/Medicaid incentive payments. WVHIN has a history of participation in many physician conferences throughout the state of West Virginia, educating physicians about WVHIN and HIE in general. WVHIN's Physician Advisory Task Force is helping mobilize physician leadership at the community level. In partnership with the RHITEC entity for West Virginia and the Physician Advisory Council, WVHIN has begun targeting its awareness, education, and outreach efforts toward primary care physicians initially, including rural health clinics and FQHCs across the state.
- Financial Sustainability - WVHIN is implementing an incremental approach to sustainability over the duration of the ONC period of performance.

WVHIN's Finance Committee is working on finalizing its business model including a financial sustainability plan. WVHIN will achieve financial sustainability beyond ONC funding (i.e. FY 2014), at which time 100% of all HIE participants will be assessed fees and on-going state revenue will be determined.

- Changes in the HIE Marketplace – WVHIN leadership understands that the exchange must operate like a business by providing services that are in demand. Thus, WVHIN will partner with a technology vendor that is committed to remaining flexible in terms of its service offerings, etc.

The WVHIN Finance Committee is made up of key executive leadership from health systems, health plans, and state agencies. As documented in the Strategic Plan, Finance Section, Sustainability Sub-section, the sustainability model and plan will address the following areas:

- Expected HIE infrastructure costs and staffing model
- Outreach to Medical Referral Regions
- Revenue capacity model for the state
- Stakeholder benefits
- Implementation plan among the medical referral regions
- Start-up funding, overall potential of the WVHIN for financial sustainability and the impact of ARRA and cooperative agreement
- Interstate Data Exchange - WVHIN will begin reaching out to adjacent states, all of whom share large patient populations with West Virginia, in order to develop an Interstate Compact.

WVHIN has reevaluated and expanded its management structure to ready itself for growth and for performing two functions: convener/collaborator and technical

service provider/broker. As convener/collaborator, WVHIN is required to meet with a wide variety of stakeholder groups to discuss:

- Stakeholder participation in the WVHIN from education to commitment and contracting.
- Negotiate with participating organizations joining WVHIN
- Obtain additional funding for the WVHIN
- Alignment of multiple HIE/HIT initiatives in the state
- Addressing barriers to participation in the WVHIN and other HIE/HIT initiatives (interoperability, liability, privacy and security, data exchange across state lines, etc.)
- Develop a monitoring mechanism for the performance of the WVHIN
- Identify functionality requirements of stakeholder groups

Key functions needed to support the convener/collaborator roles include:

- Marketing and stakeholder outreach
- Market research
- Contract negotiations
- Convening and facilitation
- Policy development
- Grant management
- Fund management

- Volunteer management

Key responsibilities of the technical service provider/broker include:

- Oversee financial planning
- Oversee technical planning outlining interface standards, testing, implementation, workflow impacts
- Oversee requirements development that documents the business/clinical opportunity
- Oversee a vendor selection process
- Oversee vendor contracting and management capabilities
- Oversee implementation planning that aligns with other HIE/HIT initiatives
- Conduct detail technical-level negotiations with participating organizations of the WWHIN
- Oversee community roll out
- Provide training and support to local communities in coordination with vendor
- Potentially provide first-line support for user questions in coordination with vendor

Key functions needed to support the technical service provider/broker roles include:

- Financial planning

- HIE/HIT technical planning
- HIE start-up and implementation oversight
- HIE technical contract negotiations
- HIE technical and user support functions

The WVHIN’s staffing plans support the aforementioned premise that collaborator/convening and technical service provider/broker roles are critical for the success of West Virginia’s HIE. The COO is responsible for the overall administration and management of the WVHIN. Furthermore, the COO will be responsible for building WVHIN’s internal operational capacity to support the day-to-day operations. WVHIN’s CIO will be responsible for the planning and execution of the information technology vision, goals and initiatives for the project. The Business Development Manager will be responsible for execution of the marketing plan and subscriber development.

The table below lists each WVHIN staff position and their respective primary responsibilities.

WVHIN Staff Position	Primary Responsibilities
Chief Operations Officer	<ul style="list-style-type: none"> • Assist the Board of Directors in setting strategic direction and developing long-term viability • Overall administration and management including planning and evaluation, policy development and administration, personnel and fiscal management, public education, provider recruitment, business model development, and media and public relations • Lead the WVHIN team in tactical initiatives in support of strategic and operational plans • Be the “public face” of the WVHIN through interaction with healthcare providers, potential and existing funders, policy-makers and executive leaders, consumers, and vendors

WVHIN Staff Position	Primary Responsibilities
	<ul style="list-style-type: none"> • Builds internal operational capacity of the WVHIN to support daily operations including: operational policy and procedure development; revenue and services growth: expense, cost and margin control; and financial goal management • Provides outreach and education to all potential and existing WVHIN exchange participants • Obtains buy-in, commitment and contracts from exchange participant organizations • Assist Medicaid on HIT and SMHP initiatives
Chief Information Officer	<ul style="list-style-type: none"> • Lead the technology planning and implementation of the WVHIN by providing vision and leadership • Plan and execute the information technology vision, goals and initiatives that support the long term objectives, mission and vision • Collaborate with the WVHIN team and manage a team of professionals who are accountable for implementation support and technical assistance • Provides outreach and education to all potential and existing WVHIN exchange participants • Assist the team in obtaining buy-in, commitment and contracts from potential participating organizations • Assist Medicaid on HIT and SMHP initiatives
Business Development Manager	<ul style="list-style-type: none"> • Articulate the WVHIN’s business development strategy and vision • Provide leadership to inspire an expansion of funding support for the WVHIN, increasing participation in the WVHIN to achieve critical mass, and managing important business development relationships • Collaborate with the WVHIN team and manage the outreach team who are accountable for education and outreach of the WVHIN and for obtaining buy-in commitment and contracts from potential participating organizations
Office Manager	<ul style="list-style-type: none"> • Provides overall office management support to the WVHIN staff • Oversees contracts and grant budgets

WVHIN Staff Position	Primary Responsibilities
Administrative Assistant	<ul style="list-style-type: none"> • Provides administrative support services to the WVHIN
Communication Specialist	<ul style="list-style-type: none"> • Provide research support, and assists in writing of grants, and request for proposal documents • Supports administration in statistics and compiling information for media displays
Project Manager	<ul style="list-style-type: none"> • Provide project management support for the WVHIN • Oversee WVHIN initiatives to ensure effective and efficient roll out of HIE services according to WVHIN implementation schedule • Coordinate efforts of team members and third-party vendors/consultants to deliver projects according to plans
Implementation Support Analyst	<ul style="list-style-type: none"> • Provide project implementation support to the WVHIN • Collaborate with WVHIN technical team, third party vendors and exchange participants to ensure effective and efficient roll out of HIE services according to WVHIN implementation schedule
Technical Analyst	<ul style="list-style-type: none"> • Provide the required technology, infrastructure and networking expertise to the WVHIN • Collaborate with WVHIN implementation team, third party vendors and exchange participants to ensure effective and efficient roll out of HIE services according to WVHIN implementation schedule

O.5.2 Controls and Reporting

WVHIN will establish and maintain a project financial and reporting structure that will be consistent with the financial plan and budget created for the State Health Information Exchange Cooperative Agreement. As a means to implement the necessary controls to ensure compliance with Generally Accepted Accounting Principles and all relevant Office of Management and Budget circulars and Federal financial management

regulations, the WVHIN will utilize the West Virginia Financial Information Management System (WVFIMS).

WVFIMS is the statewide accounting system that, among many other uses, assists State agencies in effectively managing its financial resources. WVFIMS provides users with up to date financial information on specific accounts (funds). FIMS also includes various reporting capabilities and mechanisms for tracking the status of transactions and viewing inquiry screens to see where certain documents reside electronically. There are edits to check for correct financial code combinations for revenues and expenditures; quarterly allotment edits to prevent overspending; and appropriation and cash liquidity edits.

The grant accounting system is integrated as part of the overall FIMS computerized systems and is utilized for preparation of various Federal financial reports. The FIMS accounting system provides for the electronic coding and accounting of grant related receipts and expenditures by grant. The grant expenditures are coded according to expenditure object codes established by the West Virginia State Auditor's Office, which correspond to the expense categories in the grant budget.

The grant budget is also included in WVFIMS. When a payment or a purchase is entered into the computerized accounting system, the balance in the budget is checked to ensure that funds are available. In the event that funds are not available or the expense object code has not been authorized in the grant budget, the payment or purchasing document will not post to the accounting system.

All documentation is maintained for all entries into the FIMS computerized systems. The documentation includes payment and purchasing documents as well as

budget and payroll documents. Additional information regarding FIMS may be obtained at the following website: <http://www.wvfinance.state.wv.us/WVFIMStrainmaterials.htm>.

O.6 Technical Infrastructure

O.6.1 Standards and Certifications

The WVHIN RFP contained requirements related to the four categories of standards recommended by the HIT Standards Committee:

- Vocabulary Standards – The WVHIN RFP established requirements specific to semantic interoperability (data standards) related to medication management and e-prescribing, laboratory tests and observation code sets, general medical code sets and procedures, HIPAA transaction code sets, the creation and maintenance of a synonym dictionary, and the process for normalization/encoding/data mapping/translation.
- Content Exchange Standards – The WVHIN RFP established requirements related to standards for clinical information sharing and structured electronic documents such as Continuity of Care Document (CCD).
- Transport Standards – The RFP included requirements to ensure a secure and common method for intersystem communications including, but not limited to: Health Level 7 (HL7), Digital Imaging and Communications in Medicine (DICOM), Electronic Data Interchange X12 (EDI X12), National Council on Prescription Drug Plans (NCPDP), Standard Object Access Protocol (SOAP), electronic business Extensible Mark-up Language (ebXML), Secure Socket Layer (SSL), and Transport Layer Security (TLS).

- Privacy and Security Standards–The RFP specified a significant number of privacy and security standards, the majority of which were identified to be minimum mandatory (pass/fail) requirements. More specifically, these addressed all HIPAA Privacy, Security and Administrative Standards, HITECH legal requirements, etc.

With regards to certification, the WVHIN’s future technology partner will be expected to comply with the certification criteria identified by ONC. Certification criteria was included in the distributed RFP and addressed:

- Meeting the ARRA 2011 certification requirements as established by the U.S. Government; the Federal standards for certified EHR technology to support the 2011-2012 incentives under the American Recovery and Reinvestment Act of 2009 (ARRA).
- The 2009 Health Information Exchange (HIE) certification program launched in October 1, 2008 focusing on operational HIEs and demonstrating the ability to receive and send at least one of three transactions (lab result, lab report and/or CCD).

The WVHIN is monitoring the ongoing activities related to HIE certification as drafted by the Electronic Healthcare Network Accreditation Commission (EHNAC).

O.6.2 Technical Architecture

WVHIN will be adopting all existing NHIN standards and protocols and will require that the winning vendor contractually commit to the ability to conform to existing and any future standards that NHIN may develop and adopt. In addition the vendor must be able to commit to providing all services as needed for WVHIN to comply with

DURSA. A priority goal of the WVHIN is to apply for validation into NHIN as soon as possible and become a participating node of the National exchange.

WVHIN will be a Healthcare Information Technology Standards Panel (HITSP) standards-based, hybrid architecture with federated and centralized applications, centralized and de-centralized data. A Service Oriented Architecture (SOA) approach is desired. Additionally, the WVHIN is seeking an integrated master person and patient identification (MPI) and record locator services (RLS) based on probabilistic matching algorithms in compliance with standards specified, adopted, or endorsed by the FHA, NHIN, and ONC.

As reflected in the WVHIN RFP, the WVHIN will be a Healthcare Information Technology Standards Panel (HITSP) standards-based, hybrid architecture with federated and centralized applications, centralized and de-centralized data. A Service Oriented Architecture (SOA) approach is desired. Additionally, the database solution should be based on Open System Architecture design as the WVHIN desires to be able to connect directly to the data via open database connectivity (ODBC) or similar database connectivity standards, as well as have a full data dictionary and schema.

Additionally, the WVHIN is seeking an integrated master person and patient identification, and record locator services based on probabilistic matching algorithms in compliance with standards specified, adopted, or endorsed by the FHA, NHIN, and ONC.

Core HIE services capabilities will include the following:

- Registry and Directory Services
- Person and Entity Identification
- Record Locator and Search Services

- Identity Management
- Consent Management
- Secure Data Transport
- Data De-Identification and Aggregation
- Analytics
- Data Warehousing

The WVHIN Strategic Plan provides the framework for business and clinical HIE requirements. The business and clinical requirements were included in the WVHIN technology RFP. As part of the RFP process, four task forces were convened: Privacy and Security, Technical, Data Standards, and Functionality. The Technical Task Force's scope encompassed:

- Providing for technical interoperability among service providers.
- Determining how the existing technical requirements change as a result of the functionality identified in the Functionality Task Force, Meaningful Use, NHIN and other requirements.
- Determining the technical constraints on the HIE Strategic Plan and specifically to phasing.
- Determining requirements around message and document format standards such as HL7, IHE, EDI X12, and XML.

The Technical Task Force developed technical requirements (in support of the business and clinical requirements) for inclusion in the HIE RFP. Such requirements included the development of architectural and technical specifications that address issues

of availability, access, privacy, security, and alignment with other exchange architectures such as RHIOs, the NHIN, Social Security Administration, and Medicaid, among others.

Relevant architectural and technical specifications include:

- Conformance to the most current industry standards such as HL7, IHE, CDA, CCD, and HITSP.
- Conformance with NHIN's Performance and Service Specifications and integration with IHE.
- Hybrid architecture with federated and centralized applications; centralized and de-centralized data.
- Basic services to include registry and directory services, person and entity identification, record locator and search services, identity management, consent management, and secure data transport.
- Advanced services: Data exchange, data de-identification and aggregation, analytics and data warehousing.
- Ability to provide connectivity to personal health records (health record banks).

The Privacy and Security Task Force developed requirements to protect health information. Relevant specifications included:

- Authentication, authorization, auditing and secure data transmission standards.
- Conformance with NHIN Performance and Services Specifications which specifically address security provisions.
- Conformance with NHIN policies and procedures to demonstrate trusted

NHIN participant capabilities.

The Data Standards Task Force addressed the following requirements:

- Semantic interoperability among service providers.
- Requirements around standards such as LOINC, SNOMED-CT, NDC, CPT-4, ICD-9, ICD-10, UMLS and RxNORM.
- Strategies for data transformation including: Normalization and encoding, Data mapping and translation, etc.
- Determining operating standards across organizations and data sharing policies.
- Achieving consensus on need for common vocabulary and data type definitions to optimize value of clinical repository content.

The Functionality Task Force addressed:

- Validation of functionalities in the HIE Pathway, prioritize and determine the appropriate phasing of the functionality.
- Identification of additional detailed functionality that is required to meet ARRA's definition of Meaningful Use, business plan considerations, NHIN, and federal grant opportunities.
- Determination of quality and reporting tools needed for the WVHIN to provide value to its stakeholders, promote adoption by physicians, and facilitate physician and hospital compliance with Meaningful Use standards.
- Assessment of potential impact of recommended functions on the business plan, particularly the expenses for technology and staffing.

The RFP identified requirements related to data exchange with the existing MMIS and a "shared services and repositories" approach. The vendor's architectural solution will leverage existing regional and state resources that can advance HIE such as Master Patient Indexes (MPIs), HIOs, payer clearinghouses and MMIS and allow for the use of shared directories for providers, health plans, etc. thus allowing HIE stakeholders access and use of shared services including: Patient matching, provider authentications, consent management, secure routing, advance directives and messaging. The architecture will also support proven commercially available or federally provided shared services such as RxHub, etc.

O.6.3 Technology Deployment

The WVHIN technology partner selection process began in August 2009 and will be completed in August 2010. The transparent, objective process involved over 60+ diverse stakeholders who developed detailed specifications related to technology deployment (and services). Specific requirements were established for:

- **Privacy/Security:** To ensure the system addresses all the privacy and security requirements as defined by the Privacy and Security Task Force and that all state and national laws and regulations related to privacy and security for HIE are met.
- **Technical:** To ensure the system addresses all the technical/architectural requirements as defined by the Technical Task Force. For example, how well the vendor's technical architecture addresses overall operations, business interruption, scalability, flexibility and interoperability; the complexity of the technical platform from a maintenance and support perspective; the degree to which the required systems are integrated in an operational environment or for systems not

requiring integration, the ability to interface and the degree to which the vendor has proven experiences with these interfaces.

- **Data standards:** To ensure that the vendor is apprised of all required data standards and necessity of such standards for HIE. The degree to which the data standards are embedded in the applications. For evolving data standards, the vendor must commit to incorporation of such data standards as required.
- **Functionality:** To ensure the system has all the required applications including Meaningful Use requirements as defined by the Functionality Task Force. For Meaningful Use requirements identified in later years, if the application is not in general release and installed in an operational environment, vendor commits to development and operationalization of functionality prior to Meaningful Use required timeline according to ONC. The applications support workflow and process improvements. CCHIT or other types of certified applications are preferred for those applications that can be certified.
- **Corporate Capabilities:** To ensure the vendor was strong in: HIE market position, overall corporate position, commitment to research and development, positioning with regards to sales and support, track record in delivering on commitments, sales history, staying apprised of national trends in HIE and track record in delivering and installing HIE products and solutions.
- **Implementation Capabilities:** To ensure the vendor understands the WVHIN's implementation schedule and the stakeholders involved and timeframe associated with rollout; to ensure the vendor will commit to meeting implementation milestones and propose an experienced implementation team. Additionally the

vendor had to demonstrate successful implementations in HIEs similar to WVHIN and clients in those exchanges are satisfied with the implementation provided.

Lastly, the vendor need to propose resources (e.g. staff, written material, etc.) to assist with education and outreach.

- **Ongoing Support, Training and Maintenance:** To ensure the vendor provides the ongoing support services including project management, ongoing training and education, systems analysis/architecture/design, system integration, system development and data center/operations support (included help desk/customer support); to ensure the vendor has demonstrated successful support and maintenance functions in sites similar to WVHIN and the clients in those exchanges are satisfied with the services provided and will work collaboratively with the RHITEC in the provision of these services as required.
- **Semantic Interoperability and Coding Standards:** The WVHIN will have an emphasis on interoperability requiring a wide variety of data standards which have been adopted by industry and government organizations (i.e. National Institute of Standards and technology and the Office National Coordinator for Health Technology). These standards are constantly evolving and it is necessary that the process for managing the application of the coding standards is monitored and maintained to confirm continued interoperability. WVHIN requires that its vendor's solution support appropriate standards and the vendor must be proactive in continually updating and expanding to support such standards. To provide the necessary feedback to ONC and other NHIN participants, WVHIN staff are active participants in all ONC meetings and attended their first summit meeting in

Virginia. WVHIN also participates in the multi-state collaborative HIE meetings. The WVHIN Privacy and Security Officer has the primary responsibility for compliance with federal and state legal and policy requirements. The WVHIN Privacy and Security Officer is an individual with the appropriate knowledge and training to access and implement policies and procedures that are compliant with state and federal law and will work closely with ONC and the NHIN as part of the longer-term framework to support interoperability and facilitate the goal of nationwide connectivity.

The technical solution will enable health information exchange throughout the State of West Virginia and assist providers in meeting the Meaningful Use criteria established by the Secretary. The technical architecture will provide the needed flexibility and scalability to support the WVHIN HIE pathway, establishing a technical infrastructure that will allow connectivity and interoperability among diverse stakeholders including providers, HIOs, community health centers, Medicaid, the WV RHITEC, independent laboratories and imaging centers, Public Health, etc. The technical infrastructure will support consumer engagement via its capability to provide connectivity to a variety of commercially available PHRs.

As discussed in the Strategic Plan, in order to meet the published Meaningful Use requirements, the WVHIN revised its original three-phased pathway to an approach that focuses on addressing stakeholder priorities for HIE services and functionality. In essence, WVHIN is focused on providing needed functionality to stakeholders when they want it. A broad segment of WVHIN stakeholders have evaluated vendor demonstrations

of the functionality that was published in WVHIN's 2009 RFP. This functionality includes:

- **Clinical Messaging** – using secure, electronic tools to enable results and reports to be transmitted electronically from data providers to physician practices (e.g. clinical laboratory results).
- **Referrals** – using the WVHIN's connectivity to share information between multiple inpatient and ambulatory providers.
- **Inquiry** – to enable clinical information about a patient to be accessed electronically by authorized providers (e.g. clinical summary exchange).
- **E-prescribing** – WVHIN's solution will enable it to connect to certified EHRs which will support e-prescribing functionality. WVHIN recognizes it may need to provide connectivity to existing pharmacies, etc. that cannot currently receive prescriptions electronically.
- **Public Health Exchange** – to provide the ability to electronically submit reportable disease and registry information to the West Virginia (WV) Bureau of Public Health and to disseminate public health alerts to WVHIN participants.
- **Electronic Eligibility and Claims Transactions** – to provide the capabilities to check patient insurance eligibility, file claims and conduct other business with payers through a single sign on.
- **Personal Health Records** – to provide patients with tools to participate in coordination of the care and in managing their health.

- **Encounter Recording** – to provide office physician practices with capacity to document patient encounters electronically and to update key data elements through an application that provides some EHR-like modules that meet the requirements of Meaningful Use.
- **Computerized Patient Order Entry** – WVHIN’s solution will enable it to connect to certified EHRs which may include CPOE functionality.
- **Registry Tools** – WVHIN’s solution will provide connectivity to existing registries to help track chronic disease management and preventive services.
- **Clinical Decision Support** – WVHIN’s solution will enable it to connect to certified EHRs which may include clinical decision support functionality.
- **Measurement and Reporting** – initially, ability to track levels of activity and eventually, track outcomes for performance measurement reporting.
- **MPI-RLS** – to manage and link critical patient identification information between disparate health systems.
- **Single Portal** – provides users with the ability to access the WVHIN applications and other applications from multiple institutions (i.e. Medicaid, health plans, public health, etc) from one device for purchase or at a no charge for download and/or access from the WVHIN portal.

WVHIN worked with a broad group of its stakeholders and through a consensus based approach ultimately chose WVHIN functionality and services. Selection of functionality was based on supporting providers in meeting Meaningful Use as well as the stakeholders demand for the functionality. WVHIN chose this approach because as

the state designated entity for health information exchange, it is imperative that WVHIN be responsive to the needs of our stakeholders by offering functionality that our stakeholders will value and use. This approach is key to helping WVHIN become financially self sustainable because the approach centers on WVHIN providing services that are in demand.

WVHIN has been an active participant in NHIN activities and has reviewed and provided input to the NHIN core services and specifications. WVHIN's technical architecture aligns with the NHIN architectural layers. More specifically, the WVHIN architecture will function as a node on the network, leveraging the services of the NHIN operational infrastructure (services registry and security infrastructure) while meeting the NHIN foundational specification requirements (messaging and security standards). The WVHIN architecture supports the NHIN's defined business rules and Web Service interfaces. As previously stated, WVHIN's RFP included requirements such as:

- Conformance with NHIN's Performance and Service Specifications and integration with IHE.

O.7 Business and Technical Operations

Risk management is a critical process for managing uncontrollable project activities or circumstances that may result in negative consequences to project or product performance. The WVHIN risk management process is used to identify, assess and document associated risks with cost, resources, schedule, and technical aspects. The WVHIN risk management approach involves two major processes, risk assessment and risk mitigation. Risk assessment includes activities to identify risks, to analyze and

prioritize those risks. Identification involves the process of identifying and documenting specific factors that can negatively impact the WVHIN implementation if not properly managed. Once risks have been identified it is important to prioritize these risks for mitigation and monitoring through the project life cycle. A valuable tool the WVHIN will be using for this process is Microsoft Project which contains templates for the documentation of risks. Risks are generally brought to the forefront through a variety of avenues which include stakeholders, clients, project participants and consumers.

Risk mitigation entails effecting means to reduce a risk impact on the project. During Risk mitigation the project management team develops a strategy to reduce the impact the risk has on the project and develops corrective action plans. The goal is to prevent the risk from materializing or if a risk occurs, guide organizational resource to appropriately respond to it. The WVHIN Management Team will utilize the documentation in Microsoft Project Management to record, monitor and report the results of all mitigation actions.

O.7.1 *Current HIE Capacities*

According to the *Existing Broadband Capabilities and Unmet Demand for West Virginia Health Care System* survey, 23% of West Virginia hospitals belong to an Integrated Hospital/Healthcare Delivery Network. There is almost an even split between public and private sector hospitals in West Virginia. Government operated hospitals constitute 24% of all the hospitals in the state. From an HIE architectural perspective, it is anticipated that an operational HIO will be a node on the statewide HIE network. WVHIN will provide negotiated services to the HIO, such as common repositories,

clinical applications (e-prescribing, claims and eligibility, clinical summary transfer), and the required connectivity to allow the HIO the ability to exchange health information to other appropriate entities via a secure, standards-based exchange model. Operational HIOs are incorporated in the HIE implementation plan and will be connected to the exchange incrementally.

The WVHIN has developed a structured approach for assessing the capabilities of operational HIOs (including those providing services in multiple states) and other potential exchange entities such as payers, etc. WVHIN's outreach consists of several meetings to: Provide education on the WVHIN including functionality, benefits and potential savings for participation; identify barriers; present a potential savings analysis; and present a business plan tailored for the entity. For example, through these outreach meetings and related data gathering activities, the WVHIN understands the HIO's demographics, IT status, and HIT/HIE inpatient and ambulatory supported priorities. Discussion ensues regarding the services each HIO would consider obtaining through the WVHIN such as results/reports delivery, provider referrals, CCD access, public health reporting and alerts, e-prescribing, claims and eligibility, quality reporting, etc.

As a result of the approach, the WVHIN has been able to assess the capacities and needs of potential exchange entities. For example, in working with one regional HIO, the following areas of collaboration were identified:

- Functionality to address, and policies/procedures related to, surrounding states
- Patient identification services

- Connection between state and county for reporting purposes; overall public health reporting
- Disease prevention
- Reduce denials for medical necessity; pre-certification
- Exchange of demographic data; referenced housing state Medicaid data
- Clearinghouse – compliance with 5010 standards
- Data aggregation above community level
- PHR/Patient portal/overall patient access
- Physician systems – vendor negotiations
- Community portal

The identification of these collaborative areas has been invaluable for determining the pricing structure in the WVHIN technology partner RFP.

The WVHIN will provide continual support to expanding the HIE capacity within the state. Working collaborative with its technology partner and the RHITEC, the WVHIN will provide the necessary technical and functional assistance to HIOs and other exchange participants to achieve the WVHIN mission of providing ***“the health care community with a trusted, integrated and seamless electronic structure enabling medical data exchange necessary for high quality, patient-centered care.”***

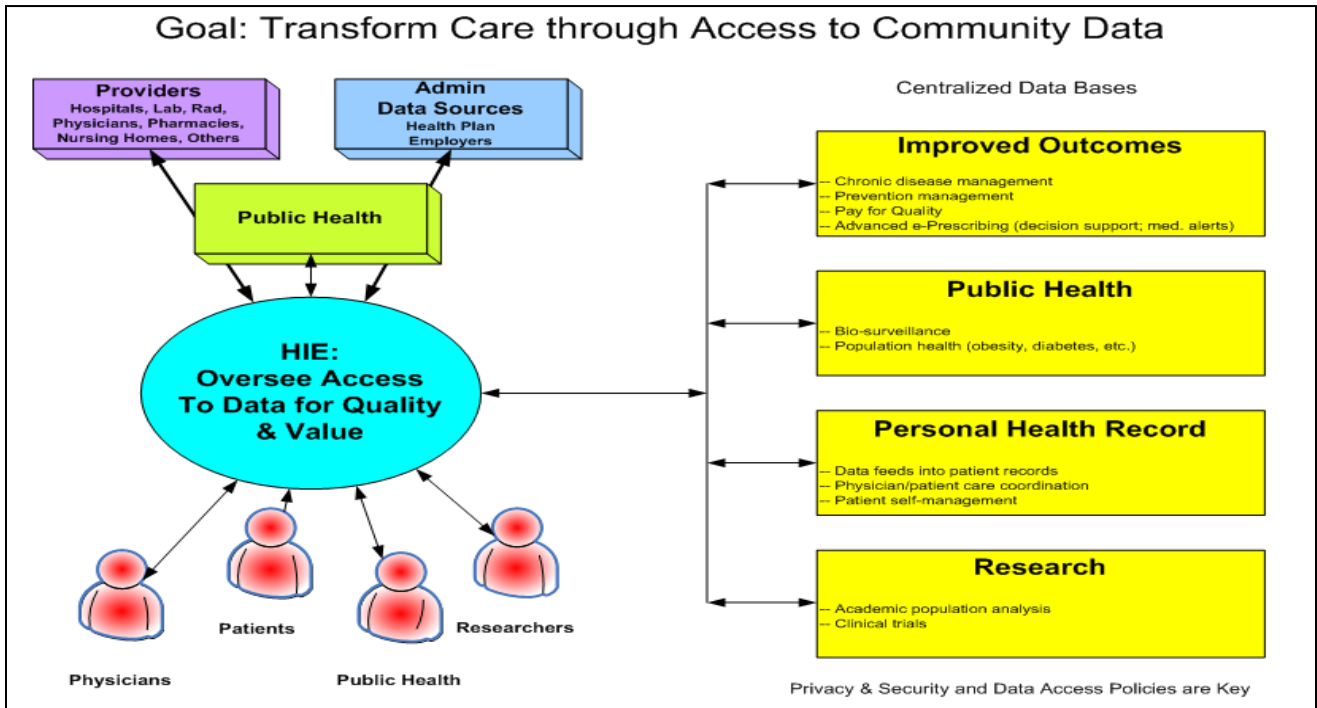
The staffing chart in the Finance Section of the Operational Plan outlines the WVHIN staff and their primary responsibilities to ensure effective statewide HIE operations.

In addition to the assistance provided by the WVHIN staff, WVHIN's technology partner will assist HIOs and others developing HIE capacity within the state. More specifically, this assistance will include implementation and ongoing support services such as:

- Project Management
- System Analysis, Architecture and Design
- System Integration and Testing
- System Development
- Operations Support/Data Center/Hosting
- Business Process Redesign
- Stakeholder Services and Support including help desk and potential collaboration and support with the state designated RHITEC
- Training

O.7.2 State-Level Shared Services and Repositories

The WVHIN's goal to "transform care through access to community data" cannot be accomplished unless it leverages state-level shared services and repositories, as the diagram below depicts.



The WVHIN’s hybrid architecture will support this shared services and repositories approach. Through its outreach efforts, the WVHIN has identified several shared services for consideration including access to: the electronic health records being offered by West Virginia’s RHITEC; several commercially available PHRs; state immunization registries, vital statistics, newborn screening, etc.; Medicaid’s e-prescribing function; and West Virginia research repositories. One such specific example is the WVHIN’s recent collaborative efforts with the WVU the Center for Health Ethics and Law regarding accessing their statewide advance directives registry via the WVHIN.

WVHIN will work collaboratively with DHHR to develop reporting capabilities that will allow DHHR to report required data to the Centers for Disease Control. Data from the Medicaid population will be made available through the HIE as part of

WVHIN's collaboration with the Bureau of Medical Services on their MITA initiative and procurement of a new MMIS. Demonstrated improvements in public health require access to clinical information from the Medicaid program. The WVHIN, through exchanging electronic patient information, will enable Children's Health Insurance Program (CHIP) to improve delivery and coordination of care.

WVHIN is also working with the Broadband Initiative to ensure that coverage will be available in all areas of the state. The WVHIN, working in concert with the RHITEC, has a major focus (through education, training and developing EHR integration as part of our HIE services) on expanding EHR adoption and Meaningful Use to ensure that providers take advantage of the Medicare and Medicaid incentives under ARRA and qualify for incentives. WVHIN will continue to inventory existing state services and repositories and develop a parallel plan (along with implementing the selected solution) to assess feasibility of leveraging these services and repositories. The HIE will provide the electronic infrastructure necessary to allow HIOs and other data exchanges to connect via approved interoperability standards.

WVHIN will continue to collaborate with the West Virginia RHITEC, Medicaid and other exchange partners by hosting the required technical solutions to meet Meaningful Use requirements among the West Virginia provider base.

O.7.3 Standard Operating Procedures for HIE

Standard Operating Procedures (SOPs) and related HIE services will be developed around major business and technical operating functions such as procurement, requirements identification, process redesign, functionality development, project management methodologies, help desk, systems maintenance, change control, program

evaluation and reporting. SOPs and related processes will be a collaborative effort among DHHR, GOHELP, WVHIN, Medicaid, the HIE vendor and identified advisory committees. Advisory committees will be chartered to provide input into SOPs and processes related to clinical and business applications, technology, finance, privacy and security, technical operations, support services, establishing benchmarks against which performance can be measured and tracked, and reporting requirements related to these focus areas.

O.7.4 Approach for Monitoring/Plan for Remediation of HIE Performance

The WVHIN will develop status reports against which performance of the HIE can be assessed. Such reports will include data related to the types and numbers of participants, the numbers and types of transactions exchanged, etc. Additionally, the reports will include any data required by the ONC for reporting purposes. Data will be trended over time. Issues will be documented along with recommended resolutions and identified parties responsible for resolution. Reports will be reviewed on a monthly basis with the WVHIN staff, the WVHIN Board, and DHHR.

O.8 Legal/Policy

O.8.1 Establish Requirements

The WVHIN will comply with all applicable federal and state legal and policy requirements through the disciplined use of a recognized privacy and security life cycle. The following cycle outlines the process for developing, evolving, and implementing policy requirements to enable the secure exchange of health information. It also identifies the governance and oversight mechanisms to be used to ensure overall legal/policy requirements.



Discover Phase:

- Name Privacy and Security Officers
- Confirm completeness of legal framework
- Validate WVHIN’s designation as business associate
- Build from the WVHIN’s Privacy and Security Framework, which clearly delineates policy options based on legal framework and best practices (See WVHIN’s Privacy and Security Framework best practices recommendations) (*Appendix M*)
- Identify all new policy options, barriers and requirements emanating from HITECH and any other laws passed, or recommendations developed since 2008. For state law changes since that date, the PMT’s updated preemption analysis will be a resource, as it also serves as WV’s comprehensive database of all health-related laws: www.privacy.wv.gov
- Prepare comprehensive listing of all recent best practices and recommendations for privacy and security of HIE. WVHIN will look to HHS sponsored working groups, including NCVHS, eHealth Alliance and others

- Create PHI flow documentation
- Perform risk assessment and develop mitigation plan
- Migrate all harmonized legal requirements to crisp process flows delineating policy options

Build Phase:

- WVHIN's Privacy and Security Committee will be presented with policy options, with existing requirements as the floor, around each principle within its Privacy and Security Framework. WVHIN's Privacy and Security Committee will make recommendations to the WVHIN board regarding related policy decisions. Output from the committees will result in policies, procedures, and terms and conditions of the WVHIN's participation agreement. The WVHIN board approves all final policies decisions in open public meetings.
- Implement all policies and procedures
- WVHIN recognizes that while uniform, completely interoperable solutions occur at the nationwide level, this will undoubtedly take some time. In the interim, WVHIN will pursue solutions that afford more immediate, incremental results, including:
 - Exchange with neighboring states on a trading partner basis, with interstate data sharing agreements that reflect common terms. This approach could include a federally designated organization to coordinate and support this trading partner approach.
 - Develop interstate HIE use cases that allow sharing of defined PHI based on a uniform consent requirement. Many states do not require consent for non-

emergency treatment. Perform broader analysis of disclosure and consent requirements and document likely outcomes under specific HIE use cases. Then propose a framework for HIE policy development.

- Create a rules engine based on requirements of surrounding states.

Communicate:

- Place all approved policies on WVHIN website, www.wvhin.org.
- Develop and deploy an education or training plan to include its employees, vendors, participants, and public.

Evolve:

- Continually evaluate its privacy and security programs
- Engage in organizational development from all lessons learned, particularly around incident response and the complaint process
- Periodically perform a risk assessment and update its mitigation plan as appropriate
- Periodically survey its stakeholders and its environment to assess the need to revisit its policies and do so as needed

O.8.2 Privacy and Security Harmonization

WVHIN continues to evaluate and will implement the best approach to interstate exchange based upon known options identified from:

- HISPC Reports
 - Health Information Security and Privacy Collaboration
 - Harmonizing State Privacy Law
 - Intrastate and Interstate Consent Policy Options

- Interstate Disclosure and Patient Consent Requirements, March 31, 2009
- HISPC Reports on State Law, Business Practices, and Policy Variations, January 13, 2010
- Policy Strategies for Advancing Interstate Health Information Exchange
- A Report to the State Alliance for e-Health, October 2009
- National Committee on Vital and Health Statistics
- Recommendations on Privacy and Confidentiality, 2006-2008 and May 2009
- And other identified reports

To ensure harmonization, WVHIN has updated the 2008 legal opinion letter (referenced in the Strategic Plan Section, Legal/Policy Sub-section) and no new requirements were identified from the original 2008 review. WVHIN has confirmed the completeness of its legal framework. An updated 2010 legal analysis was conducted to include HITECH provisions (*Appendix N*).

O.8.3 Federal Requirements

WVHIN is participating in and/or monitoring federal and national task forces and committees to stay abreast of changing federal requirements, and to incorporate new and changing requirements. WVHIN is employing a legal team to ensure we will be able to exchange with federal care delivery organizations, and will prepare the appropriate agreements based on federal care delivery models and best practices.

O.9 Outcomes and Performance

Within WVHIN's RPF, vendors were required to describe how their system addresses the reporting of provider participation in HIE as outlined in the State HIE Cooperative Agreement Program Funding Opportunity Announcement (FOA). These participation metrics include:

- Percent of providers participating in HIE services enabled by statewide directories or shared services.
- Percent of pharmacies serving people within the state that are actively supporting electronic prescribing and refill requests.
- Percent of clinical laboratories serving people within the state that are actively supporting electronic ordering and results reporting.
- Providers' use of electronic prescribing, exchange of clinical summaries among treating providers, immunization, quality and other public health reporting and eligibility checking.

WVHIN requires the chosen vendor's system track the participation metrics mentioned above. Furthermore, WVHIN will work with the chosen vendor to establish a reporting schedule for providing such metrics to WVHIN staff. WVHIN also recognizes that it will be required to submit an annual report to ONC regarding statewide HIE alignment with other federal programs, such as the Regional HIT Extension Centers, workforce development initiatives, broadband initiatives, etc.

O.10 Planning

WVHIN leadership recognizes that it will be required to submit evidence of stakeholder endorsement of its Strategic and Operational Plan. The WVHIN has obtained approval on the Strategic and Operational Plan by WVHIN's Executive Committee and has shown extensive stakeholder endorsement of WVHIN activities, services offerings, etc. throughout this plan. Subsequently, ongoing revisions to the plans will be reviewed by the Executive Committee and the WVHIN Board as needed.

O.11 Training and Technical Assistance

The WVHIN will participate in NHIN Governance training and is looking forward to further guidance on this. Furthermore, WVHIN will monitor and review updates to the statewide HIE toolkit modules.

O.12 Gap Analysis

Identified Gap	Priority	Description of the “As-is”	Strategy – Getting to “To-be”
<p>GAP: Need to advance e-prescribing throughout the state of WV. This is a key objective of 2011 MU.</p>	<p>PRIORITY: 1 – Closing this gap is crucial to the success of creating an environment where all providers can achieve 2011 MU. WVHIN will offer e-prescribing when the system goes live.</p>	<p>AS-IS: In 2007, the WV legislature passed a law allowing e-prescribing; before that, WV was only one of two states in the nation that did not allow e-prescribing. Thus, within two years, WV has made significant advancements in e-prescribing. 2009 data¹ shows:</p> <ul style="list-style-type: none"> • 946 physicians utilized e-prescribing which is 34% of WV physicians • 436 community pharmacies utilized e-prescribing which is 88% of the pharmacies • 1.05 million physician prescriptions were filled electronically which is 90% of the physician total 	<p>TO-BE: The WVHIN will only connect certified EHRs (which will include e-prescribing functionality). WVHIN will also include the e-prescribing functionality developed for Medicaid under the Enhanced Medication Management Grant for those EPs that do not have a system.</p> <p>Key e-prescribing functionality to be provided by WVHIN includes:</p> <ul style="list-style-type: none"> • Provide required utilization metrics for Meaningful Use • Maintain medication lists and history • Provide drug to drug, drug to allergy and other patient safety alerts • Drug plan authorization requirements and eligibility • Provide listing of generic drugs <p>According to 2009 data, 34% of WV physicians e-prescribe; this leaves approximately 66% of physicians that do not e-prescribe. Working closely with the WV RHITEC, WVHIN, through its Medical Referral Region (MRR) roll-out process, will identify physicians that do not currently e-prescribe and offer e-prescribing to them through the WVHIN. WVHIN plans to roll-out its HIE in the Wheeling MRR which has close to 300 physicians. During this roll-out, for example, WVHIN will identify physicians that need the e-prescribing functionality. As the WVHIN continues to roll-out the HIE by MRR, it will continue to work with the provider community to identify gaps in e-prescribing and offer WVHIN’s solution. WVHIN plans to have 70% of physicians connected to the exchange, and utilizing e-prescribing functionality by 2012.</p> <p>A WVHIN board member is also a board member of the WV Board of Pharmacy. WVHIN will work with this WVHIN board member to identify the 12% of community pharmacies that do not utilize e-prescribing. We suspect these pharmacies are located in rural areas where they may be unable to connect to the exchange. Thus, WVHIN will ensure that pharmacies that are not able to connect will at least be able to receive e-prescribing notification via fax.</p>
<p>GAP: Need to enable receipt of structured lab results. This is a</p>	<p>PRIORITY: 1 - Closing this gap is crucial to the success of creating an environment where all</p>	<p>AS-IS: Structured laboratory results are a common part of every EHR system but the ability to share this information from system to system is generally</p>	<p>TO-BE: The WVHIN is planning to implement a best-in-breed clinical workflow application that can support receipt of structured lab results. This application must integrate with multiple EHRs and physician practice management systems. WVHIN’s system will allow physicians to order diagnostic tests and review laboratory results online.</p>

¹ SureScripts, *West Virginia Progress Report on E-Prescribing*, <http://www.surescripts.com/about-e-prescribing/progress-reports/state.aspx?state=vv&x=48&y=18> (accessed July 21, 2010).

key objective of 2011 MU.	providers can achieve 2011 MU. WVHIN will enable receipt of structured lab results when the system goes live.	<p>accomplished through complex point to point interfaces.</p> <p>A number of physicians do not have EHR systems, therefore there is no mechanism for sharing laboratory results. According to a 2009 statewide survey², 44% of physicians responding to the survey said they were using an EHR; 18% said they have plans to implement an EHR in the next 2-4 years and 38% said they do not have a current plan for acquiring an EHR system.</p> <p>There are a number of remote areas in the state of West Virginia where broadband is still unavailable. The State of WV recently received \$126 million in federal stimulus funds for the Statewide Broadband Infrastructure Project. The Project plans to bring high-speed Internet access to WV's vastly underserved region by adding about 2,400 miles of fiber. WVHIN has received assurance from the Secretary of Commerce which oversees the Broadband Infrastructure Project that all identified needs to healthcare providers will be incorporated into the Broadband Project.</p> <p>WVHIN currently has a</p>	<p>WVHIN will offer a clinical portal which allows physicians and other users easy and prompt access to integrated clinical patient information. This can be used by physician offices that do not yet have an EHR.</p> <p>As the WVHIN does outreach within each MRR, it will identify the broadband needs of providers that may not have broadband. WVHIN will then work with the Statewide Broadband Infrastructure Project to expand broadband to identified providers.</p> <p>West Virginia needs to ensure that all 1,813 certified laboratories have the ability to send lab results electronically. A survey may need to be conducted to identify those laboratories that already have the capability to send results electronically and WVHIN will determine the best methods for implementation if they are not already providing the service. WVHIN plans to survey the labs in 2010.</p> <p>WVHIN will partner with laboratories like LabCorp and Quest to provide structured laboratory results through the HIE. WVHIN already has a working relationship with LabCorp. For example, a representative from LabCorp participated in WVHIN's live vendor demonstrations.</p>
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² KRM Associates for the WV Health Care Authority, *Existing Broadband Capabilities And Unmet Demand for West Virginia's Health Care System*, January 2009.

		<p>request in to Benjamin Snyder, CMS Regional III Office, to obtain data on the percentage of clinical laboratories sending results electronically.</p> <p>West Virginia currently has 1,810³ certified laboratories which may need to be surveyed to determine their ability to transmit laboratory results.</p> <p>Several major laboratory vendors (LabCorp, Quest, etc.) have the ability to send structured laboratory results utilizing National Standards and LOINC. WVHIN has already identified the 30 hospitals in the state that LabCorp serves.</p>	
<p>GAP: Need to enable exchange of patient care summaries. This is a key objective of 2011 MU.</p>	<p>PRIORITY: 1 - Closing this gap is crucial to the success of creating an environment where all providers can achieve 2011 MU. WVHIN will enable exchange of patient care summaries when the system goes live.</p>	<p>AS-IS: 2009 data⁴ shows that West Virginia's providers and healthcare organizations are adopting and using HIT, however progress in this area still needs to occur:</p> <ul style="list-style-type: none"> • 23% of West Virginia Hospitals currently participate in a Regional Health Information Network (RHIO) or Health 	<p>TO-BE: The WVHIN will choose a vendor in August 2010. The vendor's system will enable data to be consolidated, shared and viewed across disparate systems. WVHIN's chosen vendor's system must support data aggregation, clinical messaging, a master patient index, a record locator, connectivity, a clinical portal, etc.</p> <p>WVHIN's pilot site will roll-out in the Wheeling MRR in early 2011. Wheeling Hospital will exchange patient care summaries and other data with the 300+ physicians in the area.</p>

³ CMS, CLIA Laboratory Demographic Information Report, http://www.cms.gov/CLIA/20_CLIA_Laboratory_Demographic_Information.asp?CLIANum=&LabName=&GeoCity=&state=WV&GeoZip=&appType=%25&isSubmitted=clia2 (accessed July 21, 2010).

⁴ KRM Associates for the WV Health Care Authority, *Existing Broadband Capabilities And Unmet Demand for West Virginia's Health Care System*, January 2009.

		<p>Information Network (HIN)</p> <ul style="list-style-type: none"> • 21% of clinics and county health departments have implemented or begun implementation of EHR systems • 44% of physicians have an EHR system • The number of hospitals operating and fully utilizing an EHR system is less than 50%. • VA Hospitals are using the Federal Health Information Exchange (FHIE) to exchange data with the Department of Defense (DoD) hospitals • 64% of the hospitals use teleradiology • 54% of hospitals report having T-1 or T-3 Internet connectivity • Only half of the small physician offices reporting have a Practice Management System • 18% of small physician offices reported currently using teleradiology • Almost all physicians have an Internet 	
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		connection	
<p>GAP: Need to better understand the HIT infrastructure of WV health departments and the Bureau for Public Health.</p>	<p>PRIORITY: 3 – WVHIN will provide one connection point for providers to enable two-way data exchange and communication with the Bureau for Public Health.</p>	<p>AS-IS: Data from 2009⁵ shows:</p> <ul style="list-style-type: none"> • WV has 49 health departments; 17 of the 21 health departments that responded a statewide survey said they had implemented an EHR system. <p>The Bureau for Public Health is developing the WV Electronic Disease Surveillance System (WVEDSS). WVEDSS is a Web-based electronic disease reporting system which will provide manual electronic disease reporting from health departments through key entry as well as direct electronic transfer of test results from laboratory information systems.</p> <p>WV Statewide Immunization Information System (WVSIIS), also supported by the Bureau of Public Health, allows many immunization providers (often from health departments) to enter their doses into the immunization registry via the WVSIIS web portal.</p>	<p>TO-BE: WVHIN will support the following functionality as it relates to public health:</p> <ul style="list-style-type: none"> • Send electronic data feeds of reportable conditions directly from providers to the Bureau for Public Health. WVHIN is in the process of setting up an initial meeting with a representative from WVEDSS in order to better understand how the HIE can work with the WVEDSS. • Send immunizations from physicians electronically to the Bureau for Public Health. Providers that connect to the WVHIN will no longer have to directly access the WVSIIS and manually enter immunization information. Providers will enter immunization information into a patient’s chart accessed via the WVHIN and the information will automatically be sent to WVSIIS. • Transmit public health alerts from the Bureau for Public Health to WVHIN users. • Enable clinicians to electronically access the state immunization registry and other public health registries. WVHIN users can access these registries through WVHIN’s single sign-on portal. • Enable EPs/EHs to report to CMS the number of immunizations and reportable conditions they report electronically in order to document achievement of MU. <p>WVHIN will survey the 49 health departments to better understand their HIT infrastructure (i.e. ability to electronically send and receive data on immunizations, lab results, etc). WVHIN plans to survey the health departments in 2010.</p>

⁵ KRM Associates for the WV Health Care Authority, *Existing Broadband Capabilities And Unmet Demand for West Virginia’s Health Care System*, January 2009.

<p>GAP: Need to better understand which health plans are supporting electronic eligibility and claims transactions.</p>	<p>PRIORITY: 2 - Many providers see administrative functions, such as the ability to check patient insurance eligibility and electronically file claims, as one of the perks of HIE. WVHIN needs to support this functionality in order to draw physicians to the exchange.</p>	<p>AS-IS: Many providers see administrative functions, such as the ability to check patient insurance eligibility and electronically file claims, as one of the perks of HIE.</p> <p>WVHIN is negotiating with two claims and eligibility vendors, NaviNet and Quadax, to provide a solution through WVHIN at no cost which will enable providers to check claims and eligibility status electronically.</p> <p>WVHIN has identified major health plans in the state that may have an interest in becoming a participant in the WVHIN. These plans include: Mountain State BlueCross BlueShield, Health Plan of the Upper Ohio Valley, Carelink, Coventry Health and Life, United Healthcare Insurance. Medicaid and PEIA are also committed to participating in the WVHIN (Medicaid covers approximately 16% of the covered lives). WVHIN also needs to identify self-insured employers that may have an interest in participating in the WVHIN.</p>	<p>TO-BE: WVHIN will offer providers the capability to electronically check patient insurance eligibility and file claims with health plans through a single sign-on. To facilitate this functionality, WVHIN needs to better understand which health plans are supporting electronic claims and eligibility.</p> <p>WVHIN is in the process of planning a meeting with the major health plans in the state which is scheduled to take place in the next few months. At this meeting, WVHIN will learn more about which health plans are supporting electronic eligibility and claims transactions.</p> <p>WVHIN will work with the WV Self-Insurers Association to identify self-insured employers. The timeframe for this is in 2011.</p>
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