Strategic Plan

March 2010

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Executive Summary

Governor Rendell established the Governor's Office of Health Care Reform (GOHCR) in 2003 to coordinate state health policy and to assist the Governor in developing a plan for health care reform for Pennsylvania. In January 2007, GOHCR published "Prescription for Pennsylvania" (Rx for PA)[1], a comprehensive roadmap to contain costs while improving affordability, access and quality of health care in Pennsylvania. Rx for PA identified the ability to exchange health care information as critical for improving health care quality and efficiency, and established ambitious goals for promoting the adoption of electronic medical records/electronic health records (EMR/EHRs) and e-Prescribing.

This Executive Summary describes why creating a health care information exchange for Pennsylvania is important and provides a brief look at the current state of EMR/EHR adoption and health information exchange in Pennsylvania. It also describes the vision and goals that will guide development of PHIX. Finally, the summary discusses the recommended answers or approaches to each of the five questions that Pennsylvania must address in its Strategic Plan.

GOHCR has been actively pursuing a consensus approach to developing a statewide exchange, working with a wide range of stakeholders to fully understand the needs and capabilities of the health care provider community and consumers. Creating the Pennsylvania Health Information Exchange (PHIX) is the next step to establishing a 21st century health information technology infrastructure for Pennsylvania.

PHIX is the electronic highway that allows authorized users to securely exchange patient information for the improvement of health in Pennsylvania.

Health Information Exchange (HIE) is the electronic movement of health-related information among organizations according to nationally recognized standards[2].

The Health Information Technology for Economic and Clinical Health Act of 2009 (the HITECH Act), signed into law on February 17, 2009, provides states with significant financial assistance to help transform the way health information is captured, used and shared by health care practitioners and their patients. The Act commits more than $48 billion[3] in grants, loans and incentives to encourage "meaningful use" of EHRs by hospitals, physicians and other practitioners in a secure technology environment. Funds are also available for states to plan and implement statewide health care information exchanges, under the *State Health Information Exchange Cooperative Agreement Program*.

In order to take advantage of the federal resources for creating PHIX, Pennsylvania must submit comprehensive strategic and operational plans to the Office of the National Coordinator (ONC) in the Department of Health and Human Services.

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[1] http://www.gohcr.state.pa.us/prescription-for-pennsylvania/Prescription-for-Pennsylvania.pdf

[2] Definition adopted by the Office of the National Coordinator for Health Information Technology in the Centers for Medicare & Medicaid Services and the National Alliance for Health Information Technology.

[3] See estimate released May 2009 by the U.S. Department of Health and Human Services, available at http://www.hhs.gov/recovery/index.html. This includes an estimated $46.8 billion in Medicare and Medicaid electronic health record incentive payment funding and $2 billion to be distributed through the Office of the National Coordinator in a series of grants, loans, and technical assistance programs designed to support provider EHR use and to spur health information exchange.

The Strategic Plan must describe how Pennsylvania will enable health care providers, consumers, insurers and other stakeholders to exchange health information electronically and how it will address the five key domains.

- **Governance -** What entity will be responsible for making decisions about the exchange of health information, how will stakeholders and consumers be represented, and how will accountability be addressed?
- **Finance -** How will PHIX be financed over both the short and long-term?
- **Technical Infrastructure -** What are the functional and technical capabilities required for PHIX to meet the needs of Pennsylvania's health care providers and consumers?
- **Business and Technical Operations -** How will the platform needed for PHIX be obtained, implemented, and maintained, how will new functionality be added, and how will providers and consumers be informed?
- **Legal/Policy -** What legal and policy decisions and enforcement mechanisms will be put in place to ensure that information exchange meets the requirements of federal and state privacy laws?

This Strategic Plan provides a full assessment of Pennsylvania's readiness for HIE and more details about the recommended approach for each domain, as well as a description of other options that were considered.

Why Health Care Information Exchange Matters

Electronic health care information exchange has the potential to significantly improve the quality and efficiency of care by allowing immediate access to critical information about a patient when health care practitioners most need it - at the point of care.

The best way to explain how important the electronic exchange of information can be is to take a look at a hypothetical trip to the Emergency Room (ER) in the current world and compare it to how it will be when health care providers are using EHRs and the infrastructure to securely share that information is in place.

Consider the following scenario.

It's Saturday night at midnight and you have been involved in a car accident and are critically injured. The ambulance has taken you to a hospital that has never treated you before. As the ER staff begins treatment, the health care provider (Clinician) has a few important questions about your medical history. What medications are you taking? Do you have any allergies? Who is your primary care provider? In your current state you are unable to provide the answers and there is no access to your medical records.

The following chart shows the differences in how your ER visit is handled with and without EHRs and PHIX.

ER Visit *without* EHRs and PHIX	ER Visit *with* EHRs and PHIX
Clinician knows nothing about your health history. Must be gotten from you or family members, if any are present	Clinician is able to access electronic health records, including • Medications that you are taking • Chronic conditions for which you are being treated • Primary care practitioner and specialists treating you • History of recent doctor/hospital visits • Allergies • Diagnostic tests and laboratory results
Clinician orders full battery of diagnostic tests to determine your condition	Clinician is able to view critical information from your electronic health record and determine what tests, if any, need to be run
Hours and many dollars are *spent* evaluating your situation	Hours and many dollars are *saved* evaluating your situation
Potential for medication errors	Medications you take are known, can avoid drugs that are contraindicated
You take home discharge instructions. Your primary care practice or specialist may request paper record which will arrive in days or weeks	Report on treatment and care needed post-ER immediately available to primary care practice and/or specialists treating you

Widespread adoption of EMR/EHR technology and use of the PHIX will dramatically affect the way day-to-day business is conducted by primary care practitioners and specialists.

Primary Care Visit *Without* EHRs and PHIX	Primary Care Visit *With* EHRs and PHIX
Your record is a thick file folder of paper	Your record is totally computerized
All information is hand-written into chart and may be illegible. (You provide new health history for nearly every medical appointment)	All information is entered in computer
Clinician asks about visits to specialists since last visit - nothing in file. Information on ER visits or hospitalizations may or may not be available to HCP, lag time is common	Clinician has immediate access to summary information from visits to specialists, ER and hospital since last visit
Clinician orders lab tests, writes out the lab order, gives to you to take to lab	Clinician enters lab orders and electronically transmits to lab
Clinician tells you to call back in several weeks for test results	You have the ability to import your lab results into your personal health record once the Clinician has reviewed the results
You are the source of information, such as the medications being taken	Clinician can see what medications have been prescribed by others in EHR
Clinician writes out prescription for medications, gives to you to take to pharmacy	Clinician enters prescriptions into the EHR which electronically transmits it to the pharmacy
Clinician must glean critical information about key health issues from thick health care paper records	Clinician alerted when preventive care is due, and when best practice requires intervention (e.g., test, lab work)

Using capabilities provided by PHIX, specialists will be able to view health history, recent lab and imaging results, hospital records, medications prescribed and other key information about the patient. This will reduce the need for duplicate tests and provide information needed to avoid harmful drug interactions and ensure that all drugs prescribed are needed.

The use of PHIX can also reduce the administrative burden imposed on health care practitioners, hospitals, nursing homes and laboratories by state and federal reporting requirements. State and federal agencies currently require health care institutions to submit a myriad of public health surveillance information, health care quality and cost data. Health care providers must enter the required information into seven or more different applications. Wider adoption of EHRs by practitioners and health care facilities and use of PHIX to move the information to public health agencies can make reporting more simple and efficient.

Where Pennsylvania is Today

Hospitals and primary care providers are increasingly using health information systems all across Pennsylvania providing a strong foundation for HIE readiness. The results of a 2008 survey of Pennsylvania hospitals demonstrated that 84% of Pennsylvania's acute care hospitals are using some functionalities of an EHR, though only 2.4% had a comprehensive system in

place in all clinical areas. The high adoption rate in hospitals is in part because 98 of the state's 165 general acute care hospitals are part of larger health systems. Physician adoption of EMR/EHRs is proceeding more slowly – about 20% of physicians surveyed reported implementation of at least some functions of an EMR/EHR. These indicators show progress, but Pennsylvania has much work to do to ensure wider EHR/EMR adoption and the broadband capacity necessary to allow optimum exchange of clinical health data.

Pennsylvania has a functioning regional health information organization (RHIO) in northeast Pennsylvania, as well as a number of health system or hospital enterprise networks across the state. Planning efforts are also underway for at least one additional RHIO. These offer important building blocks for PHIX.

Approach to PHIX Planning

Planning for PHIX was already underway by GOHCR when the HITECH Act was passed by Congress as part of the American Recovery and Reinvestment Act (ARRA) of 2009.

To develop the PHIX Strategic Plan required for federal funding, GOHCR convened a PHIX Core Team comprised of stakeholders representing the Commonwealth of Pennsylvania Department of Public Welfare (DPW), the Department of Health (DoH), the Office of Administration (OA), and the Office of Long Term Living (OLTL). GOHCR also reached out to representatives from the provider community, academic programs, regional health information organizations, patient advocacy, and payer groups for input. A draft Strategic Plan was completed on November 20, 2009 and offered for public comment for a 30–day period. During the comment period, GOHCR presented the plan at more than 25 meetings of health care provider groups, advisory committees to DPW's Office of Medical Assistance Programs (OMAP), the Department of Aging (DoA) and DoH, consumers and others. GOHCR also held a public meeting attended by more than 100 individuals to explain the plan, respond to questions and listen to feedback. Written comments were received from 44 organizations and citizens. This plan has taken into consideration the comments received during that public input process.

ARRA offers an unprecedented opportunity for states to make giant steps forward in adoption of electronic health information technology. Federal incentive money for Medicaid and Medicare providers is expected to be available beginning in 2011 for those who can demonstrate "meaningful use" of EMR/EHRs. Proposed regulations defining "meaningful use" were published in the Federal Register by the center for Medicare & Medicaid Services on January 13, 2010[4]. The earlier providers adopt EHRs and achieve "meaningful use", the more federal funding they can receive. Medicare providers that do not adopt EHRs and achieve "meaningful use" by 2015 will face a reduction in their Medicare reimbursement. Since "meaningful use" requires connections between multiple health care providers in different health care systems, Pennsylvania must move quickly to put PHIX in place.

PHIX is a necessary foundation for providers to exchange health care information with labs, pharmacies and other providers. Absent a functioning statewide information exchange, the ability for providers to benefit from the federal incentive funding will be limited. Therefore, it is critical that Pennsylvania move forward expeditiously to put PHIX in place as soon as is reasonably possible.

[4] The proposed rule can be accessed at: http://edocket.access.gpo.gov/2010/pdf/E9-31217.pdf

Vision and Goals for PHIX

The vision for PHIX is to strengthen Pennsylvania's health care system through the timely, secure and authorized exchange of patient health information among health care providers. Health information exchange through PHIX will support patient-centered health care and continuous improvements in access, quality, outcomes and efficiency of care.

PHIX's strategic goals in support of the vision.

- ❑ Create immediate access to critical health information for patients and providers
- ❑ Help transform health care delivery to a quality patient-centered model
- ❑ Support the "meaningful use" of Electronic Medical Records and Electronic Health Records used throughout the Commonwealth
- ❑ Protect personal health information through privacy and security policies and best practices
- ❑ Strengthen existing and future health initiatives to improve clinical outcomes, improve patient safety, ensure security and reduce costs by:
  - linking the full continuum of providers — public and private providers, physicians, clinics, labs and medical facilities;
  - supporting the health information exchange needs of the Medical Assistance Program, the Commonwealth Chronic Care Initiative, Public Health, Long-Term Living and other health care initiatives;
  - strengthening the continuity and coordination of care; and
  - minimizing duplicate testing and services.
- ❑ Engage and educate consumers and providers about the benefits of health information exchange, and ensure knowledge about privacy rights and protections
- ❑ Ensure that the costs for PHIX do not add to the cost of health care and that PHIX assists in lowering the cost of health care in Pennsylvania
- ❑ Create an integrated governance structure for PHIX that includes a role for key community stakeholders with statewide collaborative capabilities
- ❑ Develop an enterprise approach for Pennsylvania that is aligned with the National Health Information Technology (HIT) vision, agenda and standards
- ❑ Facilitate health care providers' ability to qualify for Medicare and Medicaid incentive payments

Approach to ONC's Five Domains

This Strategic Plan describes how GOHCR proposes to address each of ONC's five domains for a statewide HIE. Building on the HIT foundation that exists in Pennsylvania, this Strategic Plan establishes a framework for achieving the PHIX vision for strengthening a patient-centered health care system.

In developing this Strategic Plan alternatives in each domain were considered.

Governance.

- ❑ Commonwealth Agency
- ❑ Non-profit Entity
- ❑ Public/Private Collaborative

Finance.

- ❑ Public Sector Funding
- ❑ Assessment on Medical Claims or Payments
- ❑ Subscription/Membership Fees
- ❑ Transaction Fees
- ❑ Value-added Services

Technical Infrastructure, Business and Technical Operations.

- ❑ Procurement through Request for Proposal process
- ❑ Regional Collaboration with Established HIE

Legal/Policy.

- ❑ ***Opt-out*** methodology where patients are automatically included in the PHIX process
- ❑ ***Opt-in*** methodology where patients would have to specifically sign-up (opt-in) to have their records accessible through PHIX

The recommendations for how to move forward in each of the domains are summarized below.

Table 1 - Summary of ONC's Five Domains and GOHCR Recommendations

Domains	Summary
Governance	❑ The PHIX Start-up ▪ The initial start-up of PHIX is being managed by the Commonwealth in a highly-collaborative effort with stakeholders. The existing governance structure has already completed significant work needed to launch PHIX and will be augmented to ensure that PHIX is given the best possible start during 2010. ❑ Long-Term Governance through a Public/Private Partnership ▪ A public authority will be created through legislation to manage the long-term governance of PHIX. The public authority will be accountable to a board of directors comprised of key stakeholders, with day-to-day decisions made by an Executive Director. The Chair of the Authority will be appointed by the Governor.
Finance	❑ Startup Funding ▪ The anticipated HITECH funding for Pennsylvania of $17.1 million and GOHCR's current PHIX budget of $1 million will be used for implementation of PHIX beginning in 2010.

Domains	Summary
	❑ Long-Term Sustainability ▪ The Finance Work Group from the PHIX Advisory Committee is currently working to recommend a business case and long-term financing plan for PHIX. ▪ Options for additional revenue for building the infrastructure under consideration include voluntary contributions from insurers, health systems, Medicaid and others who will benefit. ▪ Subscriptions and transaction fees are under consideration to help pay for ongoing cost.
Technical Infrastructure	❑ Technical Platform ▪ GOHCR will issue a Request for Proposals to select a vendor to build the PHIX infrastructure. ❑ Promoting HIT Adoption ▪ The PHIX governing entity will work with the Pennsylvania Regional Extension Center (PaREC) to promote HIT adoption by hospitals and physicians which is vital to the success of the PHIX technical infrastructure.
Business and Technical Operations	❑ Implementation Strategy for PHIX ▪ An incremental approach will used for implementing PHIX, leveraging the health care organizations capable of supporting HIE and supporting the needs of state Medicaid providers. ❑ PHIX Communications Strategy ▪ A detailed communications plan will be designed to educate consumers and providers about how electronic records and health information exchange can improve the quality and efficiency of health care for Pennsylvanians.
Legal/Policy	❑ Privacy and Security ▪ PHIX infrastructure will meet the required federal and state standards for data security and integrity and establish appropriate authentication, credentials and consent management mechanisms to ensure protection of consumer privacy. ❑ Patient Consent and Other Policies ▪ The approach to patient consent for sharing health information through PHIX will maintain the status quo. Except for super-protected information (HIV/AIDS status, mental health and substance abuse treatment, etc.) consent would be established based on existing laws and policies. Patients signing HIPPA consent forms would have their health information included for HIPPA approved purposes unless they affirmatively opted out.

Conclusion

The use of PHIX as a secure statewide information exchange can offer necessary electronic health information to practitioners providing services at the point of care, improve quality outcomes, enhance patient safety, reduce redundant tests and procedures, lead to a reduction in overall health care costs and improve efficiency in public health monitoring and tracking.

PHIX will help to create a new world of health care.

Strategic Plan

1.0 Introduction

Every Pennsylvanian deserves access to affordable, quality health care. The Governor's Office of Health Care Reform (GOHCR) was established by Governor Edward G. Rendell in 2003 to coordinate state health policy and to assist the governor in developing a plan for health care reform. In January 2007, GOHCR published "Prescription for Pennsylvania" (Rx for PA)[1], a comprehensive road map to contain costs while improving the affordability, access and quality of health care in the Commonwealth. Rx for PA identified the ability to exchange health care information as critical for improving health care quality and efficiency, and established ambitious goals for promoting adoption of electronic medical records or electronic health records (EMR/EHRs) and e-Prescribing. Creating the Pennsylvania Health Information Exchange (PHIX) is the next step in establishing a twenty-first century health information technology infrastructure for Pennsylvania.

The goal of PHIX is to create a statewide system for improving the authorized access to electronic health information. The use of a secure statewide information exchange can offer necessary electronic health information to practitioners providing services at the point of care, improve quality outcomes, enhance patient safety, reduce redundant tests and procedures, lead to a reduction in overall health care costs while gaining efficiency in public health monitoring and tracking.

PHIX is the electronic highway that allows authorized users to securely exchange patient information for the improvement of health in Pennsylvania.

Health Information Exchange (HIE) is the electronic movement of health-related information among organizations according to nationally recognized standards[2].

GOHCR has been working to create a solid foundation for health information technology (HIT) to ensure that Pennsylvania's efforts are aligned with the envisioned national health information infrastructure and with our Medicaid program's HIT plans. This will involve leveraging current partnerships and building new ones between all the stakeholders engaged in health care in Pennsylvania, from the largest of nationally recognized hospital systems to the smallest rural primary care practices, and must include participation of consumers and patient advocates. PHIX will be the Commonwealth's health information exchange utility and will work in coordination with the Commonwealth's other HIT initiatives, such as the State Medicaid Health Information Technology Plan.

An interim governance structure for PHIX includes GOHCR as the lead strategy setting agency. The PHIX Advisory Council, comprised of stakeholders from across Pennsylvania, was created to provide advice and recommendations in the development and operation of PHIX for improving access to electronic health information for Pennsylvania's health care providers, payers and patients.

[1] http://www.gohcr.state.pa.us/prescription-for-pennsylvania/Prescription-for-Pennsylvania.pdf

[2] Definition adopted by the Office of the National Coordinator for Health Information Technology in the Centers for Medicare & Medicaid Services and the National Alliance for Health Information Technology.

The American Recovery and Reinvestment Act (ARRA) signed into law on February 17, 2009, includes the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH) that sets forth a plan for advancing the appropriate use of health information technology to improve quality of care and establish a foundation for health care reform. HITECH commits more than $48 billion[3] in grants, loans and incentives to encourage "meaningful use" of HIT in a secure technology environment including an incentive framework for eligible medical providers starting in 2011. Health care providers that do not have electronic health records meeting the "meaningful use" definition by 2015 may face decreases in their Medicare payments. PHIX is a critical component to enabling health care providers to meet the "meaningful use" definition to qualify for the initial financial incentives beginning in 2011 and avoid the financial penalties.

Pennsylvania is well positioned to maximize HITECH funding through ARRA. GOHCR convened a PHIX Core Team comprised of stakeholders representing the Commonwealth of Pennsylvania Department of Public Welfare (DPW), the Department of Health (DoH), the Office of Long Term Living (OLTL) and the Office of Administration (OA)[4] to provide guidance in the development of the PHIX strategic plan in alignment with the Office of the National Coordinator (ONC) for Health Information Technology's *State Health Information Exchange Cooperative Agreement Program*. In addition to convening a Core Team, GOHCR reached out to representatives from the providers, academic programs, regional health information organizations, patient advocacy, and payer groups for input.

GOHCR and the Core Team researched and reviewed the efforts of numerous states and regions in creating HIEs to identify alternatives regarding how best to implement and operate PHIX. The strategic planning efforts leveraged this research in discussions with stakeholders resulting in agreement on the following concepts.

- ❑ The importance of demonstrating the value proposition of HIT and PHIX to:
  - enhancing health care practice and delivery;
  - improving health outcomes for Pennsylvanians;
  - increasing the speed, accuracy, and efficiency of treatment;
  - eliminating unnecessary testing and procedures;
  - improving patient safety and reducing the incidence of medical and pharmacy errors;
  - supporting quality initiatives to improve health outcomes;
  - increasing providers' capabilities and capacity to share data, imagery, documents and reports; and
  - making reporting of vital statistics, disease surveillance and chronic care management more efficient and complete.

[3] See estimate released May 2009 by the U.S. Department of Health and Human Services, available at http://www.hhs.gov/recovery/index.html. This includes an estimated $46.8 billion in Medicare and Medicaid electronic health record incentive payment funding and $2 billion to be distributed through the Office of the National Coordinator in a series of grants, loans, and technical assistance programs designed to support provider EHR use and to spur health information exchange.

[4] DPW operates the Medicaid Program through the Office of Medical Assistance Programs (OMAP). OA coordinates all Commonwealth technology development through its Office of Information Technology (OIT).

- The need for state government leadership to facilitate decision-making during the initial effort, transitioning the governance and oversight of PHIX to a permanent public/private governance entity in the future.
- The principle that PHIX's technical infrastructure must leverage the current strengths and technology assets of existing providers and other HIE organizations.
- The need to align PHIX with the development of the State Medicaid Health IT Plan.

This Strategic Plan, aligned with the ONC's five domains for an HIE (Governance; Finance; Technical Infrastructure; Business and Technical Operations; and Legal/Policy) provides an assessment of the capabilities and challenges for the development and implementation of an HIE for Pennsylvania.

1.1 Strategic Plan Purpose and Audience

This Strategic Plan responds to the requirements outlined by the ONC in its *State Health Exchange Cooperative Agreement Program* and the needs identified by the initial planning process for PHIX.

This Strategic Plan provides the foundation for the PHIX Operational Plan that will describe the set of activities essential for the design, development and implementation of a statewide HIE. A core aspect of the HIE will be to enable Pennsylvania's eligible Medicaid and Medicare providers to demonstrate "meaningful use" and receive the maximum incentive reimbursement, while avoiding future Medicare reimbursement penalties. The strategic planning efforts envision the completion of the PHIX Operational Plan by May 2010.

This Strategic Plan was developed with input from many stakeholders.

- Consumer groups representing Pennsylvanians who will benefit from the implementation of the HIE, including individuals with special health care needs
- Commonwealth stakeholders, including OA which includes the Office of Information Technology (OIT), DoH, DPW, OLTL, GOHCR and other Commonwealth agencies involved with the HIE initiative
- PHIX Advisory Council (See Appendix 10.5)
- Regional and sub-regional Health Information Organizations
- Hospitals
- Health Care Providers
- Professional Associations
- PA eHealth Initiative
- Academic programs
- Health information technology vendors

The draft Strategic Plan was completed on November 20, 2009 and offered for public comment for a 30–day period. During the comment period, GOHCR presented the plan at more than 25 meetings of health care provider groups, advisory committees to DPW's Office of Medical Assistance Programs (OMAP), the Department of Aging (PDA) and DoH, consumers and others. GOHCR also held a public meeting attended by more than 100 individuals to explain the plan, respond to questions and listen to feedback. Written comments were received from 44

organizations and citizens. This plan has taken into consideration the comments received during that public input process

1.2 Strategic Plan Outline

- The "PHIX Vision, Goals and Strategic Imperatives" section (Section 2) of this document summarizes PHIX's overarching vision.
- The "Environmental Scan" section (Section 3) describes PHIX's current HIT and HIE environment and summarizes the primary challenges facing PHIX.
- The "Governance", "Finance", "Technical Infrastructure" "Business and Technical Operations" and "Legal/Policy" sections (Sections 4 through 8, respectively) present a more detailed description of the current-state, strategic initiatives and recommendations for each of the ONC's HIE domains.
- Section 9, "Evaluation Approach", provides guidance on the work that needs to be done to define the measures and mechanisms that will be used to assess the near term effects and systemic impact of PHIX's development effort.

1.3 Methodologies Employed

To determine an appropriate strategy for PHIX, a five step methodology was employed. The first critical step was to focus on establishing a Pennsylvania specific framework organized around the definition and scope of the five ONC HIE domains[5]:

ONC Five Domains.

- Governance
- Finance
- Technical infrastructure
- Business and Technical Operations
- Legal/policy

The Five Step Methodology.

- Defining ONC's five domains
- Understanding current state capabilities, strengths and initiatives
- Analyzing the gaps between steps 1 and 2
- Conducting an analysis of alternatives for addressing the gaps
- Documenting the proposed Strategic Plan

Based upon this HIE domain framework, the next key steps were to identify the current capabilities that can be leveraged and the existing gaps and challenges that must be addressed

[5] See guidance on these domains in the ONC for Health Information Technology's *State Health Information Exchange Cooperative Agreement Program* issued in August 2009. http://healthit.hhs.gov/portal/server.pt?open=512&objID=1336&parentname=CommunityPage&parentid=47&mode=2&in_hi_userid=11113&cached=true#3

to move forward with PHIX. The fourth and fifth steps consisted of defining a set of alternatives for closing the gaps in each domain and documenting the potential strategies and next steps to meet the challenges and fill the gaps. GOHCR solicited input and recommendations from key stakeholders to establish agreed upon strategies for the Strategic Plan. The outcome of this work is this Strategic Plan.

2.0 PHIX Vision, Goals and Strategic Imperatives

2.1 Vision Statement

The vision for PHIX is to strengthen Pennsylvania's health care system through the timely, secure and authorized exchange of patient health information among health care providers. Health information exchange through PHIX will support patient-centered health care and continuous improvements in access, quality, outcomes and efficiency of care.

2.2 Strategic Goals

To achieve the vision of PHIX, GOHCR has established the following goals.

- ❑ Provide authorized users secure access to patient information at the point of care
- ❑ Align the Strategic and Operational Plans with the Medicaid State Health IT Plan
- ❑ Protect personal health information through privacy policies and security best practices
- ❑ Support "meaningful use" objectives of EHRs by providers and hospitals
- ❑ Strengthen the continuity and coordination of care through enhanced data exchange
- ❑ Help transform health care delivery to a quality patient-centered model
- ❑ Lower costs by reducing duplication of testing and services
- ❑ Strengthen current and future health initiatives to improve clinical outcomes, improve patient safety, ensure security and reduce costs by supporting the health information exchange needs of all providers, including those involved in the Medical Assistance Program, Commonwealth Chronic Care Initiative, Public Health, Long-Term Living and other health care initiatives
- ❑ Enable affordable and efficient health care
- ❑ Enable engagement and education of consumers
- ❑ Ensure that the costs for PHIX do not add to the cost of health care and that PHIX assists in lowering the cost of health care in Pennsylvania
- ❑ Ensure that the HIE initiative is guided by an integrated governance structure of key community stakeholders
- ❑ Focus on developing an enterprise approach for Pennsylvania that is aligned with the Federal Health Information Technology Strategic Plan including the adoption of federally-recognized standards
- ❑ Provide multiple methods for accessing data by patients and providers through PHIX

- ❑ Encourage current and future use of EHRs throughout Pennsylvania
- ❑ Provide the ability to connect to the National Health Information Network

In order to achieve these goals, GOHCR recognizes that it is vital to support widespread adoption of HIT and align its health information exchange planning, priorities and implementation efforts with the current federal definition of the ”meaningful use” of HIT. It will be important to ensure that eligible providers are able to demonstrate “meaningful use” and are positioned to receive the maximum incentive reimbursement and avoid future reimbursement penalties. GOHCR will keep its plans and priorities consistent with and complementary to the Medicaid and Medicare plans for the implementation of “meaningful use” as they are developed.

2.3 PHIX Strategic Approach

In close alignment with the State Medicaid Health IT plan, GOHCR’s strategy is to provide PHIX as a patient-centered health information exchange by leveraging the capacity already developed by integrated and/or large health care systems, regional/sub-regional health information organizations (RHIOs), and community hospitals to connect health care providers to improve the quality and efficiency of health care in Pennsylvania. PHIX must also provide direct connectivity to those providers not part of a health system or regional HIE. Further, PHIX will support public health and vital statistics data needs.

2.4 Strategic Imperatives

The following strategic imperatives, outlined in Table 1, were identified for each of the five ONC HIE domains. To aid in the planning for the capacity development and use of the HIE among all health care providers in Pennsylvania, PHIX will enable ”meaningful use” as an imperative along with these other strategic imperatives.

Table 1. PHIX Strategic Imperatives

Domains	Strategic Imperatives
Governance	❑ Establish a strong leadership to mobilize and solicit stakeholder support and to lead the PHIX initiative ❑ Establish an open, transparent and accountable governance structure and related processes that achieves stakeholder collaboration, buy-in and trust ❑ Align with future nationwide HIE governance ❑ Ensure private and public sector participation and partnership and with clearly defined and agreed roles ❑ Evaluate options for multi-state collaboration on the planning, development and operation of PHIX ❑ Develop a solid value proposition for providers to encourage active HIE participation and adoption ❑ Promote the importance of electronic health record readiness ❑ Solicit patient and consumer engagement and establish mechanisms for the exchange of ideas and providing education

Domains	Strategic Imperatives
	❑ Establish the mechanisms to provide oversight and accountability of PHIX once established ❑ Through state action, provide anti-trust protection for discussions with insurers for funding key initiatives to improve quality and efficiency of care
Finance	❑ Assure sufficient state match for federal ARRA funding for initial planning and implementation costs for PHIX ❑ Create a sustainable business model including public/private financing mechanisms for PHIX ❑ Minimize the impact of PHIX user costs for the provider and payer communities to promote HIE participation ❑ Ensure fair distribution and equitable allocation of costs for the support of PHIX ❑ Leverage existing sources of funding wherever possible (i.e., Public Health Programs, Centers for Medicare and Medicaid Services) for financing PHIX ❑ Define the business case for PHIX, including the expected return on investment, business value and potential cost savings ❑ Establish mechanisms and processes to effectively manage the funding and provide for the required reporting and accountability necessary to implement and manage PHIX
Technical Infrastructure	❑ Leverage existing Commonwealth, statewide and regional level efforts and resources where possible, such as master patient/client index, existing public health registries, reporting systems, health information organizations, Medical Assistance HIT efforts and the Medicaid Management Information system (MMIS) ❑ Release an RFP in April 2010 to solicit bids for PHIX ❑ Identify existing HIE mechanisms that will ultimately enable full interoperability and exchange of health information consistent with ONC strategic planning ❑ Adopt a technical architecture for PHIX best suited to the Commonwealth, statewide, local and regional characteristics of Pennsylvania ❑ Leverage the work completed by the PHIX Advisory Council Requirements Committee ❑ Plan for integration with the National Health Information Network (NHIN)
Business and Technical Operations	❑ Ensure strong planning, Project Management Office (PMO), Service Level Management and business support for PHIX ❑ Create an effective organizational approach to managing PHIX and

Domains	Strategic Imperatives
	its policy development, stakeholder participation and governance mechanisms ❑ Establish the mechanisms and processes for coordinating and aligning stakeholder efforts to incrementally meet ”meaningful use” requirements, Medicaid, Medicare and public health requirements including ESF 8 ❑ Develop secure, authorized approaches to using PHIX-accessible resources for research and analytics to assist in efforts to promote improved health outcomes across Pennsylvania ❑ Coordinate with the Pennsylvania Regional Extension Center (PaREC) program to support the provision of technical assistance to the health information organizations and others developing HIT capacity within the state
Legal/Policy	❑ Identify and harmonize federal and state legal and policy requirements that will enable appropriate health information exchange services ❑ Create the legal framework for patient and provider participation in health information exchange ❑ Establish a statewide policy framework that allows for incremental and continuous development of PHIX policies ❑ Establish enforcement mechanisms to ensure and track PHIX and PHIX participants’ compliance with HHS adopted standards and all applicable laws and policies for interoperability, privacy and security

3.0 Environmental Scan

3.1 Health Information Technology (HIT) Adoption

Adoption of Health Information Technologies among hospitals and primary care providers is increasing in Pennsylvania and these developments provide a strong beginning foundation for HIE readiness and adoption.

As part of Pennsylvania's Strategic Planning process for PHIX, GOHCR completed a review of surveys of current HIT adoption in Pennsylvania. This review included significant input from the Hospital and Health System Association of Pennsylvania (HAP) and the Pennsylvania Medical Society (PMS) in the form of recent survey data gathered from their memberships. GOHCR was also able to draw upon analytical work completed by the Pennsylvania eHealth Initiative (PAeHI) to support its review of current capabilities for HIT in Pennsylvania.

Fast Facts on HIT Adoption in Pennsylvania:

- **Hospitals and health systems:** In 2009, 84% of Pennsylvania's *acute care hospitals* are using some functionalities of an EHR. The high adoption rate in hospitals is in part because 98 of 165 acute care hospitals are part of larger health systems. Even though efforts to move to electronic health information technology are underway in most hospitals, there is still a long way to go. As of May 2009.
  - Only 2.4% of hospitals had a comprehensive system implemented with electronic functionalities in all clinical areas.
  - 12% had implemented a basic EHR system with electronic functionalities in at least one clinical unit with clinical notes.
  - Another 20% were using a basic system with electronic functionalities in at least one clinical unit without clinical notes.
  - Another 29% were just beginning to implement a basic system without clinical notes.
  - 16% of Pennsylvania hospitals do not have EHRs and have no plans on the immediate horizon.
  - 27 health systems collectively operate 96 hospitals. The 15 largest health systems have nearly 2/3 of the annual discharges in PA. A number of these systems have made extensive investments in HIT.
- **Physician practices:** Physician adoption of EMR/EHRs is proceeding more slowly – standing at 19.7% in 2007.
- **Electronic clinical laboratory ordering and results delivery:** Of the 19.7% of physicians using EMRs in 2007, 63% ordered labs or radiology electronically, while 84.4% viewed lab results and 80.8% viewed radiology results electronically.

3.1.1 HIT Adoption in Pennsylvania's Hospitals and Health Systems

In 2009, HAP worked with its member organizations to complete the annual American Hospital Association (AHA) HIT survey.

The survey included responses from 125 respondents from 175 targeted hospitals and providers. The survey examined hospital implementation and planning in the following areas of functionality.

- ❑ Electronic Clinical Documentation (e.g., patient demographics, notes, lists, discharge summaries)
- ❑ Computerized Systems for Results Viewing (e.g., laboratory, radiology, diagnostics)
- ❑ Computerized Provider Order Entry (CPOE) (e.g., testing, medication, consultation, orders)
- ❑ Decisions Support Systems (e.g., clinical support, drug dosing/allergy/interactions)
- ❑ Bar-coding (e.g., lab specimens, pharmaceutical management, patient identifier (ID))
- ❑ Other Systems (telemedicine, Radio Frequency ID (RFID), physician use of personal digital assistant (PDA)

The results of the survey demonstrated evidence of various levels of HIT adoption in Pennsylvania hospitals. The survey found that 84% of Pennsylvania's acute care hospitals are using some functionalities of an EHR. The high initial adoption rate in hospitals is in part because 98 acute care hospitals are part of larger health systems. However, only 2.4% of hospitals had a comprehensive system implemented with electronic functionalities in all clinical areas. Twelve percent (12%) had implemented a basic EHR system with electronic functionalities in at least one clinical unit with clinical notes. Another 20% were using a basic system with electronic functionalities in at least one clinical unit *without* clinical notes, and another 29% were just beginning to implement a basic system *without* clinical notes. Sixteen percent (16%) of Pennsylvania hospitals do not have EHRs and have no plans on the immediate horizon.

In the utilization of electronic clinical data, particular areas of strength among respondents to the AHA survey included:

- ❑ patient demographics (80% of respondents having fully implemented functionality);
- ❑ medication lists (54%);
- ❑ discharge summaries (55%); and
- ❑ result viewing with more than 50% of hospitals reporting implementation in all areas with laboratory radiology reports and image viewing systems implemented in more than 80% of responding hospitals.

CPOE use is less common with a range of approximately 30%-40% of responding hospitals reporting any kind of implementation and with 25% of these hospitals reporting full implementation. Decision support tools are more common outside of the clinical guidelines and reminder areas particularly in drug alert systems which were reported as implemented in 50%-60% of responding hospitals. Bar-coding systems are most common for lab specimens (52%) and patient ID (48%), but there is also good usage of other bar-coding systems, such as for pharmaceuticals and supply chain management (30%-40%).

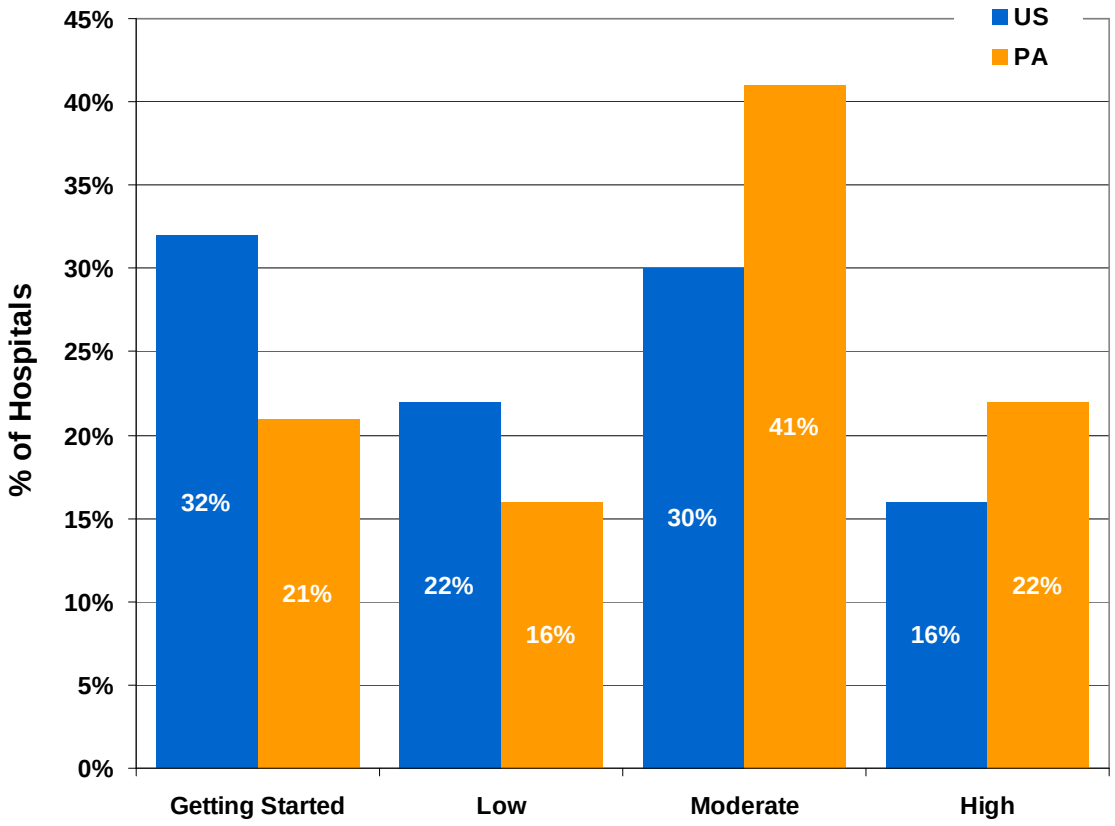
Twenty-eight percent (28%) of hospitals that responded to the AHA survey indicated that their electronic health system automatically generates Hospital Quality Alliance measures. Twenty four percent (24%) have systems that provide clinical guideline support and another 24% have either implemented or are beginning to implement in at least one unit of the hospital. Thirty-eight percent (38%) of hospitals' EHR systems provide clinical reminders, with 20% of them implemented or beginning to implement in at least one unit. Drug-allergy alerts are implemented in 62% of hospitals and a corresponding rate of 60% for drug to drug interaction alerts.

The survey also found that of the EMR/EHR systems utilized in Pennsylvania's hospitals, 59% of hospitals reported that systems are fully certified by the Certification Commission for Health Information Technology (CCHIT).

Another significant finding from the AHA HIT Survey is that there are a number of functional areas in which a significant proportion of hospitals are starting, planning or considering implementation of HIT. These areas include physician notes, nursing notes, problem lists, advance directives, CPOE for lab tests, radiology, medication, consultations and nursing orders, and also in the areas of clinical decision supports. There was some interest shown in the development of other functionalities with a minority of hospitals considering RFID or PDA implementations.

The 2007 AHA survey included a comparative analysis of HIT spending and utilization across the United States. Pennsylvania's hospitals are further advanced in HIT adoption in comparison to some other states on both these criteria, according to the survey. Pennsylvania's hospitals are investing a median level of $7,000 in capital spending and $15,000 in operating costs on HIT per staffed bed. This is 24% and 20%, respectively, more than the national average level of investment per bed. In addition, a higher percentage of Pennsylvania hospitals surveyed indicated moderate or high adoption of HIT, compared to the national average (See Figure 1). Appendix 10.3 provides case study examples of Pennsylvania's strengths in HIT. While these indicators of HIT adoption are slightly ahead of the national trend, Pennsylvania has much work to ensure EHR/EMR adoption and to develop the health information exchanges and the broadband capacity necessary to allow optimum exchange and "meaningful use" of clinical health data.

Figure 1. Distribution of Hospitals by Level of IT Use (AHA HIT Survey, Results for all acute care hospitals, 2007)



3.1.2 Physician Practices Adopting HIT

Physicians from across Pennsylvania's diverse geographic areas are demonstrating efforts to increase use of HIT. The challenges facing independent and small practice physicians are different from those of the largest hospitals and health systems particularly in rural areas where telecommunications infrastructure limitations are more widespread.

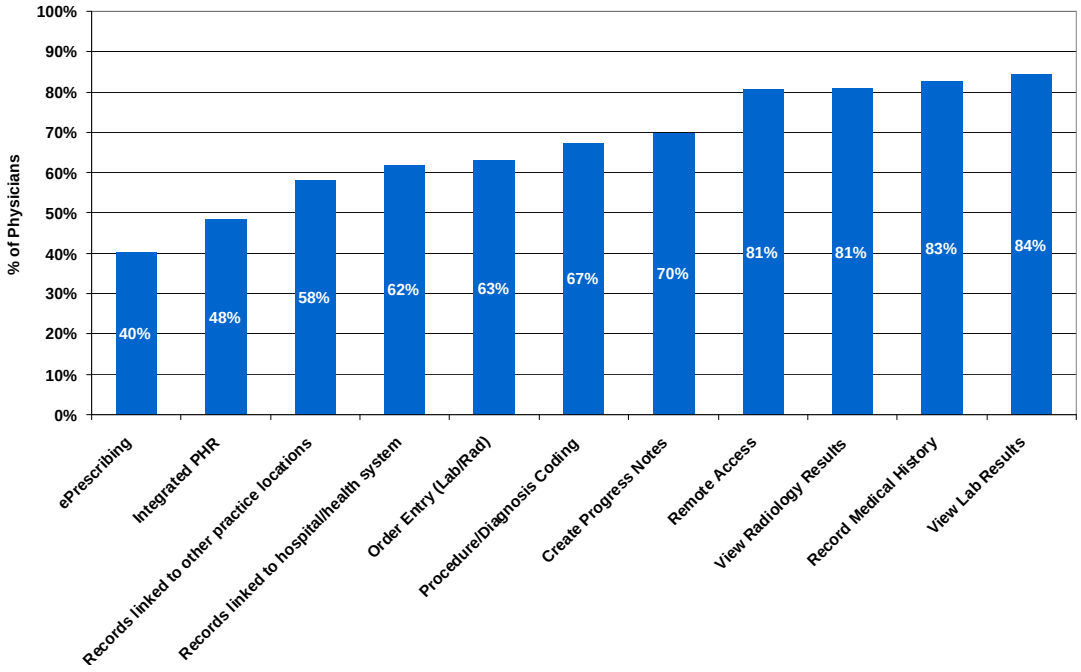
A 2007 survey conducted by PMS received responses from 3,000 Pennsylvania physicians. This survey effort fell short of full participation from Pennsylvania's approximately 30,000 physicians and while not a comprehensive review of physicians' HIT adoption in Pennsylvania the survey does provide some insight into the current levels of practice adoption, albeit with a self-selection response bias of early adopters. The survey found that 19% of respondents did not utilize high speed broadband data access in their practices, believed to be due to a lack of local broadband availability. A further 31% of respondents utilize DSL, which while considered broadband, may not be suitable for all high data volume medical IT applications.

It is estimated that up to 5,000 of Pennsylvania's physicians work in small, often rural, practices. Twenty eight percent (28%) of Pennsylvania's population, or approximately 3.4 million people, live in 48 rural counties, where broadband access may not be presently available. It will be vital to include these practices in the development of the HIE by developing the technical infrastructure essential to support HIT adoption in rural Pennsylvania areas.

The 2007 PMS survey found that 19.7% of respondents currently use an EMR/EHR system in their offices. This is more than the 17% figure identified for nationwide adoption for physicians documented in the New England Journal of Medicine in 2008[6]. It is of course difficult to verify if the systems in use meet the kind of ONC "meaningful use" standards that will define effective HIT in the future. Follow-up questions from the PMS survey indicated that 10% of the physicians who had no EMR/EHR said they planned to adopt one in the next year. 36% of the respondents noted that they planned to adopt HIT in the next 2-5 years, but 53% had no plans for adopting an EMR/EHR system.

These findings demonstrate a movement toward the adoption of advanced HIT functionality such as record linking, and the adoption of basic HIT functions, such as recording medical histories. Figure 2 provides an indication of the kind of functionality available to the identified early EMR/EHR physician adopters in Pennsylvania. However, it should be stressed again that the PMS survey had a low response rate that would most likely be completed by those using EHRs and the utilization rates are probably over stated statewide.

Figure 2. Functional Utilization for Physicians Reporting EMR/EHR Implementation (PMS HIT Survey, 2007)



While EMR/EHR adoption in physician practices is progressing slowly, the preconditions for HIE are currently present in many practices. For example, 88% of the physicians have internet access in their offices, 80% use PCs and laptops and 44% of those practices had ten or more such devices. Forty percent (40%) used a network (internal and/or external) to send email between physicians.

3.1.3 Nursing Homes Adoption of HIT

Unfortunately, no Pennsylvania specific data is currently available to assess nursing home HIT adoption rates. However, the 2004 National Nursing Home Survey, a nationally representative

[6] http://content.nejm.org/cgi/content/full/NEJMsa0802005v1

cross-sectional sample of U.S. nursing homes provides a general picture. Nearly all nursing homes surveyed used electronic information systems for quality reporting and billing. Nearly 43% had electronic medical records, including nurse's notes and physician notes, and 80% used electronic systems for admission, transfer and discharge. Approximately 20% used electronic information systems for physician orders, medication orders and drug dispensing, and laboratory/procedures information and 17% also used electronic information support for medication administration [7].

GOHCR plans to explore the feasibility of a Pennsylvania HIT survey with the associations representing the nursing home industry to aid in planning for PHIX.

3.1.4 Pennsylvania's Health Care Community Supports HIT Adoption

In addition to the health systems, hospitals and physicians HIT adoption described above, there is significant support from the Pennsylvania eHealth Initiative (PAeHI)[8], to support the adoption of HIT and HIE in the Pennsylvania. PAeHI established in 2005, is a strong coalition across the health care and HIT communities dedicated to advancing HIT in Pennsylvania. PAeHI was created to encourage the development and use of electronic medical records in Pennsylvania along with health information exchanges. PAeHI has been the forum for the many diverse interests in the health IT community to support a common mission, which is *"…to improve patient care through the effective use of health information technology".* PAeHI has grown from 40 founding stakeholders to more than 100 member organizations and individuals, including government, insurers, hospitals, physician practices, Medicare Quality Improvement Organizations, health care trade associations, and vendors.

3.2 Existing Adoption of Health Information Exchange

Health information exchange development is already under way in Pennsylvania with a number of initiatives focusing on developing HIE or HIE-like capacity. Current information exchanges at least demonstrate the ability and interest for health information data sharing if not full HIE capacity. These exist in specific regions and include one functioning regional HIE. There have also been efforts in Pennsylvania to develop RHIOs resulting in some success and important lessons learned for PHIX. It will be important for PHIX to leverage all of these efforts to ensure that the statewide infrastructure is able to benefit from the work completed thus far and draw from the strong regional character of health care in Pennsylvania.

[7] Resnick, Manard and Alwan, "Use of Electronic Information Systems in Nursing Homes: United States, 2004". Journal of American Medical Informatics Association. Vol 16 , No. 2

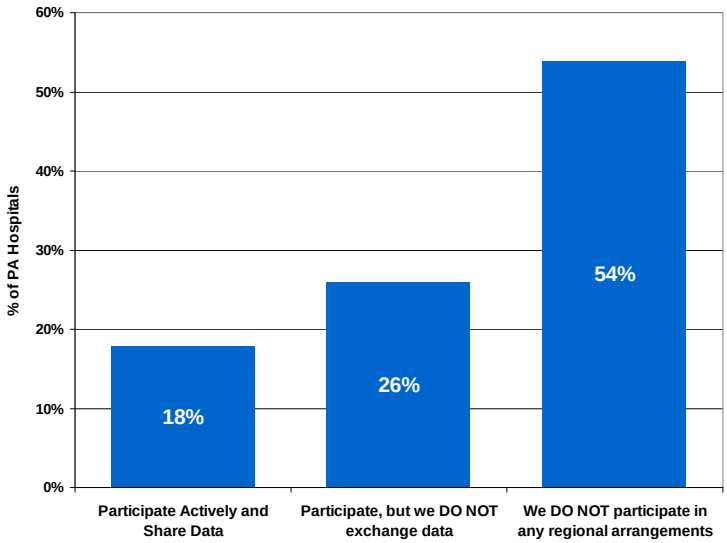
[8] For more information about PAeHI: http://www.paehi.org

Some examples of health information exchange-related activities across Pennsylvania.

- Pinnacle Health System – connecting the Pinnacle Hospital and community physicians
- Vale-U Health - connecting Monongahela Valley Hospital, 140 medical staff members and several regional ancillary providers
- 6 Bridges – six health systems in Western Pennsylvania that have formed an alliance to create HIE
- UPMC – connecting 20 academic, community, and specialty hospitals
- Reading Hospital – discussing a regional HIE
- Harrisburg HIE – early stages of formation in Central PA
- Southeast Pennsylvania – efforts underway to establish a regional HIE
- KeyHIE – eight hospitals connected in northeastern PA
- Commonwealth Medical College – organizing a health information exchange in northeastern PA

HIE is becoming a well-established part of the Pennsylvania health care community's information management strategies. The 2009 American Hospital Association survey investigated how hospitals and health systems were utilizing information/data sharing. This survey found that a number of organizations were starting to develop regional information sharing projects, often based on specific patient data types, as detailed in Figure 3. While a majority of respondents are not yet participating in such regional exchange efforts there is a significant number of active and passive (not sharing data) participants in efforts under way in Pennsylvania.

Figure 3. Regional Arrangements to Share Patient-level Clinical Data through Electronic Health Information Exchanges, such as RHIOs (AHA HIT Survey, Results for Pennsylvania acute care hospitals, 2008 and 2009)



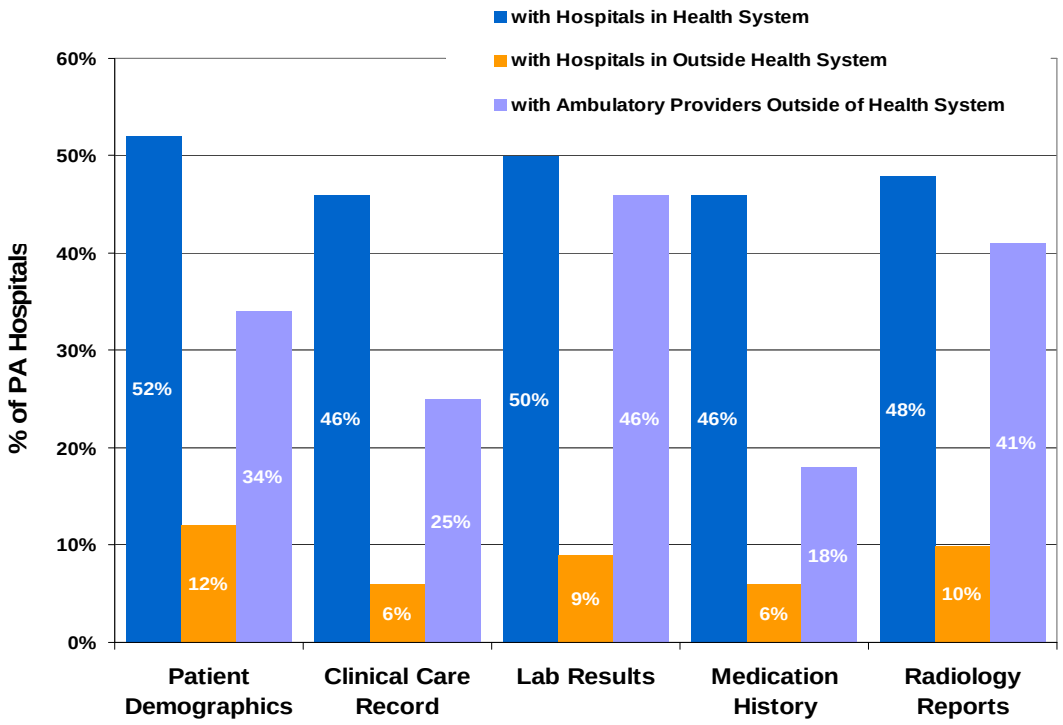
The movement toward sharing health information is even more pronounced within the networks of hospitals and providers established by health systems in Pennsylvania. Figure 4 indicates that data exchange activity is common between hospitals within a health system but much less prevalent with hospitals outside of the health system network.

Twenty-five percent (25%) of Pennsylvania hospitals report that they exchange clinical care records, 46% share lab results, 16% share medication lists and 41% share radiology reports with *ambulatory providers* outside the health system.

The exchange of clinical information with *hospitals outside of the health system* is quite limited: 6% exchange clinical care records; 9% share lab results; 6% share medication lists; and 10% share radiology reports.

The exchange of clinical information is greatest with *hospitals within the health system*: 46% share clinical care records; 50% exchange lab reports; 46% share medication reports; and 48% share radiology reports. Providers are more likely to receive data exchanges from hospitals and this may be explained by the regional nature of many health systems and their existing relationships with local providers.

Figure 4. Respondents Reporting Electronic Data Exchange (AHA HIT Survey, Results for Pennsylvania acute care hospitals, 2008 and 2009)



Electronic eligibility and claims transactions. Currently electronic eligibility checking and claims submission from physician offices is done via web-based services, file transfer protocol either direct to payers or through clearinghouses, or third party billing services outside of existing electronic health record products. The PMS survey showed nearly all practices bill insurers electronically - 83% bill directly of which 24.5% used a billing service. Seventy percent (70%) reported checking insurance eligibility electronically. The Office of Medical Assistance reports that 80% of claims by participating physicians are billed electronically, while 96% of

inpatient claims are billed electronically. High rates of electronic billing for Medical Assistance are reported for most other types of providers, as well.

Electronic prescribing and refill requests. In 2007, 40% of the 19.7% of physicians using EMR/EHR systems had an integrated electronic prescribing function. Ten percent (10%) used a standalone electronic prescribing system, connecting directly to the pharmacy. The Pennsylvania Pharmacists Association reports that the majority of prescriptions currently generated electronically at physician's offices are faxed to the pharmacies.

The March 2007, AHA survey showed that 19% of Pennsylvania hospitals have implemented electronic ordering for prescriptions, with another 41% in some phase of implementing electronic ordering. Thirty-one percent (31%) of Pennsylvania hospitals responding to the survey indicated an interest in e-Prescribing, but do not have the necessary resources.

RHIOs. During the past five years, efforts to develop RHIOs in Pennsylvania have occurred in a diverse array of locations from rural northeastern Pennsylvania to efforts to share radiology images in the Greater Philadelphia region. Although these efforts have not been uniformly successful, all provide lessons learned and good insight into the challenges that may be faced in developing a health information sharing enterprises. Where RHIOs have been developed it has been reported that governance issues and establishing a sustainable funding model have been seen as significant challenges for these projects.

Pennsylvania is home to an operating HIE. The Keystone Health Information Exchange, known as KeyHIE, is serving northeastern Pennsylvania. This initiative has demonstrated effectively that HIE is able to be successful with over 250,000 patients having opted-in to allow limited access to their health data in participating hospital systems. KeyHIE will provide a vital example and experience of how HIE implementation can be approached in Pennsylvania. For more information on KeyHIE see Appendix 10.4.

3.3 Coordination with Commonwealth and Federal Programs

There are numerous programs being conducted with Commonwealth and/or Federal funds. It is important to identify and align these programs with HIE activities to eliminate redundant efforts and maximize financial and resource investments.

3.3.1 Coordination with Commonwealth Programs

Rx for PA identified strategic priorities for health care technology in Pennsylvania.

- ❑ Interoperability—to enable all authorized health care providers access to patient information across the Commonwealth
- ❑ Electronic Medical Records for Pennsylvania's hospitals and physician
- ❑ Electronic Prescribing—requiring e-Prescribing (eRx) with drug interaction checking to be used by physicians

PHIX provides a solid foundation for supporting the interoperability priority. There are also other Commonwealth programs and initiatives, described in the subsequent sections, which will help to address the other health information priorities identified by Rx for PA.

Pennsylvania Department of Public Welfare – Medical Assistance

DPW's Office of Medical Assistance Programs (OMAP) is responsible for creating programs and initiatives to support and validate "meaningful use" among their providers and hospitals. PHIX is

being viewed as the mechanism to enable achievement of the Medicaid State Health IT Plan (SMHP). The development of PHIX will be coordinated with the SMHP and other medical assistance initiatives that will contribute to and benefit from PHIX.

Leveraging resources managed by DPW, including Pennsylvania's Medicaid Management Information System (MMIS), known as PROMISe, is crucial. This system provides Internet capabilities for providers, including claims submission and inquiry, updates to provider enrollment information and the electronic submission of outpatient pharmacy claims. PROMISe currently utilizes Web services and Application Programming Interfaces (APIs) for internal and external access. The upcoming Medicaid Information Technology Architecture (MITA) "To-Be" assessment will be used to investigate methods to enhance the use of Web services and Service Oriented Architecture (SOA) principles for increased flexibility and interoperability.

Development of an interactive statewide Medicaid e-Prescribing network is one area in which DPW is moving forward to enhance HIT in the Medicaid community. The e-Prescribing solution will integrate with PROMISe to ensure that prescriptions are medically appropriate and accurate in relation to a Medicaid beneficiary's eligibility and coverage rules. This system and its comprehensive data sources are also important assets that can be leveraged by PHIX.

Realizing the need to better understand the readiness of these stakeholder communities to participate in HIE, GOHCR will be working with DPW on a planned survey of HIT efforts among 5,500 selected Medicaid physicians, as well as CRNPs, FQHCs, rural health centers, dentists, pediatricians and current Managed Care Organizations. There will be a similar survey completed by the DPW Office of Mental Health and Substance Abuse Services. These collective efforts will support the PHIX planning efforts and the effective coordination with Medicaid IT developments.

Pennsylvania's Medical Assistance Program has been awarded a $9.8 million, five-year grant under the Children's Health Insurance Program Reauthorization Act of 2009 to develop a new pediatric electronic record format to support quality improvements. This effort is expected to greatly enhance the use of HIT.

Pennsylvania Department of Health – Information Sharing Programs

DoH has developed application support to enable Pennsylvania's health care providers to report disease surveillance immunization and other health information using advanced technologies to establish close to real time communication links. The PHIX utility will be a valuable support to these DoH public health applications.

Pennsylvania's National Electronic Disease Surveillance System (PA-NEDSS) was developed to meet Pennsylvania's need to supply surveillance data to the Centers for Disease Control (CDC). Approximately 20% of Pennsylvania labs have an automated feed into the PA-NEDSS application. This 20% accounts for approximately 80% of all lab results that are reported. The remaining lab results are manually entered through the DoH web site.

Ensuring interoperability among users, PA-NEDSS utilizes Health Level 7 (HL7) interoperability standards and is being developed to provide functional capabilities through Service Oriented Architecture (SOA). PA-NEDSS provides the following features for Pennsylvania hospitals, laboratories, physicians, and long term care facilities.

- ❑ Web-based reporting for labs, hospitals, and physicians
- ❑ Integrated Electronic Lab Reporting (ELR)
- ❑ Integrated Health Alert Network

- Morbidity and Mortality Weekly Report (MMWR) and report extracts for CDC
- Graphical reporting/analytical tools
- Geographical Information System (GIS) mapping tools used to plot cases on a map
- Comprehensive and integrated system for all program areas including Case Management for Epidemiology (EPI), Tuberculosis (TB), Sexually Transmitted Disease (STD), Elevated Blood Lead Level program areas, and HIV/AIDS surveillance

DoH has also developed the Pennsylvania Statewide Immunization Information System (PA-SIIS) as a secure means for providers to notify DoH of vaccination administration information. This registry allows providers and authorized users to use and contribute to a single record of immunizations and improve patient care. PA-SIIS conforms to CDC functional standards for immunization registries, including utilizing HL7 standards.

Work is in progress with vendors who have committed to develop better interfacing functionality with their EHR products. In May 2009, DoH successfully implemented the first real time bi-directional interface between an EHR vendor's product and the PA-SIIS.

DoH also operates other health information sharing systems and registries that can be supported through PHIX.

- Real-Time Outbreak and Disease Surveillance System (RODS)
  - RODS collects chief complaint information from over 70% of hospitals with emergency departments. RODS also collects over-the-counter pharmaceutical sales data from over 1,100 stores in Pennsylvania.
- Health Care Acquired Infections data
  - The Health Care-Associated Infection and Prevention Control Act of 2007 requires hospitals to report all inpatient health care associated infections (HAIs) hospital-wide to DoH, the Pennsylvania Patient Safety Authority (PSA) and the Pennsylvania Health Care Cost Containment Council (PHC4) using the CDC's National Healthcare Safety Network (NHSN). Nursing homes are also required by this law to report all HAIs to the PSA and DoH using a newly developed module of the Pennsylvania Patient Safety Report System (PA-PSRS).
- Adult and Child Lead reporting
- Early Hearing Detection and Intervention Program
- Vital Records Birth/Deaths Systems
- Cancer Registry
- Newborn Screening System

These systems administered by DoH are significant health information assets for the Commonwealth of Pennsylvania. In addition, DoH also supports PHC4 in the gathering of quality reporting data under the legal requirement for health care facilities to report significant data to PHC4 about diseases, procedures, medical conditions, discharge status and cost of care in order to allow comparison of provider quality and service effectiveness by the public.

Currently it is labor intensive for providers to collect and report this data. PHIX may be used to simplify and enhance the process used for collection and authorized use of health information in support of public health objectives.

Pennsylvania Office of Long-Term Living (OLTL)

Currently, interoperability and exchange of health information across different health care settings serving older Pennsylvanians and individuals with disabilities remains a serious challenge. The sharing of electronic medical records, especially between hospitals and primary care providers, home and community based providers and nursing facilities will enhance the efforts of the OLTL to balance the long-term care system. Information technology provides a means to seamlessly transfer health information for seniors and people with disabilities throughout their acute treatments and then back to their homes. Electronic transfer would reduce the need to copy and transmit the large volume of medical records that are needed for everything from eligibility determinations to ongoing support service in the community.

As part of the environmental scan efforts, OLTL solicited input from their stakeholder community. There are HIT opportunities and challenges facing the long-term care population.

- ❑ The older, disabled and chronically ill individuals who long-term care providers serve often have a multitude of health issues, multiple care providers and transition frequently from one setting to another. Hence, this population stands to benefit the most from interoperable health information exchange and other health information technologies to reduce duplicative procedures, medical errors, and preventable costs and improve the quality of care.
- ❑ Long-term care (LTC) providers need the ability to exchange information to:
  - improve and expedite the clinical eligibility process and coordination of services between primary care and LTC providers; and
  - support discharge planners for individuals returning home or in need of rehabilitation in a nursing facility.
- ❑ The lack of funds to purchase technology and cover the costs of technical assistance for the implementation of HIT makes it difficult for the wide range of LTC providers, including agencies that provide support coordination/care management, home and community based services, nursing facilities and home health agencies to take advantage of EMRs/EHRs and telehealth (telecare) systems.

Office of Administration and Department of Economic and Community Development – Broadband Infrastructure Programs

In order to address the challenge of developing telecommunications infrastructure for health care providers in Pennsylvania, the Office of Administration (OA) and the Department of Economic and Community Development (DCED) are working to develop broadband connectivity access.

Act 183 of 2004 (Chapter 30) - The reauthorization of Chapter 30 through the passage of Act 183 of 2004 provides certain state programs and mechanisms that can be of assistance for health care providers.

- ❑ *Broadband Outreach & Aggregation Fund (BOAF):* "ConnectTheDocs" is a PMS project funded by OA and DCED through a Broadband Outreach and Aggregation

Fund (BOAF) grant. The project is focused on enabling the means for physicians and other health care professionals to interact with one another and share information across a network securely, efficiently and effectively. The project promotes and helps expand broadband network technologies to physician practices in which broadband is not currently used or available and improve health care in Pennsylvania, especially in rural areas. For physicians who already use broadband in their practice, this project could potentially offer higher quality broadband access or lower rates.

The project includes physician-specific outreach efforts focused on educating and informing physicians regarding the benefits and uses of broadband in their practices and HIT applications that require or are enhanced by broadband. Such efforts include educational offerings and decision resource tools using various mediums, including meetings, webinars, podcasts, written materials, and further development of similar resources on the website.

- *Business Attraction & Retention Program:* The Business Attraction & Retention Program (BARP) is an "economic development trigger" program. Through this program, DCED can identify potential locations with documented aggregated demand and designate these to be "strategically important for economic development purposes." DCED then initiates a request on behalf of the anchor tenant or prospective business consumer. The process serves as the catalyst for a supply/demand conversation to occur between the potential customer and the incumbent telephone company. In 2006, the first successful implementation of the program, DCED submitted a BARP request to Windstream Communications (formerly Alltel) on behalf of Warren General Hospital in order to "trigger" deployment. As a result of this request, Windstream Communications deployed broadband service to Warren General Hospital Physicians Center in Sheffield, PA. The Sheffield medical center is a primary care satellite location affiliated with the Warren General Hospital.

3.3.2 Coordination of Medicare and Federally Funded, State-based Programs

GOHCR is reaching out to Medicare and federally-funded state programs to make sure that their needs are considered as the statewide HIE is planned and implemented. These programs include:

- Division of Disability Determination in the Department of Labor and Industry
- Epidemiology and Laboratory Capacity Cooperative Agreement Program (CDC)
- Assistance for Integrating the Long-term Care Population into State Grants to Promote Health IT Implementation
- HIV Care Grant Program Part B States/Territories Formula and Supplemental Awards/AIDS Drug Assistance Program Formula and Supplemental Awards
- Maternal and Child Health State Systems Development Initiative programs
- State Offices of Rural Health Policy
- State Offices of Primary Care
- State Mental Health Data Infrastructure Grants for Quality Improvement
- State Medicaid/CHIP Programs

- ❑ Emergency Medical Services for Children Program

3.3.3 Participation of Other ARRA Programs

Pennsylvania Regional Extension Center

GOHCR worked with Quality Insights of Pennsylvania (QIP) in preparing its applications to ONC to become the Pennsylvania Regional Extension Centers. The Regional Extension Centers will offer technical assistance, guidance and information on best practices to support and accelerate health care providers' efforts to become meaningful users of EHRs[9]. The REC will promote and collaborate with HIE initiatives and with PHIX.

Broadband Technology Opportunities Program

Two federal Recovery Act grants totaling $128 million announced on February 18, 2010 will significantly expand the capacity of the state telecommunications platform. The Pennsylvania Research and Education Network, or PennREN, will receive more than $99.6 million to develop a 1,700-mile fiber network to expand broadband Internet access and directly connect 60 community anchor institutions in 39 counties across south and central Pennsylvania. These include public and private universities, K-12 schools, public libraries, public broadcasting facilities, and medical facilities. In addition, the state will receive a $28.8 million American Recovery and Reinvestment Act grant to help fund a $36 million "middle mile" project to expand broadband infrastructure in northern Pennsylvania.

These grants will enable Pennsylvania to expand middle mile broadband infrastructure in many underserved areas of the state and to directly connect critical community institutions to enhance healthcare delivery, education, workforce development, and public safety. The enhancement to the state tower infrastructure will provide enhanced capacity for both the Commonwealth and private providers to serve the needs of a variety of disciplines including health care and public safety.

3.4 Statewide HIE Readiness Preparation

GOHCR has been working to enhance readiness for a statewide HIE by conducting a detailed review of the strategy for PHIX. This project is engaging stakeholders across the Pennsylvania health care industry and stakeholders from Commonwealth agencies to develop a thorough understanding of the current state of HIT opportunities and challenges. This effort includes developing the vision and goals of PHIX as described in Section 2 of the Strategic Plan, conducting a detailed gap analysis between the existing capabilities and identifying a range of alternative options for addressing challenges and ensuring the successful implementation of PHIX. These activities have informed the Strategic Plan and provide a solid foundation for the planning, development, implementation and sustainability of PHIX.

[9] http://healthit.hhs.gov/extensionprogram

3.5 Environmental Scan Summary

Environmental Scan Summary

- HIT Adoption
  - The development of EMR/EHR technologies in Pennsylvania has made good progress in recent years especially in hospitals. There is however, significant work to be done to accelerate adoption across all providers especially given the infrastructure challenges in Pennsylvania.
- HIE Adoption
  - Health information exchanges and data sharing projects are occurring in Pennsylvania particularly within larger health systems. Pennsylvania is also home to an operating HIE (KeyHIE) which is a good example of the potential of PHIX.
- Coordination with Commonwealth and federal programs
  - It will be vitally important to integrate PHIX with other initiatives within the Commonwealth toward enhancing HIT. In particular, State Medicaid Health Information Technology Plan and DoH data sharing and registry projects should be included in PHIX planning. It will also be important to work with efforts to improve the Commonwealth's telecommunications infrastructure (Broadband) to enable effective HIE.
- Coordination with other ARRA programs
  - PHIX should be coordinated with the Regional Extension Center, activities to enhance broadband connectivity and workforce development resources made available through ARRA.
- The environmental scan of HIT and HIE adoption in Pennsylvania guided the planning and operation of PHIX and provides a baseline for future assessments.

4.0 Governance

The vision and imperatives described in Section 2 will be the guide for the governance of PHIX. Governance for PHIX must be highly transparent and maintain high standards of accountability to ensure that the full network of stakeholders and participants are able to build the vital consensus and trust necessary for this kind of information sharing enterprise. GOHCR is proposing a governance framework to support the development and facilitation of collaboration among stakeholders, ensure compliance with legal and policy requirements and also provide for the appropriate degree of accountability to Pennsylvanians.

GOHCR has reviewed various models for governance of a health information exchange that range from full state government control to full private control. Most operational health information exchanges in the U.S., although created independently of one another, demonstrate a number of similar structures and goals, according to responses received in the HIE Common Practices Survey conducted by the Healthcare Information and Management Systems Society (HIMSS) in 2008[10].

The role of state government in various health care activities makes it a key stakeholder in HIEs. A reasonable case can be made that this role and the significant societal impact of HIEs form the basis to consider HIE worthy of significant governmental interest. Other important stakeholders include providers and entities that have or provide access to patient data, those who derive benefit from it and those who provide financing for its operation. Continued success of the HIE requires participation by each of these entities in a strong collaborative approach. This is another key role that state government can play by providing neutral party "trusted agent" leadership in the HIE framework.

The State Alliance for e-Health created a report for the National Governors Association (NGA) titled *Public Governance Models for a Sustainable Health Information Exchange Industry*[11]. This report provides a review of public governance models with specific review of the legal structure, accountability issues, and finance considerations. Findings in this report include the following factors considered to be key to success in establishing a governance structure.

An important component of PHIX governance will be to support working relationships and collaboration between PHIX and regional and sub-regional HIE efforts in Pennsylvania. This will require continuing to identify and work closely with stakeholders and community groups that are leading regional HIEs as well as identifying entities to lead in the creation of regional HIEs where necessary. The governance structure must continuously work to maintain and enhance support for the HIE concept from within the Pennsylvania hospital and medical provider community, patient advocacy groups, and most importantly patients themselves.

The governing body for PHIX must also develop collaborative relationships beyond Pennsylvania's borders. It must establish the mechanisms necessary to ensure effective coordination with the Nationwide Health Information Network (NHIN). It will also need to define and support HIE collaboration across state lines, particularly in areas with shared populations and health care markets.

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[10] *"Health Information Exchanges: Similarities and Differences"* Healthcare Information and Management Systems Society, 2008.

[11] *Public Governance Models for a Sustainable Health Information Exchange Industry* Report to the State Alliance for e-Health - prepared by University Of Massachusetts Medical School Center for Health Policy and Research in collaboration with the National Opinion Research Center and the National Governor's Association Center for Best Practices.

Ideally there must be some legal accountability to operate PHIX for the reasons it was established, to assure appropriate use of patient clinical data and to foster improved health care quality and efficiency.

4.1 Current-State Assessment

4.1.1 PHIX Interim Governance

Governance for PHIX is currently provided through the leadership of GOHCR, with a staff member designated as the State Government Health IT Coordinator. The Director of GOHCR reports directly to the Governor and Chairs the Health Care Reform Cabinet. The Health Care Reform Cabinet, comprised of Secretaries from state agencies involved in health care activities (who also report directly to the Governor) is responsible to advise GOHCR on overall project direction. Agencies also have staff actively participating in the core leadership group supporting GOHCR. Any major differences on policy or direction are decided by the Governor, but happily this has not been needed.

The PHIX Legal Workgroup is a cross-agency group of more than 20 attorneys working to establish a comprehensive legal framework for PHIX. An external legal group has conducted a review of the legal assessment identified by the Commonwealth's lawyers. The legal efforts are described in more detail in Section 8.

The PHIX Advisory Council provides input to GOHCR on strategies, issues and recommendations for PHIX. The PHIX Advisory Council includes representatives of physicians, hospitals, health systems, consumers and other essential stakeholders (see Appendix 10.5 for PHIX Advisory Council Membership). The Requirements Committee has reviewed and approved a comprehensive set of requirements for the PHIX functionality. A Business Process and Relationship Committee has been formed to work on the clinical and communications aspects for PHIX.

GOHCR and the PHIX Advisory Council are creating a steering committee for ongoing guidance and assistance in developing plans for HIE between PHIX Advisory Council meetings.

4.1.2 Commonwealth of Pennsylvania Participation

Commonwealth agencies are active participants in PHIX planning. DPW's OMAP, DoH and OIT have been actively engaged in planning for PHIX since 2007. There is a Commonwealth HIE Workgroup, comprised of agency representatives, reviewing the current Commonwealth Health IT environment and creating a plan for each agency to develop the necessary information technology and business practices to share health information through PHIX.

4.2 Future Role of the Governance Entity

The governance structure for PHIX must foster a collaborative and entrepreneurial spirit in the development of initiatives and projects in health information sharing. The PHIX governance structure must balance these sometimes competing objectives and work toward making the appropriate exchange of health information a dependable and routine part of the business process for the state's health care providers and for health programs operated by the Commonwealth.

The principles in the box below have been identified as important in the development of the PHIX governance model and the identification of the entity responsible for PHIX governance functions.

PHIX Governance Founding Principles

- ❑ Clear delineation of membership requirements and responsibilities, decision domains, rules of decision-making, and state involvement.
- ❑ Governance and operation on a highly inclusive basis to guarantee support across all stakeholders that will cooperate in the PHIX network of participants.
- ❑ Strong interdependency between the governance of PHIX and financing mechanisms. The PHIX governance model cannot be selected in isolation from decisions regarding the financing and sustainability of the HIE. Those organizations that will support PHIX must be provided a voice in governing PHIX.
- ❑ Strong legal framework to operate PHIX to improve health care quality and efficiency.

4.2.1 PHIX Governance Functions

The governance structure for PHIX must be able to address critical governance functions.

- ❑ Provide a collaborative forum for stakeholder participation
- ❑ Establish policies and procedures to govern privacy and security
- ❑ Establish interoperability standards for PHIX
- ❑ Oversee technical operations to ensure availability, adaptability, and usability of electronic health information
- ❑ Conduct business operations including financing
- ❑ Establish accountability measures and monitoring the exchange of health information to ensure legal and policy requirements are satisfied, especially privacy and security requirements
- ❑ Foster nationwide and interstate collaboration on health information exchange and related standards development
- ❑ Assure that PHIX has adequate financing by working with the Administration, the General Assembly and users of PHIX
- ❑ Ensure that public funds and provider funds are spent appropriately and transparently
- ❑ Ensure that all Pennsylvanians benefit from health information exchange
- ❑ Ensure that PHIX improves the quality and efficiency of health care through the authorized exchange of clinical health care information

4.3 Governance

The pros and cons of three models for long-term governance of PHIX were discussed in the draft strategic plan, and the recommendation that the Commonwealth create a PHIX Public Authority similar to the Patient Safety Authority to govern PHIX, was offered for public comment.

The Authority would be structured to ensure stakeholders' representation on a board of directors with an Executive Director appointed by the Governor. This approach received only positive comments during the public comment period. We will therefore work with the General Assembly to create PHIX as an Authority. This authority structure will ensure meaningful input from Commonwealth agencies, hospitals, primary care practitioners and other health care providers, payers, regional HIE initiatives and consumers. This organization would manage the implementation and ongoing operations and ensure the sustainability of PHIX while at the same time ensuring that there is a collaborative approach to setting direction, implementing and maintaining PHIX functionality. At the same time the legislation creating the Authority will establish enforceable responsibilities for PHIX.

Organizational Structure. The governance organization will have a board of directors comprised of members that represent stakeholders. GOHCR is working with PHIX Advisory Council, the Health Care Reform Cabinet and the General Assembly to reach consensus on the composition of the Board.

The Board will focus on high-level strategic plans and decisions while overseeing committees or workgroups that will provide specialized advice and recommendations across all governance functions such as financing, legal requirements, policy compliance, technical infrastructure and operations. All of this will be supported by full time professional and support staff. The PHIX Advisory Council Governance Committee has recommended that the Authority Board utilize subcommittees, which could include Board and non-Board members, to accomplish much of its work. All PHIX Advisory Board and subcommittee meetings should be subject to Sunshine Law requirements to ensure that anyone interested can attend.

Legislation will be introduced to create the PHIX Advisory Board and establish its powers and duties in the next few months.

Phased Transition Approach. It will be necessary to develop a phased plan to transition the governance structure from GOHCR and the Commonwealth to the long-term governance structure once established. This will involve the incremental transfer of roles and responsibilities from the Commonwealth to the new entity. The transition plan will be well articulated and aligned with the development of PHIX across all of the domains identified by ONC. For example, the advisory and stakeholder groups could be transitioned early in the process, whereas the oversight of the development of the technical infrastructure may remain a Commonwealth function until the PHIX technical solution has been fully implemented and accepted. This transition plan will also need to appropriately allocate the funds available for the development of PHIX based on the changing responsibilities for PHIX operations.

Governance Summary

- ❑ The Commonwealth and PHIX Start-up
  - The initial start-up of PHIX will be managed by the Commonwealth in a highly-collaborative effort with stakeholders. The existing governance structure will be transitioned to a legislatively created public authority.
- ❑ Roles of Governance
  - The founding principles of PHIX include ensuring the clarity of decision making processes, inclusiveness, and that those organizations that will participate in PHIX must be provided a voice in governance.
- ❑ Public/Private Partnership
  - The long term governance of PHIX will be a public/private partnership that will reflect the interests of stakeholders and ensure the efficient and effective management of the HIE.
- ❑ Accountability and Transparency
  - PHIX must be governed and operated in a clear and accountable manner to ensure stakeholder support and that the promise of health information exchange is realized. This will mean meeting, and going above and beyond, State and Federal reporting requirements.

5.0 Finance

Ensuring financial stability is a guiding principle for the implementation and ongoing operation of PHIX. In addition to the costs for personnel and office operations, the PHIX budget must include costs for the PHIX infrastructure. Infrastructure includes hardware, the application software, interface costs, implementation costs, costs for additional software functionality beyond the base system and ongoing hardware and software maintenance costs.

ONC funding under the State Health Information Exchange Cooperative Agreement Program will support the state's strategic and operational planning implementation activities and the seed money necessary to pay for the basic PHIX infrastructure and get PHIX activities moving forward. Ensuring that the required matching funding for the cooperative agreement is available by October 2010 will be a key priority for GOHCR and will need to be included in the budgets passed by the General Assembly or provided by private sources.

It is estimated, however, that implementation of a statewide HIE, where every hospital and health care provider has access to patient information at the point of care, will cost well beyond the funding available through HITECH. Costs will be significantly higher during the first few years of implementation as the infrastructure for sharing data is being built. In the following years the cost will be limited to ongoing operational needs.

The total cost for Pennsylvania is dependent upon several variables.

- ❑ The number of entities housing patient data, ranging from independent hospitals to large integrated health care delivery networks, laboratories and payers

- The number of health care providers directly connecting to PHIX
- The number of different interfaces to disparate systems that must be implemented
- The extent to which hospitals, primary care practitioners and other health care entities will be expected to contribute to the cost of developing the interfaces needed to connect to PHIX
- The work required to enable sharing data with Commonwealth Agencies especially DoH and DPW's Medicaid system
- The number of project and implementation staff needed

Connecting regional HIEs and health systems is a priority because leveraging their work is more efficient than connecting many individual hospitals and providers. There is HIE activity underway in Pennsylvania within several organizations. KeyHIE, in the northeastern tier of Pennsylvania, has connected 11 participating hospitals to provide patient data to their emergency department physicians. The Commonwealth Medical College HIE is not yet operational, but it has a defined governance structure, has hired a director and has selected a vendor to provide their HIE capability within northeast PA. There are also several large integrated health care systems such as University of Pittsburgh Medical Center and several mid-sized hospitals, including Pinnacle Health System and Monongahela Valley Hospital, which have provided HIE-like connectivity with their community physicians. These entities offer reduced touch points and reduced costs to the statewide HIE as one interface or connection to the organization enables all of their connected providers and hospitals to access patient data without individual connections.

There are several financial models employed to fund HIEs across the country. Many of these models require payments by hospitals and physicians which may inhibit participation in exchange activities. To reduce barriers to adoption, the initial recommended financial model did not require payments by physicians and hospitals for the operation of PHIX and would fairly distribute the costs among all those who benefit from PHIX. These providers, however, may be required to pay for the interface to PHIX depending on the availability of funding.

It will also be necessary to establish clear financial controls and reporting at the governance level to ensure that the financing of PHIX is economical and sustainable over time.

5.1 Current-State Assessment

GOHCR is working on a detailed cost estimate for PHIX implementation and on-going operations, which will be the basis for a sustainable funding strategy for PHIX. The Finance Committee of the PHIX Advisory Council is working with GOHCR to construct a business case and financing strategy that can gain the support of the payer and provider community.

Funding sources and mechanisms may need to change as PHIX matures to reflect the development of new services and the realization of benefits to PHIX participants.

There is a basic level of funding for initial planning available from the Commonwealth via GOHCR. The Pennsylvania Budget enacted for FY2009-10 will provide $1 million towards the establishment of PHIX through GOHCR. Obtaining additional state revenue given the budget deficit and potential elimination of enhanced Federal Medical Assistance Percentage (FMAP) and ARRA funding will be unlikely for the foreseeable future.

The primary funding for PHIX planning and implementation through FY 2010 is the ONC State Health Information Exchange Cooperative Agreement Program. Pennsylvania has been

awarded $17.1 million under the HITECH Act provisions of ARRA (Sec. 3013). This funding will provide the support that is critical for the strategic and operational planning for the implementation of PHIX. Although a substantial sum, this award will not provide adequate funding for the complete implementation of PHIX and does not address the long term sustainability issues.

Additional funding to build an HIE infrastructure for Medicaid providers will be available through the OMAP. GOHCR and OMAP have worked closely to align their respective plans to maximize the funding available for HIE activities.

In addition to direct public funding the opportunities for other Federal monies and private and philanthropic sectors to contribute either direct or project specific funding will be investigated.

5.2 Long Term Sustainability for PHIX

To ensure the future effectiveness of PHIX, a comprehensive business and financing plan will be developed that will include a start-up strategy and provide for long term sustainability with identified revenue streams.

The business plan must address various areas.

- ❑ Estimate impact on improving quality and efficiency for the various types of user functionalities that will be needed to meet meaningful use for PHIX
- ❑ Provide estimates of potential savings from quality and efficiency gains expected and identify who stands to save money
- ❑ Identify appropriate sources of funding to augment ARRA dollars for the initial infrastructure and necessary interfaces with health care providers, insurers and health systems
- ❑ Identify all feasible revenue sources and revenue for ongoing maintenance and development after the infrastructure is in place
- ❑ Determine how the financing mix will adjust over time, as new users are added
- ❑ Consider whether the financing plan should address the needs of regional HIE development efforts already underway
- ❑ Define processes for budget monitoring and visibility into the overall spending of the initiative
- ❑ Establish the finance safe harbor mechanisms to ensure PHIX will not be, or will be minimally, impacted by changes in funding priorities and allocations by the Commonwealth

5.2.1 Cost-Benefit Assessment

Demonstrating the return on investment is necessary to justify ongoing stakeholder investment in PHIX. This can be achieved through specific PHIX services that can be identified and linked to cost savings. For example, participation in PHIX that will enable providers to secure incentives and to avoid “meaningful use” penalties in 2015 will be a particular benefit for Pennsylvania’s Medicaid and Medicare providers. The cost benefit analysis will examine as many cost savings as possible, including the use of technology coupled with transformed health care delivery to improve patient outcomes and reduce hospital readmissions, redundant testing,

medication errors, savings in patient and provider time, administrative costs, and specific areas such as pharmacy costs.

5.2.2 Funding Options

Long term funding options for PHIX operations currently under consideration include various combinations of legislative action and voluntary participation by stakeholders. These potential revenue sources include continuation of direct funding allocations from the Commonwealth budget, savings realized by improved patient care and/or charges, fees, and payments that may be based on the actual utilization of PHIX by participants. The funding structure will be developed to encourage, not discourage, as many health providers and organizations as possible to engage in meaningful exchange of clinical data. The funding structure needs to address increases in PHIX network participants and increases in the types of functionality requested by the PHIX users over time.

Potential future funding models for PHIX.

- Public Sector Funding
  - Continued support for PHIX from the federal government (beyond ONC's initial funding) and Commonwealth General Fund and Medicaid funds. This is a significant component of PHIX funding at least in the short term and if maintained will provide a strong signal to other participants of the commitment of government to the success of PHIX. This is problematic given the state budgetary problems.
- Voluntary Contributions by Insurers
  - Some insurers have indicated a willingness to make a voluntary contribution to help build the PHIX framework. Negotiating a cooperative agreement among the majority of insurers in Pennsylvania could provide sufficient funds to build the PHIX infrastructure and minimize the costs to hospitals, physicians, patients and other authorized users of PHIX, which would promote user adoption.
- Subscription/Membership Fees
  - Fees based on participation in PHIX can be developed to provide access to the PHIX infrastructure. Subscriptions can be tiered based on the specific services or functionality access by the type of organization (providers, hospitals, insurers, researcher) or members of the public. As such fees could be based on general participation on a monthly or annual basis. This kind of funding can be a regular and predictable source of funding.
- Transaction Fees
  - Payments per transaction based on a usage fee model collaboratively designed with participants. Transaction fees can be combined with subscription fees in a hybrid approach. Caution should be used in regard to the use of transaction fees as they may represent a barrier to HIE adoption if the benefits of the service are not clearly demonstrated.
- Value-added Services
  - Use of PHIX may provide valuable services which could offer some level of funding. Offering a scaled down version of an electronic medical record (EMR-Lite) to

providers may provide incremental revenue. Delivering results may be less costly through PHIX than by other means and may be a source for incremental revenue from data senders.

All of these options, and their various combinations, are potential approaches to providing a consistent and sustainable source of funding to support PHIX during development and also as it becomes a vital component of how health cares services are supplied by Pennsylvania's medical providers to patients.

5.3 Financial Management and Reporting

Financial reporting, audit and control mechanisms required for establishing and sustaining PHIX will be developed and maintained. Regardless of the type of PHIX governance entity selected, it will be important for the organization to be audited on an annual basis by an appropriate Commonwealth organization (e.g. Department of the Auditor General).

The ability of the PHIX governance entity to meet the additional high standards of financial transparency required by the Federal government under ARRA, and also established federal regulations, to identify the source and application of federal funds is also of vital importance. GOHCR and the future PHIX governance entity will ensure that mechanisms are in place and maintained to:

- ❑ comply with audit requirements of the Office of Management and Budget;
- ❑ submit annual Financial Status Reports;
- ❑ submit semi-annual progress reports to ONC; and
- ❑ submit quarterly reports as specified in section 1512(c) of the Recovery Act, including detailed information on any subcontracts or sub-grants awarded.

In order to accommodate the immediate needs for financial management and reporting, GOHCR will create mechanisms to meet all budgetary requirements and especially those additional requirements for ARRA funding.

5.4 Approach for Long-Term Sustainability

The long term funding of PHIX must be sustainable and not inhibit user participation. Costs to implement PHIX for all Pennsylvania hospitals and health care providers will be considerable[12], with the majority of the costs occurring in the first five years as the infrastructure is put in place.

The Finance Committee from the PHIX Advisory Council is currently working to recommend a business case and long-term financing plan for PHIX. Options for funding to stand up the infrastructure under consideration include voluntary contributions from insurers, health systems, Medicaid and others who will benefit.

We are working with the Office of Medical Assistance Programs (OMAP) to identify areas where Medicaid would provide their proportionate amount of the initial costs, provided an adequate state match can be allocated. It is estimated that Medical Assistance pays for 17% of the health care delivered in Pennsylvania. GOHCR is working with OMAP to identify programs which will

[12] In order to maintain leverage in the pricing of services, a cost estimate is not being set forth in this Strategic Plan.

assist eligible providers in achieving meaningful use and would provide appropriate funds to PHIX for implementation of the tasks.

Once PHIX is up and running, there will be ongoing costs to maintain and enhance the system. These precise costs are not known, but costs for maintenance are generally in the range of 20% of the hardware and software cost. GOHCR and the Finance Committee are exploring whether subscription and/or transaction fees could pay for ongoing costs without placing too high a cost burden on PHIX users.

GOHCR is working to have key stakeholders agree upon a financing plan, which can be implemented by the PHIX Authority.

Finance Summary

- PHIX Infrastructure and Interfaces
  - Statewide cost for PHIX will be considerably greater than the funding available through ARRA. Determining the model to support PHIX initial implementation and ongoing operational needs is essential. There are several models employed by existing HIEs which include a mix of public and private funding streams.
  - The $17.1 million in anticipated ARRA funding and state match will pay for the backbone of PHIX.
  - The PHIX Advisory Council Finance Committee is working with GOHCR to craft a financing plan to cover infrastructure and connection costs that exceed available ARRA funds. Options under consideration include voluntary contributions from insurers, health systems, and others who will benefit. The Medicaid Program should shoulder a proportionate amount of the initial costs, provided adequate state match can be allocated.
- Ongoing Maintenance and Development
  - Subscriptions and transaction fees are under consideration to help pay for ongoing cost of PHIX.
- Financial Management and Reporting
  - Audit and control mechanisms aligned with state and federal requirements will be established to manage all sources of funding made available for PHIX to provide transparency and accountability.

6.0 Technical Infrastructure

PHIX is envisioned as the connecting network for health information exchange across Pennsylvania, for connectivity with other states and with the NHIN platform. PHIX will be built on a secure, internet-based architecture that enables health care data transfer using recognized federal and state health information technology standards. The technical design will permit connection to regional HIEs and integrated health systems to leverage existing investments in their HIE efforts.

GOHCR's approach to defining and establishing the technical infrastructure for PHIX has focused on key areas.

- Establishing the appropriate authentication, credentials and consent management mechanisms to ensure the protection of consumer privacy
- Augmenting the understanding of Pennsylvania's HIE readiness, including HIT adoption across health care providers
- Ensuring PHIX meets the security, integrity, availability and reliability requirements
- Considering the integration with existing and planned Commonwealth infrastructure, such as Statewide Immunization Information System (SIIS) and MMIS
- Investigating the inter-state linkages that will be necessary for the effective development of the HIE to connect across state lines
- Collaborating with other ARRA initiatives, such as Broadband, to ensure accessibility and connectivity to PHIX from provider work locations where broadband availability is limited
- Leveraging existing patient and provider directories to avoid redundant work and costs

6.1 Current-State Assessment

GOHCR began planning for a statewide HIE in late 2007. A plan for statewide HIE was presented to Governor Rendell in early 2008. Work to identify technical requirements necessary for HIE began in 2008. The Requirements Committee reviewed and approved proposed requirements in March 2009.

Given the compressed timeframe for implementing an HIE under the State Health Information Exchange Cooperative Agreement Program, GOHCR has reviewed activities by other states to determine if a partnership could be established to leverage a proven, implemented technical infrastructure to accelerate the creation of PHIX. The Delaware Health Information Network (DHIN) and GOHCR have been involved in discussions to assess the feasibility of joining in a regional approach (Centers for Medicaid & Medicare Services (CMS) Region 3) to leverage the existing DHIN. The discussions have focused on the ability to leverage their technical architecture and the implementation work completed by DHIN, along with shared services to achieve an efficient and expedient Pennsylvania implementation. However, the recommendation to partner with DHIN caused significant adverse public comments by the IT vendor community and prompted a hearing by the Pennsylvania Senate.

6.2 Interoperability

PHIX will adopt nationally recognized standards and protocols to enable the interoperability and connectivity with existing investments of current HIEs (e.g., KeyHIE), envisioned future regional and local community health information exchanges, health care providers and large integrated delivery health systems and hospitals. PHIX will connect to and accommodate and/or assist the operations of these participants via an array of services.

PHIX will be able to provide essential services to physicians and patients.

- Electronic order routing and results delivery
- Clinical summary (e.g. discharge summary) exchange for care coordination across health care settings
- Clinical data sharing between disparate systems containing patient data
- EMR/EHR interfacing with the ability to provide data to Personal Health Records for patient engagement
- Electronic public health and quality reporting
- Electronic prescribing and re-fill request routing, status, and history

Key public health information systems can benefit from PHIX's ability to access disparate information sources.

- PA-NEDSS
- Real time Outbreak and Disease Surveillance (RODS) Hospital Emergency Room data system
- CDC Public Health Information Network Messaging System (PHINMS)
- DoH Electronic Lab Reporting (ELR)
- Statewide Immunization Information System (SIIS)
- Other DoH systems include: Cancer incidence monitoring systems, Newborn Hearing and Screening, Vital Records Birth/Deaths systems, School Health systems, Maternal and Child Health systems, and Healthy Woman program systems.

PHIX will provide the opportunity to streamline these data collection and data sharing efforts and make the approved and appropriate utilization of health information more efficient and effective. The statewide HIE should make it easier for providers to analyze health care indicators on an individual patient and statewide level to support the continuous improvement of health care practices and outcomes in Pennsylvania.

New and developing Pennsylvania health initiatives to improve quality will be positively impacted by the implementation of PHIX.

- Medicaid e-Prescribing
- Medicaid's Electronic Quality Improvement Projects (EQUIPs)
- Health Effectiveness Data and Information System (HEDIS) medical outcomes data reporting
- Quality Measurements for OB/Gyn, Pediatrics, Chronic Care, Screenings, ER utilization, and Behavioral Health

- Use of EMRs/EHRs in State Mental Health facilities

6.3 PHIX Architecture Approach

PHIX will enable authorized users to view and exchange relevant patient data and information over a secure internet-based connection. The patient information will come from different sources, such as physician offices, laboratories, pharmacies, hospitals, health systems, and payers. Ultimately, consumers of health care (patients) may also elect to connect their Personal Health Records (PHRs). Figure 5 provides a high level view of PHIX's target functional capabilities.

GOHCR will ensure that the PHIX architecture is in alignment with the Commonwealth's Medicaid Information Technology Architecture (MITA) plans and DPW's SMHP and initiatives. The PHIX governing entity will lead the efforts to define the full PHIX Enterprise Architecture (including standards considerations) and document the full scope of required PHIX technology and services.

The architecture will permit the exchange of data between entities that house patient data and authorized health care providers in a manner that will accommodate users at various stages of technology adoption.

6.3.1 Technical Architecture Principles

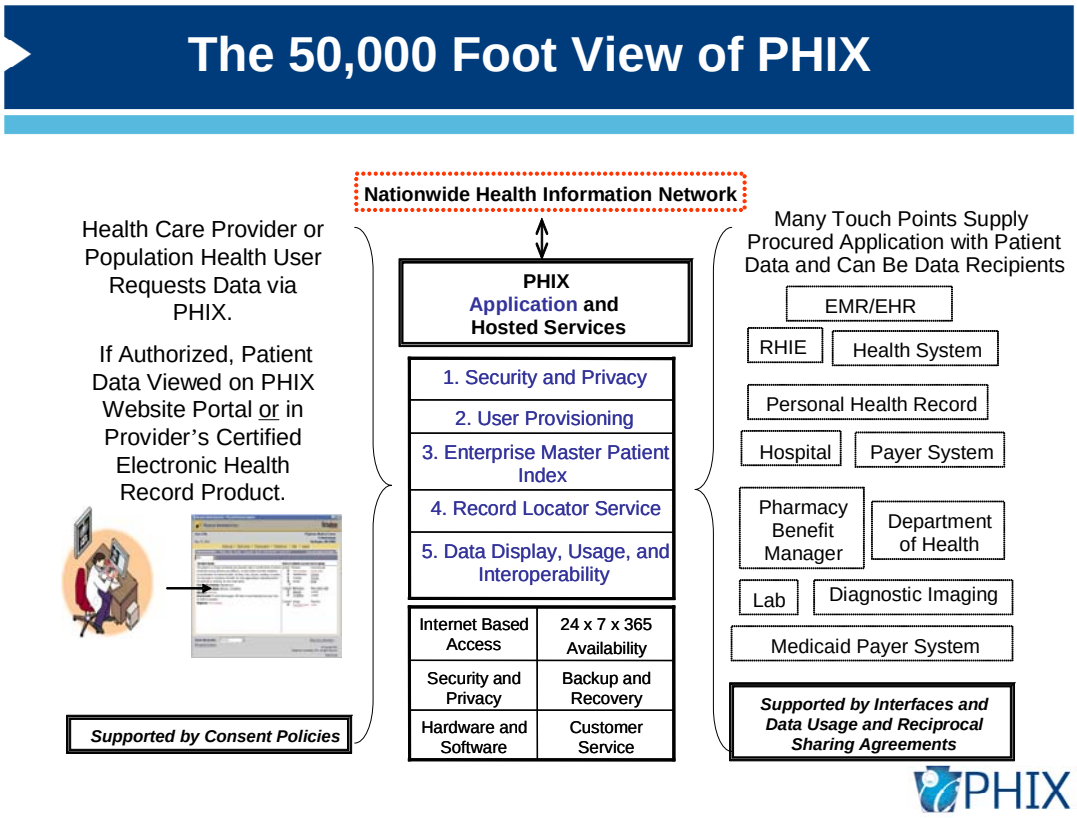
GOHCR has followed the principles listed below to achieve the vision for the statewide HIE architecture.

- Identifying the needs of the stakeholders (patients, providers, payers, government, etc.)
- Requiring federally recognized standards and implementation best practices
- Maintaining vendor and technology neutrality
- Providing the ability to integrate with existing platforms and health information exchanges
- Supporting "meaningful use" of EHRs
- Providing incremental expansion of data exchange functionality over time

6.3.2 PHIX Capabilities

PHIX will enable authorized users to view and exchange relevant patient data and information over a secure internet-based connection. The patient information will come from different sources, such as physician offices, laboratories, pharmacies, hospitals, health systems, and payers. Ultimately, patients may also elect to have data made available to populate their Personal Health Records (PHR). Figure 5 provides a high-level view of PHIX's target functional capabilities.

Figure 5. High-Level Functional View of PHIX



PHIX will support authorized and secure data exchange between authorized users and health care providers through the following.

- Clinical messaging - a "push" where a provider forwards clinical documents to another provider or entity. This includes the distribution of results from laboratories to physicians, physician referrals, and the exchange of clinical summaries between hospitals and physicians.
- Patient Query - a "pull" where a provider can use PHIX to query for all records linked to a specific patient.

There are two methods for PHIX to return the results of the query to the end-user: through display on the PHIX portal or through display in an EMR/EHR. The PHIX portal provides the user interface necessary to look up patient information for those users that do not have an EMR/EHR. Providers that do have an EMR/EHR have the ability to exchange electronic health information with, and to integrate, such information from other sources into a single person record. In this case, the EMR/EHR has the ability to import and display the query results provided by PHIX.

GOHCR identified desirable PHIX capabilities and features for the future implementation of the HIE. The features under consideration are further detailed in Appendix 10.2 of the Strategic Plan. PHIX potential capabilities can be broken into four categories.

- Consumer (patient) Services
- Data Services

- User and Subject Identity-Management Services
- Management and Security Services

Consumer services options include providing consumers with data to populate their PHRs.

Data services options are fundamental capabilities of the HIE. These are the capabilities that enable the sharing of clinical data. Data available via PHIX will fit effectively into the workflows of authorized users. Users will elect to view the data supplied by data sources, by either a portal view or through a certified electronic health record. The portal view will be enabled by the use of commonly available Web browsers. The EMR/EHR system view will be enabled by PHIX's adapter and interface specification(s). Vendors of EMR/EHRs will use these specification(s) to enable their product and customers to view and consume data provided via PHIX. EMR/EHR products will meet the required federal standards for a given health care setting and include the functionality of a certified EMR/EHR.

Certified EMR/EHRs will contain patient demographic and clinical health information and have the capacity to:

- provide clinical decision support;
- support physician order entry (e.g. laboratory, radiology, e-Prescribing);
- capture and query information relevant to health care quality; and
- exchange electronic health information with and integrate such information from other sources.

These capabilities will be necessary to enable users to meet ONC "meaningful use" criteria.

A notable technical challenge for health information sharing is identifying patients. This is made difficult due to the lack of a common patient identifier and the various methods employed by hospitals and providers in their systems to identify their patients. This will result in significant time spent to develop the algorithms required to offer patient matches. PHIX will include an Enterprise Master Patient Index, a table containing patient identification data used to correctly identify and cross-link patients to their known identifiers through probabilistic matching. This technology will use a method to determine whether a patient identified on a record matches a request for information, based on the probability that there is a match despite misspellings and other errors. The PHIX solution will also include a Record Locator Service (RLS) which provides the ability to locate a patient's records among disparate systems. Additionally, the PHIX solution will include a user provisioning component to ensure all end-users are appropriately authenticated and authorized, a relationship is noted between patients and their providers, and appropriate measures are in place to ensure traceability and audit-ability of requests and views of data.

A second challenge is the need to implement the numerous interfaces to connect with health care providers using diverse technologies. Many HIE vendors offer a library of interfaces but work is still required to implement them from both the HIE vendor side and the health care provider's vendor.

It is critical to ensure that PHIX is secure and in compliance with federal and Commonwealth of Pennsylvania privacy and security laws and regulations. This requires detailed information technology requirements for ensuring appropriate access and protection of personal health information. PHIX will include comprehensive 'data-centric' based security access, authentication, logging, auditing and disclosure reporting functionality. Combining role-based

security with data centric security will enable the PHIX legal policies to be technically deployed and monitored.

PHIX functionality must enable the exchange of at least the types of health information listed below. The alphabetical list below represents known business needs and corresponds to the business needs being addressed by national HIT standards activities directed by the ONC.

- ❑ Admission, discharge and transfer summary reports
- ❑ Advance directives
- ❑ Claims and eligibility data
- ❑ Chronic care management and quality indicators
- ❑ De-identified data extracts for approved research
- ❑ Diagnostic images
- ❑ Emergency room encounters
- ❑ Laboratory results
- ❑ Medication histories and prescription related processes
- ❑ Patient summaries, including problem lists
- ❑ Personal health records
- ❑ Public health event monitoring and support for bio-surveillance and emergency responders
- ❑ Registry information such as those for vital statistics, cancer, case management, and immunizations

As it will not be possible to enable all of these exchanges at once, GOHCR will work with OMAP and other stakeholders to prioritize the functionalities that are most critical for meeting ONC and OMAP “meaningful use” criteria.

6.4 Technical Infrastructure Recommendations

GOHCR’s initial recommendation made in the November 20, 2009 draft Strategic Plan was that the Commonwealth partner with Delaware to create PHIX, leveraging the Delaware Health Information Network (DHIN) platform. This recommendation was made in an effort to accelerate the implementation of HIE functionality in Pennsylvania and was authorized under Pennsylvania’s procurement code.

Public comment on this recommendation by the vendor community supported using a Request for Proposals (RFP) to select a contractor to build PHIX. In the interests of providing an opportunity for other potential vendors to compete, GOHCR plans to issue an RFP in April 2010.

Technical Infrastructure Summary

- ❑ PHIX Technical Architecture
  - PHIX will require a standards-based, secure, feature-rich application that will enable providers to achieve meaningful use of EHRs by October 2011.
  - PHIX will require a scalable technical platform capable of working with all providers, hospitals, and other care settings in the state.
  - PHIX will require numerous interfaces to inpatient and ambulatory EHR products, hospital clinical information systems, laboratory systems, and other clinical systems.
- ❑ Approach for Procurement of PHIX
  - GOHCR will issue a Request for Proposals to select a vendor to design, build and maintain the PHIX infrastructure.

7.0 Business and Technical Operations

Initially, there are key business and technical operations issues to be addressed.

- ❑ How the project will be managed during its initial phases?
- ❑ How will the proven product that Pennsylvania needs be procured?
- ❑ How to ensure that PHIX development is consistent with and supportive of the Medicaid HIT plan?
- ❑ How GOHCR and the succeeding governing entity will promote wider adoption of EMR/EHRs by health care providers?
- ❑ How will technical assistance and training be made available to health care practitioners and other providers to prepare for and implement EMR/EHRs?
- ❑ How to take advantage of existing state and regional HIE capacity to connect as many providers as possible as soon as possible?
- ❑ What statewide shared services and directories can be used for building blocks for PHIX?
- ❑ How will health care providers and consumers be educated about the benefits of HIE and the options for participation?
- ❑ How will the availability of broadband services to support HIE be expanded to areas without current access?
- ❑ How will problems with the operation of PHIX be reported and corrected and what mechanisms will be used to assure prompt corrective measures?

7.1 Current-State Assessment

GOHCR has responsibility for managing the strategic and operational planning process for PHIX and getting the project to the implementation phase. GOHCR was established by Governor Rendell to develop and coordinate the Governor's health care reform efforts, impacting every Commonwealth agency which in some way deals with health issues.

7.1.1 Project Management for Planning and Early Implementation of PHIX

The overall accountability for PHIX planning and initial implementation rests with Ann Torregrossa, Director of GOHCR, who reports directly to Governor Rendell. Ms. Torregrossa is a health law attorney with 39 years experience in Medicaid, Medicare and other publicly funded health care. Before joining the Rendell Administration, she was a consumer advocate, having co-founded the Pennsylvania Health Law Project. Prior to becoming Director of GOHCR, Ann served for six years as the chief policy maker for GOHCR. Other key managers responsible for PHIX planning and implementation are Phil Magistro, designated by the Governor as the State Government HIT Coordinator and Alix Goss, who is the PHIX Project Manager.

Phil Magistro is responsible for leading the project and ensuring that PHIX supports Pennsylvania's vision of a statewide comprehensive patient-centered care delivery system. His duties include working with the internal state government stakeholders and external stakeholder groups in order to understand their business needs and guide development of the strategic and operational planning process. Mr. Magistro has 30 years experience in health care including eighteen years in health care information technology as an operating manager, vendor executive and consultant.

Alix Goss is responsible for the day-to-day management and tactical activities of the PHIX initiative, including developing, directing and monitoring PHIX work plan activities to fulfill the defined strategic vision and policy in the design of the PHIX application/infrastructure, development of the legal framework, implementation of the communications strategy, procurement process, and implementation activities. Prior to joining GOHCR, Ms. Goss had 20 years of health care expertise as a consultant, analyst, standards developer and operations manager.

In addition, key staff members from DPW, DoH, OA and OLTL are supporting the PHIX initiative.

7.1.2 Preparation and Issuance of RFP

After working with the Requirements Committee of the PHIX Advisory Group to establish the baseline functional and technical requirements for the HIE highway, GOHCR has drafted an RFP for a proven product that can meet these requirements. This RFP was crafted with the assistance of an interdepartmental workgroup group with representatives of DoH, DPW, OA Office for Information Technology (OIT), and DGS. After a hiatus during which time GOHCR considered using an intergovernmental agreement, GOHCR is refining the RFP to reflect the specific needs and timelines included in the December 31st Notice of Proposed Rulemaking for Meaningful Use of EHRs. Release of the RFP is planned for April 2010.

7.2 Coordination with Medicaid HIT Plan

Concurrent with this planning process, OMAP is working to develop their SMHP. The PHIX Strategic Plan must be supportive of and consistent with the Medicaid plan. GOHCR staff has accompanied and participated in the Medicaid listening tours and DPW staff attended and participated in the public presentation on the PHIX draft strategic plan. Staff from PHIX and MA meet frequently to coordinate planning.

7.2.1 Electronic Quality Improvement Projects (EQUIPs)

Pennsylvania's Medicaid HIT vision is to improve the quality and coordination of care by connecting providers to patient information at the point of care through the "meaningful use" of EHRs. OMAP intends to achieve this vision by tying participation in EQUIPS relevant to the various practice areas of Medicaid providers. EQUIPs will require use of an EMR/EHR to share clinical data and will achieve "meaningful use" as a byproduct. PHIX planning will assure that the functionalities that need to be in place to support EQUIPs are prioritized. See Appendix 10.6 for DPW's Medical Assistance Health IT Vision Document.

7.3 EMR/EHR Adoption

Increasing the use of EMR/EHRs by primary care practitioners and other health care providers is a critical ingredient for achieving successful statewide exchange of health care information.

7.3.1 Medicaid HIT Survey

To achieve a better understanding of Pennsylvania's health care providers' HIT adoption level and to supplement the AHA data available on hospitals and PMS information on physicians, GOHCR and DPW collaborated on the Medicaid HIT Survey to support further PHIX EMR/EHR adoption readiness assessments.

These tailored surveys are to be issued by DPW and will target a large representative sample of providers, including small practices, as well as large managed care organizations. This approach presented a number of advantages, allowing GOHCR to achieve a broad and representative sample, leveraging an already developed comprehensive survey instrument and timing that fit within PHIX's planning phase. Additionally, Pennsylvania is one of eleven states currently working with CMS to analyze EMR/EHR adoption among Medicaid providers.

The survey will produce information to help develop educational materials for providers, obtain more information about technical assistance needs and help identify which EMR/EHR products Medicaid providers are currently using to enable decisions about EMR interfaces needed for PHIX.

7.3.2 Collaboration with Pennsylvania Regional Extension Center

Quality Insights of Pennsylvania has worked collaboratively with a group of organizations to apply for funding as a Regional Extension Center in Pennsylvania. The initial application was approved and a final application was submitted in early November 2009. ONC has since requested that QIP resubmit two separate proposals - one in conjunction with UPMC and Pittsburgh Regional Health Initiative (PRHI) to serve the western half of the state and another in conjunction with the Pennsylvania Medical Society (PMS) for the eastern half of the state.

To support and promote HIE adoption across the state, the RECs will assess individual provider's level of use of EHR and readiness to participate in an HIE. Because EMR adoption is

a fundamental building block for achieving HIE, GOHCR is committed to working closely with the RECs to define the mechanisms needed to encourage and support the adoption of certified systems in Pennsylvania.

7.3.3 Making EMR Technology Available to More Health Care Providers

The environmental scan and the comments received in the public input process highlighted the fact that both the costs and complexities involved in deploying a sophisticated EMR system will be considerable barriers for many health care providers, especially solo practitioners and providers in rural areas. Making an EMR–Lite product available to these providers at a minimal cost may increase participation in HIT and HIE. GOHCR will work with the REC and the PHIX Advisory Council on this important issue.

Availability of a loan fund for purchase and implementation support for EMRs may also be an option for consideration, particularly if ONC makes funding available to states for this purpose.

7.4 Access to Broadband

The environmental assessment conducted during this planning process clearly showed that lack of broadband access is an issue for many rural areas of Pennsylvania. Federal funding available through ARRA was certainly helpful, but the demand for funds far exceeded the availability. Additional Stimulus dollars dedicated to expanding broadband access are needed.

Seven applications with health care provisions were submitted in the first round of Broadband funding opportunities under ARRA. There are additional organizations intending to apply during the second round of funding expected in late 2009. Two of the first round application projects were funded in the first round of grants announced on February 18, 2010 for a total of $128 million announced. Efforts to achieve HIE in the areas of the state that will gain access to broadband as a result of these important initiatives will need to be informed by the timelines of these projects.

These grants are critical resources that will support significant improvements in the state telecommunications platform. However, the unmet need for broadband services will continue to be a problem in Pennsylvania, as we attempt to move to widespread adoption of EHRs and HIE.

7.5 PHIX Communication Strategy

Informing Pennsylvanians of the need and benefits of HIE requires a communication strategy targeted to a variety of audiences across Pennsylvania. It is important to explain the reasons and value of the PHIX initiative, while establishing awareness and agreement on how long term collaboration will be achieved. Strategies for communicating emerged during stakeholder discussions.

- ❑ Educate health care consumers and providers about how electronic records and electronic record exchange can improve the quality and efficiency of health care for Pennsylvanians, drawing on what has been learned in Pennsylvania's Chronic Care Initiative and from DPW's case management programs for Medical Assistance recipients

- Make information about the progress of PHIX development available on the newly created PHIX website[13]
- Work with the Consumer Advisory Committee to obtain ongoing feedback on policy and process development for PHIX
- Ensure that providers are aware of funding and technical assistance opportunities and are knowledgeable about the Regional Extension Center that will be funded through ARRA
- Leverage existing educational materials from federal, state and regional HIE efforts in preparing public service messages and communication materials

GOHCR will use all communication means at its disposal to get information out to the public about the benefits of adoption of EHRs and HIE.

- Continuing to work with the PHIX Advisory Council and the PAeHI to expand the understanding of unique stakeholder needs, current and proposed capabilities, and potential barriers to implementing health information exchange
- Continuing to work with the PHIX Consumer Advisory Committee on consumer education materials
- Presenting the strategic plan at numerous stakeholder meetings, such as hospital, medical, home health, nursing home, consumers and other associations
- Using the GOHCR electronic newsletter to provide information and updates on PHIX implementation to the more than 5,400 consumers and providers
- Requesting stakeholders to publish articles in their electronic newsletters on the progress of PHIX implementation
- Coordinating the overall state HIT strategic planning activities with the DPW SMHP and implementation activities
- Obtaining input from the Medical Assistance Advisory Committee and its numerous subcommittees
- Designing and distributing information on how to participate in PHIX

7.6 Technical Implementation Approach

GOHCR has defined an agreed-upon overall implementation strategy for PHIX through stakeholder meetings held over the past 2 years.

7.6.1 Leveraging Existing HIE Capacity within Pennsylvania

PHIX will enable the connectivity of existing regional health information exchanges, large integrated delivery networks, health systems, and individual hospitals. GOHCR understands that it is fundamental to consider the diverse and complex health care delivery system in Pennsylvania and to be strategic in the technical implementation of PHIX.

Regional HIEs and large integrated health systems and hospitals that have provided HIE-like connectivity to their community physicians will be early targets for connection to PHIX in order to

[13] http://www.pahealthinfoexchange.com

take advantage of these already established networks of providers. The best strategy for connecting health systems and other organizations that have established HIE capacity will be identified during implementation planning. The implementation strategy must include encouraging early adopters who will be able to assist in driving acceptance of PHIX and to ensure that there will be HIE access for all Medicaid providers. The early adopters are likely to include DPW's OMAP (as a payer), a regional health information exchange (RHIE), one or more of the large integrated delivery health systems in the state and several community hospitals. Early adopters may come from the following list.

Largest Health Systems in Pennsylvania

Health System	number of hospitals	number of patients discharged (2008)
University of Pittsburgh Medical Center	12	181,826
Jefferson Health Systems	6	109,291
University of Pennsylvania Health System	3	78,942
West Penn Allegheny Health System	6	78,922
Community Health Systems	10	77,357
Catholic Health East	6	65,834
Lehigh Valley Hospital and Health System	2	49,205
Abington Memorial Hospital System	2	45,052
Crozer-Keystone Health System	5	43,290
St. Luke's Hospital and Health System	3	40,111
Temple University Health System	3	39,812
Lancaster General Health	3	35,406
Pinnacle Health System	3	33,814
Wellspan	2	32,354
Geisinger	2	31,658
TOTAL	68	942,874

Earlier in the planning process, GOHCR had hoped to create Regional Health Information Organizations in every region of the state, and use them as the connection point for providers in their service area. This approach requires two or more years to have an operational exchange and, given the recent guidance, is not seen as a practical route to statewide HIE. Those RHIOs or Regional Exchanges that are already underway having invested their own resources will continue to receive support from GOHCR to foster their growth and expansion of services.

When possible, the PHIX implementation will leverage existing directories and shared services. There are over two million patients in the Medicaid Master Patient Index which may be leveraged to support PHIX connectivity to Medicaid providers. The same strategy may be employed when connecting to regional HIEs and large integrated health systems.

7.6.2 Incremental Approach

GOHCR realizes that an incremental implementation is necessary and full deployment to all participants will not be possible at 'go-live'. This is because of several factors including differences in users' levels of HIT adoption and the time required to connect each regional HIE, health system, hospital and other health care providers. The preferred option by the Commonwealth Agencies and private sector stakeholders is to initially ensure that the services delivered, address at a minimum, the requirements for "meaningful use" and continue to add incremental capabilities in well articulated phases based upon user's needs. The PHIX

implementation strategy will incrementally roll out PHIX services by provider and geography based on the SMHP and provider adoption readiness.

7.6.3 Leveraging the Operational Processes to Support "Meaningful Use"

Implementation strategies and prioritization of PHIX capabilities will be designed to ensure that the services delivered meet the requirements for "meaningful use", and then continue to add incremental capabilities in well articulated phases based upon participant's needs and recommendations in support of fuller adoption. The implementation strategy will focus on the "meaningful use" objectives defined by ONC and federal regulation. The implementation strategy will connect regional HIEs and large health systems, hospitals that demonstrate a level of adoption readiness, and other health care providers, such as laboratories and insurers. The implementation will include offering portal views and EHR interfaces for providers. Additional services and functionality will be incrementally rolled out based on the continued "meaningful use" guidelines.

7.6.4 Technical Assistance to Participants

GOHCR will follow a coordinated approach to provide technical assistance and broad-based support for the HIE initiative to its participants. The approach will consist of working closely with the Regional Extension Center, building internal technical advisory capability, using the OMAP HIT and the HAP and PMS surveys to determine, encourage and support the adoption rate HIT in Pennsylvania.

7.6.5 Expanding the IT Workforce

As the role of HIT expands in the delivery of health care services in Pennsylvania, it will be important to monitor the availability of the IT skills required. The resource level of highly skilled practitioners in areas such as database management and health informatics is especially important. Ensuring Pennsylvania's workforce is able to support and benefit from the developments in HIT will require a comprehensive approach that engages medical providers, educational institutions and the resources of the Commonwealth. GOHCR will work with the Department of Labor and Industry's Office of Health Careers to assess the workforce needs and devise a strategy.

7.7 Business and Technical Operations Recommendations

Acceptance and usage of PHIX necessitates broad understanding of the benefits of an HIE, a phased implementation strategy, how to participate in the exchange functionality and related governance aspects.

GOHCR recommendations.

- ❑ Publish an RFP to seek a proven product for Health Information Exchange upon which to build PHIX
- ❑ Offer the ability to support "meaningful use" of EHRs by October 2011
- ❑ Work with OMAP to determine their providers' level of adoption of EMR/EHRs and the readiness to participate in information exchange which will guide the communications and the technical implementation strategies for PHIX

- ❑ Formalize the roles and responsibilities for working with the REC and implement the communications strategy to promote HIT adoption, using all tools available
- ❑ Foster mechanisms to help health care providers ineligible for incentive payments to adopt EMR or EMR-lite technology to enable fuller participation in HIE
- ❑ Take advantage of existing HIE capacity in Pennsylvania by connecting regional HIEs, health systems and hospitals
- ❑ Collaborate with Department of Labor and Industry's Center for Health Careers to support workforce training and skill set development for HIT needs
- ❑ Collaborate with state agencies to increase the Broadband capabilities for providers.

Business and Technical Operations Summary

- Project Management
  - GOHCR staff supported by key Commonwealth agency staff will manage the operational planning and initial implementation phase of PHIX.
- Meaningful Use
  - The initial focus for PHIX must be on ensuring that HIE can support meaningful use requirements to enable providers to take advantage of Medicare and Medicaid incentive funding to pay for EHR adoption and implementation.
- Use Procurement Process to Obtain Platform for PHIX
  - Pennsylvania should move rapidly to put forth an RFP for procurement of the PHIX infrastructure.
  - The Commonwealth should select a vendor with a proven HIE product who can ensure that Pennsylvania health care providers are able to qualify for maximum Medicare and Medicaid incentive funding, beginning in October 2011.
- Deployment Strategy for PHIX
  - Take advantage of existing HIE capacity in Pennsylvania by connecting regional HIEs, health systems and hospitals with the initial goal of connecting as many health care providers as possible using fewest number of interfaces.
  - PHIX should leverage existing directories and shared services, such as the Medicaid Master Client Index.
- PHIX Communications Strategy
  - GOHCR will work with the REC to implement a detailed communications strategy designed to educate consumers and providers about how electronic records and electronic record exchange can improve the quality and efficiency of health care for Pennsylvanians. This communication strategy will take advantage of multiple communication methods to spread the word about PHIX, its benefits and how to participate in PHIX.
- More Investment Needed in Broadband
  - Collaborate with state agencies and external entities to increase the Broadband capabilities for providers.

8.0 Legal/Policy

Addressing security and privacy concerns for PHIX is a key priority. Existing federal law and Pennsylvania law already provide for strong legal protection for patient health information. Indeed, Pennsylvania's legal protections expand upon those provided by federal law for protected classes of clinical information. GOHCR's goal is to ensure that PHIX provides a high level of security and that there is clear protection for patient/consumer privacy. At the same time, GOHCR wants to ensure there are no non-essential barriers to the beneficial use of PHIX to improve health care practices, outcomes and efficiencies.

8.1 Current-State Assessment

A Legal Workgroup composed of twenty Commonwealth Office of General Counsel attorneys has been convened as a platform for collaboration with the private bar of the state. The Workgroup has conducted a detailed inventory and review of the existing laws in Pennsylvania that apply to privacy, security and personal health information exchange, has conferred initially with certain members of the private bar who have special expertise in health information exchange and has offered assistance in the creation of the draft PHIX policies elucidated in this Strategic Plan.

8.2 Process for Development of Policies, Rules and Trust Agreements

GOHCR plans to use the Legal Workgroup and its private bar stakeholders as an ongoing resource as GOHCR rolls out implementation of PHIX. They will assist in ensuring that Pennsylvania will comply with additional ONC guidance on nationally recognized standards (e.g. development of National Privacy and Security Framework). The Workgroup will also make recommendations to address statutory and regulatory barriers to HIE.

8.3 Key Legal and Policy Issues

8.3.1 Patient Authorization

One of the key issues of concern to both patients and health care providers is what health care records will be available through PHIX and under what kind of patient authorization.

Questions.

- ❑ Should patients have to specifically authorize inclusion of their health care records to be available through PHIX under an opt-in methodology?
- ❑ Should patient clinical information be automatically available through PHIX unless the patient opts-out of having records accessible?
- ❑ Should patients be able to opt-out some information but opt-in for other information?
- ❑ Should patients be able to exclude access to their clinical information for health care providers with whom they have terminated their relationship?

- How can health information requiring specific types of limitations and consent be accessible through PHIX (e.g., HIV, drug and alcohol, mental health)?
- How can patients challenge the accuracy of their health information and, if necessary, have that information corrected?

GOHCR has primarily explored the opt-in, opt-out spectrum of choices, which informs the answers to all of these questions. Health care providers, by and large, have indicated their preference for a scenario that minimizes the barriers to beneficial use of PHIX, i.e., providers want to ensure that the maximum amount of information can flow freely without the necessity to seek explicit permission (though special areas that have requirements more stringent than HIPAA should remain appropriately limited and protected). This is, in fact, how the current paper-based system works. Providers are generally free to disclose information for treatment, payment, and health care operations purposes. Providers do not want to see limits imposed in PHIX that do not exist in the current regime and they want PHIX to make available as much information as possible. Those who have spoken to GOHCR to date have expressed concern that incomplete information can be more dangerous than no information. GOHCR tends to agree and thus supports an approach that is on the spectrum of choices that fall between the Opt-in and the Opt-out methodology.

Under the ***Opt-out*** methodology, patients are automatically included in the PHIX process with the right to disallow their health information from being included in the PHIX exchanges between authorized users. Opting-out of PHIX means that patients' information is not available through PHIX even in emergency situations. Further, allowing full opt-out makes PHIX a potentially less useful tool for clinical and systemic improvement.

Under the ***Opt-in*** methodology, patients would have to specifically sign-up (opt-in) to have their records accessible through PHIX. Patients would have to take affirmative action to allow their records to be accessed and could be less likely to take the effort, making PHIX a less well-populated and, therefore, less useful tool.

GOHCR proposes the status quo approach. Under this approach, information now available under HIPAA will be available via PHIX if the provider is an authorized participant in PHIX. Disclosure of specially protected information (e.g. HIV, behavioral health) would require the same special, specific consents that it does today. This methodology ensures that there would be maximum availability of information in PHIX, which would lead to increased and more rapid improvement in quality and efficiency. However, patients who wish to opt out of having their health information available may do so.

The status quo approach permits no more sharing of patient information through PHIX than is permitted today. The difference from today's paper based system is that PHIX will provide an electronic audit trail for patients to see who has viewed their files. It is recommended that no change in the specific consents required to view super protected (e.g., HIV and behavioral health) information. This approach essentially maintains the status quo as to privacy rights around health information sharing.

This approach was overwhelmingly supported through public comments.

8.3.2 The "CAM"

The Legal Workgroup has completed the foundational efforts to inform the creation of a legal and policy framework for PHIX. The Workgroup, in collaboration with public/private

stakeholders, has completed the Health Information Security and Privacy Collaborative (HISPC) Comparative Analytical Matrix (CAM), which includes an inventory of nearly 150 subject matter areas typically addressed by state and federal law that involve or may impact use and disclosure of health information in PHIX. The outcome of the comparison is to identify state laws and regulations that are ***more stringent*** than the requirements of HIPAA. GOHCR recommends that these special, heightened requirements be included in the system requirements for PHIX. The completed CAM can be found in Appendix 10.7.

8.3.3 The DURSA

The Legal Workgroup has proposed to use the appended "Data Usage and Reciprocal Sharing Agreement" (DURSA) agreement to contract with entities and individuals who will send and receive information through PHIX (See Appendix 10.8). Note especially that PHIX, according to HIPAA as it has been changed by ARRA, will be a HIPAA Business Associate to the entities using PHIX for transmission of protected health information. GOHCR recommends that the DURSA contain certain standard, HIPAA-compliant Business Associate language rather than requiring PHIX to meet disparate, discretionary Business Associate standards that may prevail from Covered Entity to Covered Entity. This will ensure rapid startup and streamlined operation of PHIX.

8.3.4 Enforcement/Oversight

GOHCR proposes that a Commonwealth office be identified to address the oversight and enforcement of the rules and policies regarding PHIX. The preferred method to accomplish this goal is for the legislature to bestow certain enforcement authority upon the ultimate PHIX governing entity, and further, for that entity to appropriately monitor and report violations of law to other state and federal authorities, as necessary. The ability to enforce DURSA contractual terms will also contribute to PHIX's enforcement power. The framework requires additional description and agreement on potential sanctions. Some sanctions are suggested in the draft DURSA. The scope and structure of potential legislative processes to establish PHIX has not been fully determined. A common set of rules and policies to enable inter-organization and interstate data sharing policies is essentially created to a great degree by virtue of the creation and vetting of the CAM document, but certain details remain to be developed. GOHCR (and the succeeding governing body) will depend to the greatest degree possible on the standard approaches being created by HISPC and the Legal Workgroup in order to ensure rapid implementation and the fewest barriers to data sharing (especially interstate sharing).

8.4 Legal/Policy Recommendations

GOHCR recommendations.

- ❑ Patient consent policies for exchange of health information through PHIX remain the same as they are now, and protected classes of health information maintain their current special status
- ❑ PHIX system requirements will accommodate any state laws or regulations protecting privacy that are more stringent than HIPAA
- ❑ A new standard format/agreement for data sharing is proposed for use with PHIX.
- ❑ An office should be identified with the authority to monitor and enforce PHIX rules and policies for exchange of health information

Legal and Policy Summary

- Privacy and Security is a High-Priority for PHIX
  - The privacy and security of patient health information is of the highest possible concern in the development of PHIX. The PHIX Legal Workgroup is already conducting an exhaustive analysis of procedures and standards for ensuring the privacy of patient data.
- PHIX Policies, Rules and Trust Agreements
  - The policies, rules and agreements that will define how PHIX operates must be created within the boundaries of all applicable law and national standards.
  - The approach to patient consent for sharing health information through PHIX should maintain the status quo. Except for super protected information (HIV/AIDS status, mental health and substance abuse treatment, etc.), consent would be established based on existing laws and policies.
- Enforcement Framework
  - Effective means of enforcing the policies governing PHIX must be developed. This could include creating an oversight function and also creating appropriate sanctions for participants who do not comply with PHIX policies.
- Opt-Out Approach
  - Adopt an *opt-out* approach for PHIX, except for certain categories of specially protected health information.
  - For specially protected health information adopt an *opt-in* approach and create a standard template for use in opting-in.
  - Use a standard data usage and reciprocal sharing agreement (DURSA).
  - Establish a framework and assign authority for monitoring and enforcing PHIX rules and policies.

9.0 Evaluation Approach

GOHCR is committed to demonstrating the progress to be achieved through the use of PHIX by employing an evaluation approach that demonstrates the economic and quality value of health IT investments and the impact of these investments on PHIX participants. The evaluation approach will also focus on identifying areas for improvement, disseminating lessons learned, and continuously advancing HIT in Pennsylvania to improve health care practices, outcomes and efficiencies.

Medicaid Methods and Evaluation Tools to Reach Improved Care

To correspond with Medicaid's EQUIPs initiatives, an evaluation approach is being proposed in their vision document. As OMAP begins to receive provider comments about EQUIPs and determine those clinical data that will be collected and exchanged between providers and the Commonwealth, OPMAP will begin to develop the Methods and Evaluation Tools to Reach Improved Care (METRICs) that will be tied to adoption of certified EHRs and to the implementation of EQUIPs. As EHR data requirements become final at the federal level for specific provider groups, MA will incorporate these requirements into detailed METRICs. The early identification and implementation of METRICs will allow MA to enhance quality improvement projects over time based on outcomes, comments about the METRICs and the continued spread of HIT by health care providers across Pennsylvania.

Although additional work needs to be done to define the measures and mechanisms that will be used to assess the effects and impact of the PHIX development efforts, the evaluation process at a minimum will include:

- ❑ performance metrics identified during the development of the operational plan and specified in the ONC State HIE Cooperative Agreement Program, including ARRA-required performance measures; and
- ❑ evaluation and revision of Pennsylvania's strategic and operation plans on an annual basis or as needed.

METRICs will enable Pennsylvania to provide rich information about how Medicaid providers have attained "meaningful use".

9.1 Reporting Requirements

GOHCR will provide reports to ONC consistent with *HIE Cooperative Agreement Program* including the following reporting requirements for each of the five domains.

- ❑ Governance
  - What proportion of the governing organization is represented by public stakeholders?
  - What proportion of the governing organization is represented by private sector stakeholders?
  - Does the governing organization represent government, public health, hospitals, employers, providers, payers and consumers?
  - Does the state Medicaid agency have a designated governance role in the organization?
  - Has the governing organization adopted a strategic plan for statewide HIT?

- Has the governing organization approved and started implementation of an operational plan for statewide HIT?
- Are governing organization meetings posted and open to the public?
- Do regional HIE initiatives have a designated governance role in the organization?

❑ Finance

- Has the organization developed and implemented financial policies and procedures consistent with state and federal requirements?
- Does the organization receive revenue from both public and private organizations?
- What proportion of the sources of funding to advance statewide HIE are obtained from federal assistance, state assistance, other charitable contributions, and revenue from HIE services?
- What proportion of charitable contributions comes from health care providers, employers, health plans, and others?
- Has the organization developed a business plan that includes a financial sustainability plan?
- Does the governance organization review the budget with the oversight board on a quarterly basis?
- Does the recipient comply with the Single Audit requirements of the federal government's Office of Management and Budget?
- Is there a secure revenue stream to support sustainable business operations throughout and beyond the performance period?

❑ Technical Infrastructure

- Is the statewide technical architecture for HIE developed and ready for implementation according to HIE model(s) chosen by the governance organization?
- Does statewide technical infrastructure integrate state-specific Medicaid management information systems?
- Does statewide technical infrastructure integrate regional HIE?
- What proportion of health care providers in the state are able to send electronic health information using components of the statewide HIE technical infrastructure?
- What proportion of health care providers in the state are able to receive electronic health information using components of the statewide HIE technical infrastructure?

❑ Business and Technical Operations

- Is the statewide governance entity monitoring and planning for HIE as necessary throughout the state?
- What percent of health care providers have access to broadband?
- What statewide shared services or other statewide technical resources are developed and implemented to address business and technical operations?

- Legal/Policy
  - Has the governance organization developed and implemented privacy policies and procedures consistent with state and federal requirements?
  - Do privacy policies, procedures and agreements incorporate provisions allowing for public health data use?

9.2 Performance Measures

The following proposed measures are applicable to the implementation phase of PHIX and the cooperative agreement with the *ONC State HIE Cooperative Agreement Program*. GOHCR views these as an initial set of measures intended to provide a state-specific and national perspective on the degree of provider participation in PHIX and the degree to which pharmacies and clinical laboratories are active trading partners. e-Prescribing and laboratory results reporting are two of the most common types of an HIE within and across states.

These initial set of considerations for PHIX performance measures are intended to meet the guidance established by the ONC HIT. Some of the universe of potential performance measures identified are paired as a numerator and denominator rather than suggesting a target percentage due to the lack of clarity around some of these definitions. Other measures are raw numbers especially for expected high-volume transactions (e.g. lab results). (D) = Denominator

- Number of unique people identified in consumer (patient) index file
- Number of consumers using PHIX to send data to the PHR of their choice
- Total population of the state (D)
- Number of licensed clinician logins to PHIX portal
- Number of licensed clinicians authorized to use PHIX (D)
- Number of licensed clinicians authorized to bill Medicaid covered by PHIX (D)
- Number of licensed clinicians authorized to bill Medicaid in the state (D)
- Number of EHRs reporting patient ID data through PHIX
- Total volume of patient ID transactions received and processed correctly (D)
- Number of hospitals providing data through PHIX
- Total number of hospitals in state (D)
- Number of surveillance transactions sent to DoH through PHIX
- Number of surveillance transactions retrieved via PHIX (by portal lookup or directly to EHR)
- Total number of surveillance transactions sent to DoH (D)
- Number of immunization records sent to state registry via PHIX
- Number of immunization records retrieved via PHIX (by portal lookup or directly to EHR)
- Total number of immunization records sent to state registry
- Number of clinical results sent through PHIX (unsolicited)

- Number of lab results sent through PHIX in structured, coded format

- ❑ Number of clinical results retrieved through PHIX (on demand)
  - Number of lab results retrieved by EHRs in structured, coded format
- ❑ Number of patient summaries (continuity of care documents) sent through PHIX (unsolicited)
  - Number of patient summaries sent through PHIX with structured problems and allergies
- ❑ Number of patient summaries retrieved through PHIX (on demand)
  - Number of patient summaries retrieved by EHRs sent with structured problems and allergies
- ❑ Number of medication profiles sent through PHIX (unsolicited)
  - Number of medication profiles sent through PHIX in structured, coded format
- ❑ Number of medication profiles retrieved through PHIX (on demand)
  - Number of medication profiles retrieved by EHRs in structured, coded format
- ❑ Average time from completion of paperwork to bringing a clinician on-line
- ❑ Service levels, measured as the time required for 98% or more of all items measured
  - Transit time for unsolicited clinical results
  - Response time for patient lookups, computer to computer
  - Response time for patient lookups, portal
  - Time for trouble calls to be answered
  - Time for trouble calls to be resolved
- ❑ Service levels, availability as a percentage of the total calendar time in a period
  - Incoming message servers
  - Query servers
  - Clinician portal
- ❑ Security and privacy
- ❑ Consumer Satisfaction
- ❑ Ability to identify readmissions across a region. This means picking up where a patient is discharged from one hospital and readmitted to a different hospital within 30 days.

GOHCR will also be required to report on additional measures that will indicate the degree of provider participation in PHIX particularly those required for “meaningful use”. Future areas for performance measures that will be specified in ONC program guidance will include but are not limited to: providers’ use of electronic prescribing; exchange of clinical summaries among treating providers; immunization; quality and other public health reporting; and eligibility checking.

9.3 Evaluation Approach Recommendations

The evaluation approach will be multi-tiered due to the reporting needs of the long-term governing body and from ONC and the desire to continuously improve PHIX functionality and business processes. The recommendation is for the PHIX governing body to define and create a reporting framework that meets the requirements of ONC and self-monitoring and will offer guidance for ongoing improvement. The framework will deliver the data that can be used for ONC submission, can be used to evaluate day-to-day operations and can be used to evaluate overall performance, improvements and savings.

The measures needed for ONC reporting will be identified following the approval of the Strategic and Operational plans by ONC. The measures required for continuous quality improvement should be created by a group comprised of state agency and external stakeholders.

10.0

Evaluation Approach Summary

- Reporting Requirements
  - PHIX must be able to meet all reporting requirements for the cooperative agreement program and also other federal and Commonwealth requirements.
- Evaluation and Performance Measures
  - The implementation, operation, and impact of PHIX will be monitored closely and continuously in order to demonstrate effective deployment, effectiveness and results. Performance measures will be selected and continuously refined and augmented to ensure that PHIX is well understood and contributing to the strategic goals for health information exchange in Pennsylvania.
- Recommendations
  - Establish initial performance measures
  - Evaluate and revise strategic and operational plans on a regular basis

Appendices

10.1 Appendix – Definition of Terms

American Recovery and Reinvestment Act of 2009 (ARRA): This Act is a $787.2 billion stimulus measure, signed by President Barack Obama on February 17, 2009, that provides aid to states and cities, funding for transportation and infrastructure projects, expansion of the Medicaid program to cover more unemployed workers, health IT funding, and personal and business tax breaks, among other provisions designed to stimulate the economy.

Centers for Medicare and Medicaid Services (CMS): CMS is a federal agency within the United States Department of Health and Human Services that administers the Medicare program and works in partnership with state governments to administer Medicaid, the State Children's Health Insurance Program (SHIP), and health insurance portability standards.

Certification Commission for Healthcare IT (CCHIT): CCHIT was the recognized certification body for electronic health records and their networks. It is an independent, voluntary, private-sector initiative, established by the American Health Information Management Association (ANIMA), the Healthcare Information and Management Systems Society (HIMSS), and The National Alliance for Health Information Technology.

Certified EHR: A qualified electronic health record that is certified pursuant to section 3001(c)(5) of the HITECH Act as meeting federal standards applicable to the type of record involved such as an ambulatory electronic health record for office-based physicians or an inpatient hospital electronic health record for hospitals.

Continuity of Care Document (CCD): The Continuity of Care Document (CCD) specification is an XML-based markup standard intended to specify the encoding, structure and semantics of a patient summary clinical document for exchange.

Electronic Health Record (EHR): As defined in the ARRA, an Electronic Health Record (EHR) means an electronic record of health-related information for an individual that includes patient demographic and clinical health information, such as medical histories and problem lists; and has the capacity to provide clinical decision support, to support physician order entry, to capture and query information relevant to health care quality, and to exchange electronic health information with and integrate such information from other sources.

Electronic Medical Record (EMR): An electronic record of health-related information on an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within one health care organization.

Electronic Prescribing (e-Prescribing): A type of computer technology permitting physicians to use handheld or personal computer devices to review drug and formulary coverage and to transmit prescriptions to a printer or to a local pharmacy. e-Prescribing software can be integrated into existing clinical information systems to allow physician access to patient-specific information to screen for drug interactions and allergies.

Health Information Exchange (HIE): As defined by the Office of the National Coordinator and the National Alliance for Health Information Technology (NAHIT), HIE means the electronic movement of health-related information among organizations according to nationally recognized

standards.

Health Information Technology (Health IT): As defined in the ARRA, Health IT means hardware, software, integrated technologies or related licenses, intellectual property, upgrades, or packaged solutions sold as services that are designed for or support the use by health care entities or patients for the electronic creation, maintenance, access, or exchange of health information.

Health Information for Economic and Clinical Health Act (HITECH): HITECH collectively refers to the health information technology provisions included at Title XIII of Division A and Title IV of Division B of the ARRA.

Health Insurance Portability and Accountability Act (HIPAA): HIPAA was enacted by Congress in 1996. Title I of HIPAA protects health insurance coverage for workers and their families when they change or lose their jobs. Title II of HIPAA, known as the Administrative Simplification (AS) provisions, requires the establishment of national standards for electronic health care transactions and national identifiers for providers, health insurance plans, and employers. The Administration Simplification provisions also address the security and privacy of health data. The standards are meant to improve the efficiency and effectiveness of the nation's health care system by encouraging the widespread use of electronic data interchange in the U.S. health care system. ARRA has made amendments to HIPAA's security and privacy provisions.

Health Information Exchange Organization: An organization that oversees and governs the exchange of health-related information among organizations according to nationally recognized standards.

Interface: A means of interaction between two devices or systems that handle data.

Interoperability: Interoperability means the ability of health information systems to work together within and across organizational boundaries in order to advance the effective delivery of health care for individuals and communities.

Meaningful EHR User: As set out in the ARRA, a Meaningful EHR user meets the following requirements: (i) use of a certified EHR technology in a meaningful manner, which includes the use of electronic prescribing; (ii) use of a certified EHR technology that is connected in a manner that provides for the electronic exchange of health information to improve the quality of health care; and (iii) use of a certified EHR technology to submit information on clinical quality and other measures as selected by the Secretary of HHS. For additional information on "meaningful use" refer to ONC's website: http://healthit.hhs.gov/portal/server.pt?open=512&objID=1325&parentname=CommunityPage&parentid=1&mode=2

Nationwide Health Information Network (NHIN): A national effort to establish a network to improve the quality and safety of care, reduce errors, increase the speed and accuracy of treatment, improve efficiency, and reduce health care costs.

Office of the National Coordinator (ONC): ONC serves as principal advisor to the Secretary of HHS on the development, application, and use of health information technology; coordinates HHS's health information technology policies and programs internally and with other relevant

executive branch agencies; develops, maintains, and directs the implementation of HHS' strategic plan to guide the nationwide implementation of interoperable health information technology in both the public and private health care sectors, to the extent permitted by law; and provides comments and advice at the request of OMB regarding specific Federal health information technology programs. ONC was established within the Office of the Secretary of HHS in 2004 by Executive Order 13335.

Privacy: In December 2008, the Office of the National Coordinator for Health IT released its "Nationwide Privacy and Security Framework For Electronic Exchange of Individually Identifiable Health Information", ("Framework") in which it defined privacy as, "An individual's interest in protecting his or her individually identifiable health information and the corresponding obligation of those persons and entities that participate in a network for the purposes of electronic exchange of such information, to respect those interests through fair information practices".

Regional Health Information Organization (RHIO): A health information organization that brings together health care stakeholders within a defined geographic area and governs health information exchange among them for the purpose of improving health and care in that community.

Regional Extension Centers (RECs): As set out in the ARRA, RECs will be established to provide technical assistance and disseminate best practices and other information learned from the Health Information Technology Research Center to aid health care providers with the adoption of health information technology and in becoming meaningful users of EHRs.

State-Designated Entities (SDEs): As defined in the ARRA, SDEs may be identified by a State as eligible to receive funds under Section 3013 of the ARRA. To qualify as an SDE, an entity must be a not-for-profit entity with broad stakeholder representation on its governing board; demonstrate that one of its principal goals is to use information technology to improve health care quality and efficiency through the authorized and secure electronic exchange and use of health information; adopt nondiscrimination and conflict of interest policies that demonstrate a commitment to open, fair, and nondiscriminatory participation by stakeholders; and conform to other requirements as specified by HHS.

Security: The Health Insurance Portability and Accountability Act Security rule defines "Security or Security measures" as "encompass[ing] all of the administrative, physical, and technical safeguards in an information system.

U.S. Department of Health and Human Services (HHS): HHS is the federal government agency responsible for protecting the health of all Americans and providing essential human services. HHS, through CMS, administers the Medicare (health insurance for elderly and disabled Americans) and Medicaid (health insurance for low-income people) programs, among others.

10.2 Appendix – Future PHIX Capabilities and Features

Consumer Services

The Consumer Services features that may be supported by PHIX are described below.

Table 2. Features Supporting Consumer Services

Feature	Description
Support consumer-designated third-party PHR	Provides a mechanism for consumers to receive information via PHIX that would populate a "personal health record" of their choice.
Centrally controlled access policies that support the consumer role	Supports identification of a consumer and gives role-based access to the consumer, in the same sense that PHIX may for its role-based access for health care providers.
Consumers can send data from their PHRs to physicians' EHRs	Where consumers have designated a system participating in PHIX as their PHR, PHIX may permit that system to direct data to physicians, practices, hospitals or other provider-participants in the HIE.
Consumer can send and receive secure messages to Physicians EHRs or other means	PHIX may permit consumers to send messages to physicians via secure messaging directly to physician EHRs or other messaging system (e.g. secure email).
Prevents retrieving data about patient	Prohibitions on handling data prohibit data about the consumer being retrieved in inquiries generated by clinician users of EHRs/EMRs.
Restricts information flow to or from PHR	Consumer-initiated prohibitions on handling data prevent it being sent to or retrieved from the consumer's PHR.
Cross-HIE reconciliation of user identities	Supports reconciliation of user identities across PHIX boundaries.
Education Services	Provides a means by which consumers could access health education information and related sources.

Data Services

The Data Services features under consideration by PHIX are described below.

Table 3. Features Supporting Data Services

Feature	Description
Retrieve clinical information:	Ability to retrieve clinical information in the manner described in subsequent rows.
■ Directly from participating EMR/EHR	Clinical data can be retrieved directly from participating EMR/EHR systems.
■ From a combined clinical data repository (CDR)	Clinical data can be retrieved from a CDR that is included as part of the product.
■ From an "edge server"	Clinical data can be retrieved from a CDR that is segregated to include data for specific participating health care organizations.
Alerts to users that new data is available	Includes a way for health care providers to be prospectively notified that new data are available about a patient without having to inquire

Feature	Description
	to find out if the data are available.
Summary patient record	Ability to provide a health care provider with a summary of a patient's health status. This summary is either constructed from information available from edge servers or Continuity of Care Document exchanges, or the technology relies on one or more of the participating EMR/EHRs to provide the source of summary report (sourced).
Send reports directly to providers via a Portal	Ability to prospectively route reports from a sending system to a provider's EMR/EHR without the provider making an inquiry.
Send reports directly to providers' EMR/EHRs	Ability to prospectively route reports from a sending system to a provider's EMR/EHR without the provider making an inquiry.
Send reports to providers via FAX or online printer	Ability to prospectively route reports from a sending system to a provider's fax machine or a printer in the provider's office.
Send reports to providers via email/secure messaging	Ability to prospectively route reports from a sending system to a provider via another means (e.g., secure e-mail).
Interfaces to common EMR/EHRs	Ability to create interfaces with common EMR/EHR products for the transmission of data.
Nonrepudiation of transmission	Includes a way to verify that information putatively transmitted from the sending organization was actually sent from that organization and was not subsequently modified.
Nonrepudiation of receipt	Includes a way to verify the information that has been sent to a receiving organization was actually received by that organization.
Aggregation of data	Ability to accumulate aggregated data for secondary use while it handles individual transactions.
"Anonymize" data	Ability to strip identifying information from data being passed through PHIX.
Reversible anonymization	Ability to "anonymize" data in a manner that can be reversed upon request from an authorized user.

User and Subject Identity Management Services

The User and Subject Identity Management Services features under consideration by PHIX are described below.

Table 4. User and Subject Identity Management Services

Row Heading	User and Subject Identity Management Services
Enterprise Master Patient Index (eMPI)	Includes a database that contains a unique identifier for every patient in the enterprise.
Patient lookup with "fuzzy logic"	EMPI technology supports patient lookup using determininstic indexing or probabilistic searching.
Users identification and authentication	Where the technology supports direct access by health care providers or consumers, it identifies and authenticates the user.
Role-based access control	Where the technology supports direct access by health care providers or consumers, it provides role-based access control.
Control user access	Where the technology supports direct access by health care providers or

Row Heading	User and Subject Identity Management Services
to patient data on some basis other than user role	consumers, it provides a means of controlling the access of users other than simply by the role assigned to the user.

Management and Security Services

The features under consideration are described below.

Table 5. Features Supporting Subject and Identity Management

Feature	Description
Professional credentialing info for users	Provides some credentialing information for users who are health care providers. In no case is the credentialing information as complete as would be required to establish affiliations between individual providers and care delivery organizations.
Cross-HIE reconciliation of user identities	Supports reconciliation of user identities across HIE boundaries.
Logging Views or Transmissions	Ability to record which user has viewed data for which patient (Views—V) and/or the ability to record what information has been sent to and from participating systems (Transmissions –T).
Audit files can be used to identify user	The audit file used for logging identifies the user who has retrieved information about a patient.
Audit files can be used to identify user of remote EHR	In the situation where a user is authenticated to his/her participating EMR/EHR, this implies that the audit file includes sufficient information to disambiguate the user ID.
Route data to public health	Includes the facilities to route copies of data being sent through the HIE to public health systems consistent with the law and PHIX policy.
Suspend user access	Ability to temporarily suspend a user's access to health care information without removing the user from the system.
"Break the glass" access for data on an individual patient	Ability for a health care provider to obtain clinical information about an individual patient that would otherwise be denied, subject to extra scrutiny after the fact.
"Break the glass" access for a whole population of patients	Ability to systematically enable access to selected populations of patients by selected providers for use in disaster situations.

10.3 Appendix – Pennsylvania HIT Case Studies

HIT Adoption Case Studies

In May 2007 the **Pennsylvania Chronic Care Management, Reimbursement and Cost Reduction Commission** was created to develop a strategic plan for treating chronic disease that would improve the quality of care for those with these conditions while reducing avoidable illnesses and their costs. In Pennsylvania 800 primary care physicians are caring for over one million patients with these kinds of chronic conditions that have a dramatic impact on personal quality of life and the costs of health care across Pennsylvania. The Chronic Care Model being implemented includes a Web-based patient registry to track a number of interventions and clinical parameters important in evidence-based chronic disease management and provide alerts if there are problems.

A national leader in EHR implementation is **Geisinger Health System**, which has successfully accelerated the widespread use of an electronic health record with its 670 physicians working in 42 clinics in more than 31 counties with 100% adoption. Physicians report improved care processes, enhanced patient-physician communication and a patient satisfaction rate of 99%. Anticipated benefits with this new capability include increases in patient convenience and satisfaction, feedback on patient adherence to treatment regimens and overall improvements in quality tracking.

The **University of Pittsburgh Medical Center (UPMC)** is making the adoption and utilization of electronic medical records a reality. UPMC is:

- implementing an interoperable platform that connects virtually all clinical systems into one "shared" record;
- extending this platform to achieve interoperability enabling functionality that is “aware” of the meaning of data and making use of that information to support more physician friendly-behavior of applications; and
- installing a platform that enables UPMC to implement new applications that make use of (leverage) the information and services in other information systems.

This effort will position UPMC to better manage quality, reporting, physician relationships and public health. This project will also set the infrastructure for UPMC to share information, services and other resources with other health care organizations in it geographic area.

Adapted from the Pennsylvania eHealth Initiative White Paper ‘Establishing Widespread Adoption of Electronic Health Records and Electronic Prescribing in Pennsylvania’ (2008)

http://www.paehi.org/Documents/PAeHI%20EHR-eRx%20White%20Paper%20Executive%20Summary%202-22-2008.pdf

10.4 Appendix – Pennsylvania HIE Case Study

Keystone Health Information Exchange (KeyHIE) was founded in 2005 with funding from the Agency for Healthcare Research and Quality and the Pennsylvania Department of Health. The project is also supported in by the Geisinger Health System.

KeyHIE currently connects 8 hospitals with another 5 already committed to participation. The Exchange will eventually connect physicians and other health care professionals in a 31-county region across central Pennsylvania. The initiative has developed a strong governance process that is guided by clear objectives to:

- create a collboratieve organization to facilitate exchange of regional health information;
- develop, implement, and monitor safeguards to ensure the integrity, confidentiality, and security of patient information;
- promote effective use of information technology wherever the patient needs it;
- create a model of rural health information sharing; and
- educate and motivate the community (e.g., patients, providers) to share health information

Project participants have also agreed values and guiding principles including an emphasis on regional cooperation, patient privacy, confidentiality, and judicious use of technology to maximize existing investments by partners.

Technically the KeyHIE approach utilizes a shared master patient index (MPI) and Record Locator Service (RLS) and a federated approach to data access with each participating retaining control over its clinical data. The HIE provides a record of patients clinical encounters and if a patient had provided an authorization to the inquiring organization the medical practitioner will be able to view a summary of the patient's previous encounters. If additional information is required KeyHIE provides a Web-based viewer for practitioners to access partner's EMR/EHR systems providing an access agreement is in place. KeyHIE also provides a single sign-on service for users to access multiple partner EMR/EHRs. Patient documents are also able to be exchanged via KeyHIE. Patient authorizations are provided on a 'opt-in' basis with patient providing authorizations to participating hospitals.

Source: https://www.keyhie.org/

10.5 Appendix – PHIX Advisory Council Membership

- AETNA (on behalf of Commercial payers)
- BLUE CROSS OF NORTHEASTERN PENNSYLVANIA
- CAPITAL BLUE CROSS
- COMMONWEALTH MEDICAL COLLEGE
- DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT
- DEPARTMENT OF HEALTH
- DEPARTMENT OF INSURANCE: (Pending appointment)
- DEPARTMENT OF PUBLIC WELFARE
- GOVERNOR'S BUDGET OFFICE
- GOVERNOR'S OFFICE OF HEALTH CARE REFORM
- GOVERNOR'S POLICY OFFICE: (Pending appointment)
- HIGHMARK, INC
- HOSPITAL AND HEALTHSYSTEM ASSOCIATION OF PENNSYLVANIA
- INDEPENDENCE BLUE CROSS
- OFFICE OF ADMINISTRATION
- PENNSYLVANIA BUDGET & POLICY CENTER (on behalf of consumers)
- PENNSYLVANIA HOUSE OF REPRESENTATIVES – MAJORITY
- PENNSYLVANIA HOUSE OF REPRESENTATIVES – MINORITY
- PENNSYLVANIA STATE SENATE – MAJORITY
- PENNSYLVANIA STATE SENATE – MINORITY
- PENNSYLVANIA EMPLOYEE'S BENEFIT TRUST FUND
- PENNSYLVANIA MEDICAL SOCIETY
- PENNSYLVANIA PHARMA TASK FORCE: (Pending appointment)
- PENNSYLVANIA PHARMACISTS ASSOCIATION
- PENNSYLVANIA STATE NURSES ASSOCIATION

ROSTER LISTING CURRENT AS OF November 2009

10.6 Appendix – DPW's Medical Assistance Health IT Vision Document

See Attachment A

10.7 Appendix – Comparative Analytical Matrix

DRAFT Pennsylvania Comparative Analysis Matrix (CAM)				
NOTE: Pink shading indicates that Law/Reg is more stringent than HIPAA		More Stringent than HIPAA for		
Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
Privacy Specific Provisions				
--Comprehensive general privacy act	73 P.S. §§ 2301 - 2329 (Breach of Personal Information Notification Act)	sometimes yes	sometimes yes	
--Comprehensive medical privacy act	No such thing.			
--Constitutional right to privacy	Art. I , § 8: The people shall be secure in their persons, houses, papers and possessions from unreasonable searches and seizures, and no warrant to search any place or to seize any person or things shall issue without describing them as nearly as may be, nor without probable cause, supported by oath or affirmation subscribed by the affiant. The Pa. Supreme Court has interpreted the Pa. Constitution to include a right of privacy that encompasses personal information, including medical and health information.			
				"Penumbral." Arises from the confluence of other explicit rights.
--Restrictions on use of Social Security number	71 P.S. § 2601, et seq. Social Security Number Privacy Act. 71 P.S. § 2605 No health insurer shall place an insured's SSN on a health insurance identification card.	no	no	
...Records maintained on individuals				5 USCS § 552a
...Disclosure of nonpublic personal information				15 USCS § 6801
...Evidence and procedure for establishment of benefits				42 USCS § 405
HIPAA-Based and Other Federally-Based Provisions				
HIPAA				45 CFR Parts 160, 162, 164
--Provisions adopting other federally-based provisions				42 CRF Part 2
...Disclosure of nonpublic personal information				15 USCS § 6801
...Family educational and privacy rights				20 USCS § 1232g
Health Information Provisions				
--Health information exchange specific provisions limiting disclosure	34 Pa. Code § 61.21			
...Safeguarding information	55 Pa. Code § 105.1			
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Mental Health Procedures Act	50 P.S. § 7101	no	no	
...PA Drug and Alcohol Abuse Control Act	71 P.S. § 1690.101	yes	yes	
...HHS--SSA--Statutory basis and purpose				45 CFR 160.101
...Uses and disclosure of protected health information				45 CFR 164.502
--Electronic health/medical record specific provisions				45 CFR 164.302
...Security standards for the protection of electronic health information				45 CFR 164.500
--Breach of electronic security reporting - general				45 CFR 164.302
--Breach of electronic security reporting - health records				15 U.S.C. § 96
--Telehealth/telemedicine provisions				45 CFR 164.500
--Electronic signatures				15 U.S.C.S. § 96
--Personal health records				45 CFR 164.500
--Uniform Electronic Transactions Act				
--Technical security of electronic systems provisions				45 CFR 164.312
Health/Medical Records In General				
--Records retention requirements				42 CFR 431.306
...Basic hospital functions--Condition of participation: Medical record services				42 CFR 482.24
--Patient access				42 CFR 37.80

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
...Maternal and child health–Confidentiality requirements				42 CFR 51a.6
...Venereal disease control–Confidentiality requirements				42 CFR 51b.404
...Community health services–Confidentiality				42 CFR 51c.110
...Black lung clinics–Confidentiality requirements				42 CFR 55a.104
...Family planning services–Confidentiality				42 CFR 59.11
...CMS–State org and admin–Release of info				42 CFR 431.306
---Ownership of medical records				45 CFR 164.500
---Accounting for disclosures				
---Specific redisclosure prohibitions				42 CFR 2.32
...HHS–Privacy of individually identifiable health info				45 CFR 164.500
---Redisclosure statement required				42 CFR 2.32
---Disposition/destruction of records				
Consent/Authorizations				
---Patient consent requirements				42 CFR 37.80
...Maternal and child health–Confidentiality requirements				42 CFR 51a.6
...Venereal disease control–Confidentiality requirements				42 CFR 51b.404
...Community health services–Confidentiality				42 CFR 51c.110
...Black lung clinics–Confidentiality requirements				42 CFR 55a.104
...Family planning services–Confidentiality				42 CFR 59.11
---Records retention requirements				42 CFR 431.306
---Records retention requirements				42 CFR 431.306
...HHS–Uses and disclosures requiring an opportunity for the individual to agree or to object				45 CFR 164.510
---Patient authorization requirements				42 CFR 37.80
...Maternal and child health–Confidentiality requirements				42 CFR 51a.6
...Venereal disease control–Confidentiality requirements				42 CFR 51b.404
...Community health services–Confidentiality				42 CFR 51c.110
...Black lung clinics–Confidentiality requirements				42 CFR 55a.104
...Family planning services–Confidentiality				42 CFR 59.11
---Records retention requirements				42 CFR 431.306
---Disclosure for emergency situations				42 CFR 37.80
...Maternal and child health–Confidentiality requirements				42 CFR 51a.6
...Venereal disease control–Confidentiality requirements				42 CFR 51b.404
...Community health services–Confidentiality				42 CFR 51c.110
...Black lung clinics–Confidentiality requirements				42 CFR 55a.104
...Family planning services–Confidentiality				42 CFR 59.11
---Records retention requirements				42 CFR 431.306
...HHS–Uses and disclosures--authorization or opportunity to agree or object not required				45 CFR 164.512
Minors				
---Age of majority				
---Children's records				20 U.S.C.S. § 1232(g)
...FERPA				34 C.F.R. Part 99
...CMS–State plan requirements–privacy protection				42 CFR 457.1110
...HHS–Uses and disclosures of protected health information: general rules				45 CFR 164.502

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10.7 Appendix 10.7 – Comparative Analytical Matrix

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
...Children--Medical and mental health care consent	11 P.S. § 2513			
...School health--Confidentiality, transference and removal of health records	24 P.S. § 14-1409			
...Disease prevention and control law	35 P.S. § 521.1			
...Minors' consent--Release of medical records	35 P.S. § 10101.2			
...Mental health--Record of persons admitted or committed	50 P.S. § 4602			
...Mental health--Confidentiality of records	50 P.S. § 7111			
	20 Pa.C.S. Chap. 54			
...Decedents, estates--Authority of health care agent	20 Pa.C.S. § 5456(d)			
...Decedents, estates--Authority of mental health care agent	20 Pa.C.S. § 5836(e)			
...Child Protective Services--Confidentiality of report	23 Pa.C.S. §§ 6339; 6340			
...Children--Medical and mental health care consent	11 P.S. § 2513			
...Minors' consent--Release of medical records	35 P.S. § 10101.2			
...Mental health--Record of persons admitted or committed	50 P.S. § 4602(d)			
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Public assistance transportation--Record retention	55 Pa.Code § 2070.24-2070.25			
...Child Protective Services--Persons to whom child abuse information shall be made available	55 Pa.Code §§ 3490.91-3490.95			
...Child residential/day treatment--records	55 Pa.Code §3800.243-3800.245			
...Mental health/retardation--records	55 Pa.Code § 4226.35-4226.36; 4226.94			
...Confidentiality of mental health records	55 Pa.Code § 5100.31 – 5100.39			
...Psychiatric outpatient clinics	55 Pa.Code § 5200.47 (citing 55 Pa.Code § 5100.31-5100.39)			
...Mental health--Partial hospitalization	55 Pa.Code § 5210.56 (citing 55 Pa.Code § 5100.31-5100.39)			
...Mental health intensive care--Notice of confidentiality	55 Pa.Code §5221.52 (citing 55 Pa.Code § 5100.31-5100.39)			
...Community residential rehabilitation--records	55 Pa.Code § 5310.52; 5310.62(5)			
...Community homes--records	55 Pa.Code § 6400.214-6400.217			
...Family living homes--record retention	55 Pa.Code § 6500.184-6500.186			
...Family educational and privacy rights				20 U.S.C.S. § 1232(g)
				34 C.F.R. Part 99
...Uses/disclosures of protected health info--Personal representative				45 C.F.R. §164.502(g)(3)
...Clinical labs--Report of findings	28 Pa. Code § 5.47			
...Funeral directors--Suspected child abuse--reporting	49 Pa. Code § 13.302			
...State Bd Optometry--Suspected child abuse	49 Pa. Code § 23.111			
...Speech examiners--Suspected child abuse	49 Pa. Code § 45.402			
...Child residential/day treatment--content of records	55 Pa. Code § 3800.243			
...Mental health--Early intervention--Confidentiality	55 Pa. Code § 4226.35			
...Confidentiality of mental health records	55 Pa. Code § 5100.31			
...Psychiatric outpatient clinics--applicable regs	55 Pa. Code § 5200.47			
...Partial hospitalization--applicable regs	55 Pa. Code § 5210.56			
...Mental health intensive care--Notice of confidentiality	55 Pa. Code § 5221.52			
...Community residential rehabilitation--records	55 Pa. Code § 5310.52			
...Community homes--record location	55 Pa. Code § 6400.214			
...Family living homes--record retention	55 Pa. Code § 6500.184			
...Emancipated minors				
...Age consent requirements - mental health				
...Age Consent requirements - other conditions				

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10.7 Appendix 10.7 – Comparative Analytical Matrix

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
Patient Proxies				
---Personal Representatives/Executors				
---Guardians				45 CFR 164.502
	20 Pa.C.S. Chap. 54			
...Decedents, estates--Authority of health care agent	20 Pa.C.S. § 5456			
...Decedents, estates--Authority of mental health care agent	20 Pa.C.S. § 5836			
...Disease prevention and control law	35 P.S. § 521.1			
...Clinical labs--Report of findings	28 Pa. Code § 5.47			
---Health Care Power of Attorney	20 Pa. CS 5451 et seq			
---Health Care Power of Attorney - mental health				
Health Condition/Situation Specific Provisions				
Maternal-Child Health Information				
...Confidential material	28 Pa.Code § 29.1-29.3			
---Genetic Information				45 CFR 164.506
...DNA data--Prohibition on disclosure	44 Pa.C.S. § 2331			
...Right-to-know--Exception for public records	65 P.S. § 67.708			
..Clinical laboratories--Report of findings	28 Pa. Code § 5.47			
---HIV/AIDS Information				45 CFR 164.500
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Confidentiality of HIV-related information	35 P.S. § 7607			
...Confidentiality of HIV-related information	35 P.S. § 7603, 7607-08			
..Clinical laboratories--Report of findings	28 Pa. Code § 5.47			
---Sexually transmitted disease information				45 CFR 164.500
...Disease prevention and control law	35 P.S. § 521.1			
..Clinical laboratories--Report of findings	28 Pa. Code § 5.47			
---Hepatitis C Information				45 CFR 164.500
...Disease prevention and control law	35 P.S. § 521.1			
..Clinical laboratories--Report of findings	28 Pa. Code § 5.47			
---Adult mental health				45 CFR 164.502
				42 U.S.C.S. Part 2
...Decedents, estates--Authority of mental health care agent	20 Pa.C.S. § 5836			
...Decedents, estates--Authority of health care agent	20 Pa.C.S. § 5456(d)			
...Mental health--Record of persons admitted or committed	50 P.S. § 4602			
...Mental health--Report of psychological examination	50 P.S. § 4604			
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Speech language and hearing--Impaired professionals	63 P.S. § 1717.1			
..Speech language and hearing--Unprofessional conduct	49 Pa. Code § 45.103			
...Confidentiality of mental health records	55 Pa. Code § 5100.31			
---Children's mental health				45 CFR 164.502
				42 U.S.C.S. Part 2
...Decedents, estates--Authority of mental health care agent	20 Pa.C.S. § 5836			
...Mental health--Record of persons admitted or committed	50 P.S. § 4602			
...Mental Health and Mental Retardation Act--Penalties (don't see a (b))	50 P.S. § 4605(b)			

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10.7 Appendix 10.7 – Comparative Analytical Matrix

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
...Mental health--Confidentiality of records	50 P.S. § 7111			
..Speech language and hearing--Child abuse reporting--definitions	49 Pa. Code § 45.401			
...Confidentiality of mental health records	55 Pa. Code § 5100.31			
--Communicable disease information				42 C.F.R. part 70
				45 CFR 164.512
...Disease prevention and control law	35 P.S. § 521.1			
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Clinical labs--Report of findings	28 Pa. Code § 5.47			
...Communicable/noncommunicable diseases--Definitons	28 Pa. Code § 27.1			
--Alcohol addiction				42 C.F.R. Part 2
...HHS--Employee testimony/production of docs				42 CFR 2.1
...Substance abuse--gov/other employees				42 USCS § 290dd-2
...Governor's Council on Drug Alcohol Abuse--Client-related info	4 Pa. Code § 255.5			
..Speech language and hearing--Unprofessional conduct	49 Pa. Code § 45.103			
...Optometry--Corrective actions	63 P.S. § 244.7a			
...Speech-language and hearing--Impaired professionals	63 P.S. § 1717.1			
...Social workers/therapists--Impaired professionals	63 P.S. § 1915			
...Governor's Council--Drug Alcohol Abuse--Confidentiality	71 P.S. § 1690.108			
--Drug addiction				42 C.F.R. Part 2
...HHS--Employee testimony/production of docs				42 C.F.R. § 2.1-2.67
...HHS--Employee testimony/production of docs				42 CFR 2.1
...Substance abuse--gov/other employees				42 USCS § 290dd-2
...Governor's Council on Drug Alcohol Abuse--Research and evaluation	4 Pa.Code § 255.7			
...Social workers/therapists--Impaired professionals	63 P.S. § 1915			
...Governor's Council--Drug Alcohol Abuse--Confidentiality	71 P.S. § 1690.108			
...Governor's Council-Drug Alcohol Abuse--Disclosure of client-oriented info	4 Pa. Code § 255.5			
..Speech language and hearing--Unprofessional conduct	49 Pa. Code § 45.103			
--Reproductive rights	18 Pa.C.S. § 3214			
...Vital statistics--Records disclosure	35 P.S. § 450.801			
--Minor wards of the state	42 Pa.C.S. § 6307			45 CFR 164.502
...Juvenile matters--Treatment records	42 Pa.C.S. § 6352.1			
...Social workers/therapists--Child abuse reporting definitions	49 Pa. Code § 47.51			
...Child Protective Services--Confidentiality	23 Pa.C.S. § 6339			
...Child Protective Services--Release of info	23 Pa.C.S. § 6340			
...Juvenile matters--Investigation and report	42 Pa.C.S. § 6339(b)			
...Juvenile matters--Adjudication	42 Pa.C.S. § 6341(d)			
...Juvenile matters--Treatment records	42 Pa.C.S. § 6352.1			
...Abuse of family--Protection from abuse	23 P.S. § 6101 et seq.			
...Abuse of family--Disclosure of addresses	23 P.S. § 6112			
...Abuse of family--Child Protective Services	23 P.S. § 6301			
--Adult wards of the state	20 Pa.C.S. § 5836(e)			
...Adults and emancipated minors				45 C.F.R. § 164.502(g)(2)
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Mental health--Record of persons admitted or committed	50 P.S. § 4602, 4605(b)			

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10.7 Appendix 10.7 – Comparative Analytical Matrix

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
...Mental health records–Confidentiality	55 Pa. Code §§ 5100.31-5100.39			
--Reporting of abortions				
--Victims (domestic violence, sex assault, etc.)				
...Child Protective Services–Confidentiality of report	23 Pa.C.S. § 6339			
...Child Protective Services–Release of info	23 Pa.C.S. § 6340			
...Abuse of family–Protection from abuse	23 P.S. § 6101 et seq.			
...Abuse of family–Disclosure of addresses	23 P.S. § 6112			
...Abuse of family–Child Protective Services	23 P.S. § 6301			
...Juvenile matters–Investigation and report	42 Pa.C.S. § 6339(b)			
...Juvenile matters–Adjudication	42 Pa.C.S. § 6341(d)			
...Juvenile matters–Treatment records	42 Pa.C.S. § 6352.1			
...Disease prevention and control law	35 P.S. § 521.1			
...Older adult protective services–confidentiality of records	35 P.S. § 10225.306			
...Juvenile matters–Treatment records	42 Pa.C.S. § 6352.1			
...Communicable/noncommunicable diseases–Definitions	28 Pa. Code § 27.1			
...Funeral directors–Suspected child abuse	49 Pa. Code § 13.302			
...State Bd Optometry–Suspected child abuse	49 Pa. Code § 23.111			
..Speech language and hearing–Child abuse reporting–definitions	49 Pa. Code § 45.401			
--Futile Care Provisions				
--Other proxies				
Provider Specific Provisions				
--Pharmacy records				45 CFR 164.500
	49 Pa. Code § 27.19(c)			
--Health care practitioners				42 U.S.C.S. § 1396a(a)(7)
...Abuse of family–Reporting procedure	23 Pa.C.S. § 6313			
...CMS–State Org–Safeguarding info				42 CFR 431.300
...Suspected child abuse–Photographs, x-rays	23 Pa.C.S. § 6314			
...Uses and disclosure of protected health information				45 CFR 164.502
...Clinical labs–Report of findings	28 Pa. Code § 5.47			
...Workers' comp–Medical cost containment	34 Pa. Code Ch. 127			
..Speech language and hearing–Unprofessional conduct	49 Pa. Code § 45.103			
..Speech language and hearing–Child abuse reporting–definitions	49 Pa. Code § 45.401			
...Confidentiality of mental health records	55 Pa. Code § 5100.31			
...Emergency medical services–Dept duties	35 P.S. § 6925			
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Mental health–Confidentiality of records	50 P.S. § 7111			
...Social workers/therapists–license suspension/revocation	63 P.S. § 1911			
...Workers' comp–Medical services	77 P.S. § 531			
--Emergency services (ambulance/EMT)				45 CFR 164.500
...EMS–Dissemination of info	28 Pa.Code § 1001.42(a)(1)-(7)			
--Health professional licensing				HIPAA
				AMA Code of Ethics
--Health professional accreditation				
--Professional counselors				
--Utilization, peer & quality review	63 P. S. § 425.1 et seq.			
				42 USC Sections 11101 – 11152
Patient Safety Documents	40 P.S. § 1303.311			
				42 C.F.R. Part 3
Facility-Specific Provisions				
Facilities regulated by DPW	11 P.S. § 875-302(a)(10)			
...Family educational and privacy rights				20 U.S.C. § 1232g
...Suspected child abuse–Reporting procedure	23 Pa.C.S. § 6313			
				34 C.F.R. Part 99

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10.7 Appendix 10.7 – Comparative Analytical Matrix

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
...Suspected child abuse–photographs, x-rays	23 Pa.C.S. § 6314			
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Mental health--Record of persons admitted or committed	50 P.S. § 4602			
...Mental Health and Mental Retardation Act--Penalties (don't see a (b))	50 P.S. § 4605(b)			
...Adult services block grant--Confidentiality	55 Pa. Code § 2050.17			
...Public assistance transportation block grant--Records	55 Pa. Code § 2070.24-2070.25			
...Adult training facilities--Records	55 Pa. Code § 2380.174-2380.177			
...Vocational facilities--Records	55 Pa. Code § 2390.122-2390.127			
...Personal care homes--Resident records	55 Pa. Code § 2600.252-2600.254			
...Child residential/day treatment--Records	55 Pa. Code § 3800.243-3800.245			
...Early intervention services--Records	55 Pa. Code § 4226.35-4226.36, 4226.94			
...Mental health records	55 Pa. Code §§ 5100.31-5100.39			
...Psychiatric outpatient clinics	55 Pa. Code § 5200.47 (citing 55 Pa. Code § 5100.31-5100.39)			
...Partial hospitalization	55 Pa. Code § 5210.56 (citing 55 Pa. Code § 5100.31-5100.39)			
...Mental health intensive care mgmt	55 Pa. Code § 5221.52 (citing 55 Pa. Code § 5100.31-5100.39)			
...Community residential rehabilitation	55 Pa. Code § 5310.52, 5310.62(5)			
...Long-term structured residence	55 Pa. Code § 5320.26 (citing 55 Pa. Code § 5100.31-5100.39)			
...Community homes--mental retardation	55 Pa. Code § 6400.214-6400.217			
...Family living homes	55 Pa. Code § 6500.184-6500.186			
...Hospitals				42 CFR 416.47
...Hospitals–Medical record services				42 CFR 482.24(b)(3), 482.27
...Confidentiality of medical records	28 Pa.Code § 115.21-.34			
	28 Pa. Code § 51.3(k)			
...HHS–Individually identifiable health info–Applicability				45 CFR 164.500
...Critical Access Hospitals/ Rural Health Networks				
...School based clinics				20 U.S.C. § 1232g
..Education of children with disabilities				34 C.F.R. § 300
...Imaging labs and centers				45 CFR 164.500
...Testing and clinical labs				42 C.F.R. § 493.557 and 493.1231.
...Clinical labs–confidentiality	28 Pa.Code § 5.53			
...Clinical labs–biological products				42 U.S.C. § 263
...Assisted living facilities, nursing homes, and skilled nursing facilities	Nursing homes are same thing as skilled nursing facilities– both regulated under Health Care Facilities Act (regs in Title 28, Chapter 211) as well as certain Medicaid provisions under the Public Welfare Code in Title 62. Assisted Living Facilities governed by Act 56 of 2007 but regulations are not yet final. Personal Care Homes somtimes call themselves Assisted Living Facilities– regulated under Public Welfare regs (Title 55, Chapter 2600)	yes, sometimes	yes, sometimes	
Schools				20 U.S.C.S. § 1232(g)
				34 C.F.R. Part 99
...CMS–Long-term care facilities–Resident rights				42 CFR 483.10
...Disease prevention and control law	35 P.S. § 521.1			
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Mental health--Record of persons admitted or committed	50 P.S. § 4602			
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Workers' comp–Surgical and medical svcs	77 P.S. § 531			
...Older adult daily living centers	6 Pa. Code § 11.1			
...AAA placement activities	6 Pa. Code § 21.55			
...Older adult daily living centers--Release of info	6 Pa Code 11.198			
...AAA–Recordkeeping	6 Pa Code 21.60			
...Clinical labs–Report of findings	28 Pa. Code § 5.47			
...Workers' comp–Medical cost containment	34 Pa. Code Ch. 127			

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10.7 Appendix 10.7 – Comparative Analytical Matrix

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
...Adult services block grant--Confidentiality	55 Pa. Code § 2050.17			
...Adult training facilities--Record location	55 Pa. Code § 2380.174			
...Vocational facilities--Record location	55 Pa. Code § 2390.122			
...Personal care--Confidentiality	55 Pa.Code § 2600.17			
...Child residential/day treatment--Content of records	55 Pa. Code § 3800.243			
...Early intervention services--Confidentiality	55 Pa. Code § 4226.35			
...Confidentiality of mental health records	55 Pa. Code § 5100.31			
...Partial hospitalization--other applicable regs	55 Pa. Code § 5210.56			
...Psychiatric outpatient clinics--other applicable regs	55 Pa. Code § 5200.47			
...Mental health intensive care--Notice of confidentiality	55 Pa. Code § 5221.52			
	55 Pa. Code § 5310.52			
...Community residential rehabilitation--Confidentiality	55 Pa. Code § 5320.26			
...Community homes for mental retardation--Record location	55 Pa. Code § 6400.214			
...Family living homes--Record retention	55 Pa. Code § 6500.184			
--Drug & alcohol treatment facilities	28 Pa. Code 709.28			42 C.F.R. part 2
--Rehabilitation facilities				45 CFR 164.500
--Home health agencies	28 Pa. Code 601.36(c)			42 CFR 484.48
...Home health agencies--Clinical records	28 Pa.Code § 601.36			
...HHS--Individually identifiable info--Applicability				45 CFR 164.500
--Hospice				42 CFR 418.74
--Ambulatory surgery centers	28 Pa. Code § 563.9.			
Pharmacies	49 Pa. Code § 27.19(c).			
Payers/Insurance Company Provisions				
...CMS SCHIP--Privacy protections				42 CFR 457.1110
..Mandatory inclusion-child medical support	23 Pa.C.S. § 4326			
...Insurance--Privacy of health info	31 Pa. Code § 146b.1	no		
...Medical assistance--Provider responsibilities	55 Pa. Code § 1101.51			
...HMOs--Policy	55 Pa. Code § 1229.1			
...Public welfare--Fraud--Data matching	62 P.S. § 1413			
--Health insurance related provisions				15 USCS § 6801
...HHS--Individually identifiable info--Applicability				45 CFR 164.500
--HMO provisions	40 P.S. § 991.2131			
...HHS--Individually identifiable info--Applicability				45 CFR 164.500
--Medicaid/Medicare related provisions				45 CFR 164.500
--State employees' plan				
Employer Specific Provisions				
--EHR				42 U.S.C.S. § 12112(4)(c);
...FMLA--recordkeeping requirements				29 CFR 825.500
...EEOC--ADA--Medical exams/inquiries				29 CFR 1630.14
	Management Directive 505.18(7)(f)(o)			
...Disease prevention and control law	35 P.S. § 521.1			
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Communicable/noncommunicable diseases--Definitions	28 Pa. Code § 27.1			
...Child day care centers--records	55 Pa. Code § 3270.192-.193			
...Group child day care homes--records	55 Pa. Code § 3280.192-.193			
...Family child day care homes--records	55 Pa. Code § 3290.192-.193			
--Provisions related to employers				45 CFR 164.500
..HHS-Protection of electronic protected health info				45 CFR 164.308
--Non-employee records				7 U.S.C.S. § 2020(e)(8)

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10.7 Appendix 10.7 – Comparative Analytical Matrix

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
...Family educational and privacy rights				20 U.S.C.S. § 1232(g)
..Block grants–needy families–use and disclosure of info				42 U.S.C.S. § 602(a)(1)(A)(iv)
...Grants to states–medical assistance–use and disclosure of info				42 U.S.C.S. § 1396a(a)(7)
...Food stamps–terms and conditions				7 CFR 272.1
..FERPA				34 C.F.R. Part 99
...Vocational rehab services–protection of info				34 CFR 361.38
...CMS–Medical assistance–safeguarding info				42 CFR 431.300
...CMS-SCHIP–Privacy protections				42 CFR 457.1110
...Quality improvemetnt organization review info				42 C.F.R. Part 480
...CMS–Long-term care facilities–patient rights				42 CFR 483.10
...Family assistance–safeguarding info				45 CFR 205.50
...Grants to state/community aging programs–disclosure of info				45 CFR 1321.51
...Adoption–medical history info	23 Pa.C.S. § 2909			
...Disease prevention and control–Control measures	35 P.S. § 521.5			
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Older adult protective services–confidentiality of records	35 P.S. § 10225.306			
...Unemployment comp.–records of/reports by employers	43 P.S. § 765			
...Mental health–Record of persons admitted or committed	50 P.S. § 4602			
...Mental health–Confidentiality of records	50 P.S. § 7111			
...Public assistance–Protection of info	62 P.S. § 404			
...Older adult daily living centers–General	6 Pa. Code § 11.1			
...Protective services for older adults–Confidentiality	6 Pa. Code § 15.101			
...AAA responsibilities–Recordkeeping	6 PA Code 21.60			
...AAA placement activities	6 Pa. Code § 21.55			
...Communicable/noncommunicable diseases–Definitons	28 Pa. Code § 27.1			
...Unemployment comp.–official records–auth. Req.	34 Pa. Code § 61.21			
...Mental health procedures–scope and policy	55 Pa. Code § 5100.31			
...Safeguarding info	55 Pa.Code Chapter 105			
...Preemployment screenings				42. U.S.C.S. § 12112
...Employee Assistance Programs				
Public Health Reporting				
Newborn Screening				
...Newborn screening/follow-up	35 P.S. § 623			
...Infanct hearing (IHEARR)–Confidentiality	11 P.S. § 876-7			
...Data collection				7 CFR 246.26
...HHS–Empioyee testimony/production of docs				42 CFR 2.1
...Substance abuse–gov/other employees				42 USCS § 290dd-2
...Vital records (birth/death certificates)				45 CFR 164.512
...Disease prevention and control law	35 P.S. § 521.1			
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Mental health–Confidentiality of records	50 P.S. § 7111			
...Workers' comp–Surgical and medical svcs	77 P.S. § 531			
...Governor's Council-Drug Alcohol Abuse–Disclosure of client-oriented info	4 Pa. Code § 255.5			
...Clinical labs–Report of findings	28 Pa. Code § 5.47			
...Confidentiality of mental health records	55 Pa. Code § 5100.31			
...Vital records (birth/death certificates)				45 CFR 164.512
...Vital statistics–records disclosure	35 P.S. § 450.601-450.606			
...Vital statistics–penalties/misdemeanors	35 P.S. § 450.902			
...State Department of Health reporting (reporting certain conditions to state)				45 CFR 164.512

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Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
...Family educational and privacy rights				20 U.S.C.S. § 1232(g)
..Block grants--needy families--use and disclosure of info				42 U.S.C.S. § 602(a)(1)(A)(iv)
...Grants to states--medical assistance--use and disclosure of info				42 U.S.C.S. § 1396a(a)(7)
...Food stamps--terms and conditions				7 CFR 272.1
...FERPA				34 C.F.R. Part 99
...Vocational rehab services--protection of info				34 CFR 361.38
...CMS--Medical assistance--safeguarding info				42 CFR 431.300
...CMS-SCHIP--Privacy protections				42 CFR 457.1110
...Quality improvement organization review info				42 C.F.R. Part 480
...CMS--Long-term care facilities--patient rights				42 CFR 483.10
...Family assistance--safeguarding info				45 CFR 205.50
...Grants to state/community aging programs--disclosure of info				45 CFR 1321.51
...Adoption--medical history info	23 Pa.C.S. § 2909			
...Disease prevention and control--Control measures	35 P.S. § 521.5			
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Older adult protective services--confidentiality of records	35 P.S. § 10225.306			
...Unemployment comp.--records of/reports by employers	43 P.S. § 766			
...Mental health--Record of persons admitted or committed	50 P.S. § 4602			
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Public assistance--Protection of info	62 P.S. § 404			
...Older adult daily living centers--General	6 Pa. Code § 11.1			
...Protective services for older adults--Confidentiality	6 Pa. Code § 15.101			
...AAA responsibilities--Recordkeeping	6 PA Code 21.60			
...AAA placement activities	6 Pa. Code § 21.55			
...Communicable/noncommunicable diseases--Definitons	28 Pa. Code § 27.1			
...Unemployment comp.--official records--auth. Req.	34 Pa. Code § 61.21			
...Mental health procedures--scope and policy	55 Pa. Code § 5100.31			
...Safeguarding Info	55 Pa.Code Chapter 105			
---Preemployment screenings				42. U.S.C.S. § 12112
---Employee Assistance Programs				
Public Health Reporting				
Newborn Screening				
...Newborn screening/follow-up	35 P.S. § 623			
...Infanct hearing (IHEARR)--Confidentiality	11 P.S. § 876-7			
---Data collection				7 CFR 246.26
...HHS--Employee testimony/production of docs				42 CFR 2.1
...Substance abuse--govt/other employees				42 USCS § 290dd-2
---Vital records (birth/death certificates)				45 CFR 164.512
...Disease prevention and control law	35 P.S. § 521.1			
...Confidentiality of HIV-related information	35 Pa.C.S. § 7601			
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Workers' comp--Surgical and medical svcs	77 P.S. § 531			
...Governor's Council-Drug Alcohol Abuse--Disclosure of client-oriented info	4 Pa. Code § 255.5			
...Clinical labs--Report of findings	28 Pa. Code § 5.47			
...Confidentiality of mental health records	55 Pa. Code § 5100.31			
---Vital records (birth/death certificates)				45 CFR 164.512
...Vital statistics--records disclosure	35 P.S. § 450.601-450.606			
...Vital statistics--penalties/misdemeanors	35 P.S. § 450.902			
---State Department of Health reporting (reporting certain conditions to state)				45 CFR 164.512

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
--Reports to other state agencies				45 CFR 164.512
--Immunization reporting				45 CFR 164.512
--Registries				45 CFR 164.512
--Information sharing in public emergencies				
State Facilities/Medical Records				
...Privacy of individually identifiable health info--Uses and disclosures authorization required				45 CFR 164.508
...Disease prevention and control--Control measures	35 P.S. § 521.5			
...Mental health--Record of persons admitted or committed	50 P.S. § 4602			
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Communicable/noncommunicable diseases--Definitons	28 Pa. Code § 27.1			
...Confidentiality of mental health records	55 Pa. Code § 5100.31			
...Juvenile matters--Inspection of court files/records	42 Pa.C.S. § 6307			
...Grants to states--medical assistance--use and disclosure of info				42 U.S.C.S. § 1396a(a)(7)
...Public assistance--Protection of info	62 P.S. § 404			
...Privacy of individually identifiable health info--Uses and disclosures authorization required				45 C.F.R. § 164.508(a)(2)
...Juvenile matters--Inspection of court files/records	42 Pa.C.S. § 6307			
...CMS--State orgs--safeguarding info				42 C.F.R. § 431.300-431.307
...Mental Health and Mental Retardation Act--Penalties (don't see a (b))	50 P.S. § 4605(b)			
...CMS--State Org--Safeguarding Info				42 C.F.R. Part 480
...Child Protective Services--Confidentiality	55 Pa. Code §§ 3490.91-3490.95			
...Confidentiality of mental health records	55 Pa. Code §§ 5100.31-5100.39			
...Long-term care nursing--Clinical records	28 Pa. Code § 211.5			
--Other state facilities				
--Public health clinics				45 CFR 164.500
--Correctional facilities (adult)				45 CFR 164.500
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Mental health--Person charged w/ a crime	55 Pa. Code § 5100.92			
--Correctional facilities (minors)				45 CFR 164.500
--State hospitals				
--State Freedom of Information Act				
Records in the possession of DPW	23 Pa.C.S. § 2910			
...Food stamp program--Info safeguards				7 U.S.C. § 2020(e)(8)
...Adoption--Medical history info	23 Pa.C.S. § 2909			
...				20 U.S.C. § 1232(g)
...Adoption--Penalty for unauth disclosure	23 Pa.C.S. § 2910			
..Block grants--needy families--use and disclosure of info				42 U.S.C. § 602(a)(1)(A)(iv)
...Mental Health and Mental Retardation Act--Penalties (don't see a (b))	50 P.S. § 4605(b)			
...Grants to states--medical assistance--use and disclosure of info				42 U.S.C. § 1396a(a)(7)
...Mental health--Record of persons admitted or committed	50 P.S. § 4602			
				7 C.F.R. § 272.1(c)
...Mental health--Confidentiality of records	50 P.S. § 7111			
...FERPA				34 C.F.R. Part 99
...Public assistance--Protection of info	62 P.S. § 404			
...CMS--State Org--Safeguarding Info				42 C.F.R. § 431.300-431.307
...Child Protective Services--Confidentiality	55 Pa.Code §§ 3490.91 – 3490.95			
...Quality				42 C.F.R. Part 480

Subject Matter	State Law	Patient Care?	Population Health?	Federal Law
...Confidentiality of mental health records	55 Pa.Code §§ 5100.31 – 5100.39			
				45 C.F.R. § 205.50
	55 Pa.Code Chapter 105			
Penalties/Remedies				
--Statutory right to sue for damages related to health information				
--Common law right to sue for damages related to health information				
--Criminal provisions - wrongful access				
--Administrative penalties for wrongful disclosure				45 CFR 164.500
Litigation Related Provisions				
	63 P. S. § 425.1 et seq.			
				42 USC Sections 11101 – 11152
--Medical record subpoenas				45 CFR 164.512
--Patient/provider privilege				
--Workers comp disclosures				
--Evidence in quasi-judicial hearings				42 U.S.C. § 1396a(a)(7);
...CMS--State Org--Safeguarding Info				42 CFR 431.300
HHS--Privacy of individually identifiable health info				45 CFR 164.500
...HHS--Administrative data standards--Statutory basis				45 CFR 160.101
...State/community aging programs--Confidentiality				45 CFR 1321.51
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Optometry--Board powers/duties	63 P.S. § 244.3			
...Social workers/therapists--Subpoenas	63 P.S. § 1919			
...Dept of Aging--Informal complaints	6 Pa. Code § 3.5			
...Confidentiality of mental health records	55 Pa. Code § 5100.31			
Law Enforcement				
--DUI test results				
--Abuse & neglect				45 CFR 164.500
--Other disclosures to law enforcement				45 CFR 164.510
...Funeral directors--Suspected child abuse	49 Pa. Code § 13.302			
...Speech examiners--Suspected child abuse	49 Pa. Code § 45.402			
...Optometry--Board powers/duties	63 P.S. § 244.3			
Research				
...FDA--Informed consent-human subjects				21 CFR 50.20
...HHS-Informed consent-human research				45 CFR 46.116
...HHS--Individually identifiable health info--Auth not required				45 CFR 164.512
...Disease prevention and control--Control measures	35 P.S. § 521.5			
...Mental health--Confidentiality of records	50 P.S. § 7111			
...Clinical labs--Report of findings	28 Pa. Code § 5.47			
...Public welfare--Safeguarding info	55 Pa. Code § 105.1			
...Mental health procedures--Patient rights	55 Pa. Code § 5100.54, Art. VI, § 2(d) (citing federal regs. generally)			
--Disclosures for research				21 C.F.R. Parts 50 and 56
...HHS--Individually identifiable health info--Auth not required				45 CFR 164.512
...Protection of human subjects				45 C.F.R. Part 46

10.8 Appendix – Data Usage and Reciprocal Sharing Agreement (DURSA)

Health Information Exchange

DATA USER AGREEMENT for HIPAA-Covered Entities Draft

The following terms and conditions (the "Agreement") are made and entered into by _____ (the "Data User"), located at _____ and PHIX ("PHIX" or "Network"), located at _____, as of the date of affixation of the final PHIX-required signature.

Witnesseth:

WHEREAS, Network has established a secure, electronic patient data exchange system to allow authorized users to electronically access patient information from participating health care providers ("Exchange"); and

WHEREAS, Data User, which may be a hospital, physician, physician practice, other health care facility or other health care provider or authorized participant in the healthcare system, desires to participate in the Exchange in order to access patient information for the continuing care and treatment of its patients, and payment for its services; and

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants and agreements set forth below, the parties agree as follows:

1. Definitions.

"Documentation" means the user documentation, manuals, and user guides, whether in paper, electronic, or other form, furnished to Data User by Network for use with the Exchange.

"Data" means any data or information accessible via the Exchange by or on behalf of Data User or its registered users, including, without limitation, personally identify information and protected health information.

2. Data User License and Restrictions. Subject to the terms and conditions of this Agreement and during the term of this Agreement, the Data User is granted a limited license to remotely access and use the Exchange and Documentation for the sole purpose of accessing and viewing Data in the Exchange as authorized by Network. Any access to or use of the Exchange not expressly permitted in this Agreement is prohibited. Except as expressly permitted in this Agreement, Data User shall not, and shall not allow or authorize any third party

to: (i) allow use of or access to the Exchange by any third-party; (ii) alter, enhance or otherwise modify or create derivative works of the Exchange, or reverse engineer, disassemble, or decompile the Exchange or any of its components; or (iii) sublicense, transfer, or assign its rights to access and use the Exchange, in whole or in part, to a third party. Data User in no event shall access, transfer, use, or disclose Data in any manner or for any purpose that is prohibited by any applicable state or federal law, rule, or regulation. Except as expressly set forth in this Agreement, Data User will not obtain any rights in the Exchange, Documentation, any of the technology used to create the Exchange, including electronic formats and tools that Network uses in converting the Data into the Exchange, or in all related software, hardware, documentation, and methodologies used by Network to develop, maintain, and operate the Exchange and deliver services to Data User.

3. Data User Responsibilities.

3.1 Data User shall be responsible for ensuring the security and confidentiality of the password protected account within the Exchange to which Data User is granted access in order to access and use the Exchange ("Data User Account"), including, without limitation, all user IDs and passwords assigned to that account. Data User shall not disclose its Data User Account to any third party, and Data User hereby is expressly prohibited from sharing its Data User Account with any third party.

3.2 Data User acknowledges and agrees that the Exchange: (i) is accessed over the Internet; (ii) relies, in part, on the existence and proper operation of equipment and software that is outside of the control of Network, Access Provider, and/or Host; and (iii) relies on access to information from, and the provision of information controlled and owned by, third-parties and, as a result, access to the Data by Data User may be prevented by events or actions outside of Network's, Access Provider's, and/or Host's control. Network, Access Provider, and Host have made and hereby make no guarantee or warranty to Data User as to the availability or accessibility of the Exchange or Data.

4. Data. User acknowledges that the information provided through, drawn from, or obtained from the Exchange which Data User relies upon in making treatment decisions about each patient in fact corresponds to that patient. Data User agrees and understands that the Data accessed through Exchange may not include a patient's entire record of treatment in the region. Data User shall establish and implement appropriate policies and procedures for purposes of preventing unauthorized access to and disclosure of Data. Data User shall protect the confidentiality of all Data in accordance with applicable laws and the terms and conditions of this Agreement.

5. HIPAA.

5.1 Data User represents and warrants that: (i) it shall access and use the Exchange solely in its capacity as a "covered entity," or as an employee of a covered entity as that term is defined in 45 C.F.R. § 160.103; and (ii) each such access and use by Data User shall be final

solely for purposes of treatment, payment, and those health care operations specified in 45 C.F.R. § 164.506(c), or pursuant to a valid patient authorization or court order when required under 45 C.F.R. § 164.508, 45 C.F.R. § 2.1, et seq., and/or state law, or as otherwise permitted by federal or state law.

5.2 Data User shall implement and maintain administrative, physical, and technical safeguards that reasonably and appropriately protect the security and integrity of Data on Data User's computer network, and the confidentiality of all Data displayed, transmitted, or accessed at or from Data User's facility using the Exchange. Data User shall report to the relevant Data Provider any use or disclosure of Data created at that Data Provider of which Data User becomes aware that is not permitted or required by this Agreement or by law.

5.3 The Exchange, per Section 13408 of the American Recovery and Reinvestment Act of 2009, P.L. 111-5 (ARRA), must be treated as the Business Associate of the Data User. Relevant Business Associate provisions are attached as Appendix #1, and are hereby incorporated into this Agreement.

6. Terms and Termination. This Agreement shall commence on the Effective Date and shall continue in effect until terminated as provided herein. Either party may terminate this Agreement immediately by providing the other party with written notice of such termination. Upon termination, all licenses granted to Data User relating to access to or use of the Exchange or the accompanying software tools and documentation will cease.

7. Disclaimers. Network provides the Exchange "as is" and without any warranty of any kind to Data User, whether express, implied, or statutory. Network does not warrant that the performance or delivery of the Exchange will be uninterrupted or error-free. Network hereby disclaims all implied and express warranties, conditions, and other terms, whether statutory, arising from course of dealing, or otherwise, including without limitation terms as to quality, merchantability, fitness for a particular purpose, and non- infringement. Network shall not be liable to Data User for any consequential, incidental, indirect, punitive, or special damages suffered by Data User or any other third party, however caused and regardless of legal theory or foreseeability, including, without limitation, lost profits, business interruptions, or other economic loss, directly or indirectly arising out of this Agreement. Network shall not be liable for any damages arising out of or related to the acts or omissions of Data User in accessing or using the Exchange or in using or disclosing any Data contained therein.

8. Indemnification. Data User will indemnify and hold Network and its employees, agents, subcontractors, and licensors harmless from and against any and all liability (including reasonable attorney's fees), injury, or damages that arise from or are related to: (i) Data User's use of the Exchange or data accessed through the Exchange; or (ii) Data User's breach of this Agreement, including, without limitation, Data User's breach of any obligation, representation, or warranty set forth herein. Network will indemnify and hold Data User harmless from and against any and all liability (including reasonable attorney's fees), injury, or damages that arise from or are related to any and all claims involving intellectual property issues in regards to the Exchange and Documentation.

9. Miscellaneous. This Agreement sets forth the entire agreement between the parties and supersedes any and all prior agreements or representations, written or oral, of the parties with respect to the subject matter of this Agreement. This Agreement may not be modified, altered, or amended except by a written instrument duly executed by both parties. No failure or delay by either party in exercising any right hereunder will operate as a waiver thereof. Data User shall not assign this Agreement or any of the rights or obligations contained herein. This Agreement shall be binding on the parties, their successors and permitted assigns. If any provision of this Agreement is found invalid or unenforceable by a court of competent jurisdiction, the remaining portions shall remain in full force and effect. All notices required under this Agreement shall be: (i) in writing; and (ii) deemed to have been duly made and received when (a) personally served, (b) delivered by commercially established courier service, or via the Exchange messaging system by and to the individuals below authorized, or (c) ten (10) days after deposit in the mail via certified mail, return receipt requested, to the addresses specified in the first paragraph of this Agreement or to such other address as the parties shall designate in writing from time to time.

Messages in the Exchange may be sent to the following representatives of each party:

[*Additional terms will be dependent upon the business form of the ultimate PHIX governance entity*.]

[*This space is for required signatures, which will be dependent upon the business form of the Data User entity and the nature of the ultimate PHIX governance entity.*]

10.9 Appendix – Business Associate Agreement Draft

Health Insurance Portability and Accountability Act (HIPAA) Compliance

The Data User (“Covered Entity”) and Exchange (“Business Associate”) agree as follows:

1. **Definitions.**
   a. “Business Associate” shall have the meaning given to such term under the Privacy and Security Rules, including but not limited to, 45 C.F.R. §160.103.
   b. “Covered Entity” shall have the meaning given to such term under the Privacy and Security Rules, including, but not limited to, 45 C.F.R. §160.103.
   c. “HIPAA” shall mean the Health Insurance Portability and Accountability Act of 1996, Public Law 104-191.
   d. “Privacy Rule” shall mean the standards for privacy of individually identifiable health information in 45 C.F.R. Parts 160 and 164.
   e. “Protected Health Information” or “PHI” means any information, transmitted or recorded in any form or medium; (i) that relates to the past, present or future physical or mental condition of an individual; the provision of health care to an individual; or the past, present or future payment for the provision of health care to an individual, and (ii) that identifies the individual or with respect to which there is a reasonable basis to believe the information can be used to identify the individual, and shall have the meaning given to such term under HIPAA and the HIPAA Regulations in 45 C.F.R. Parts 160, 162 and 164, including, but not limited to 45 C.F.R. §164.501.
   f. “Security Rule” shall mean the security standards in 45 C.F.R. Parts 160, 162 and 164.
   g. Terms used, but not otherwise defined, in this Agreement shall have the same meaning as those terms in 45 C.F.R. Parts 160, 162 and 164.

2. **Stated Purposes For Which Business Associate May Use Or Disclose PHI.** The Parties hereby agree that Business Associate shall be permitted to use and/or disclose PHI provided by or obtained on behalf of Covered Entity for the following stated purposes, except as otherwise stated in this Agreement:

   Any purpose which in its nature and/or execution comports with 45 C.F.R. 164 502(a)(1).

   Proper management and administration of the Business Associate.

   To carry out the legal responsibilities of the Business Associate.

To provide data aggregation services relating to the health care operations of the Covered Entity.

3. BUSINESS ASSOCIATE OBLIGATIONS:

a) Limits On Use And Further Disclosure Established By Agreement And Law. Business Associate hereby agrees that the PHI provided by, or created or obtained on behalf of Covered Entity shall not be further used or disclosed other than as permitted or required by this Agreement or as required by law.

b) Appropriate Safeguards. The Business Associate shall establish and maintain appropriate safeguards to prevent any use or disclosure of PHI other than as provided for by this Agreement. Appropriate safeguards shall include implementing administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic PHI that is created, received, maintained, or transmitted on behalf of the Covered Entity.

c) Reports Of Improper Use Or Disclosure. Business Associate hereby agrees that it shall report to _____at _____**,** within a reasonable amount of time its discovery any use or disclosure of PHI not provided for or allowed by this Agreement.

d) **Reports Of Security Incidents and Breach.** A Business Associate, following the discovery of a Breach of Unsecured Protected Health Information, shall respond in accordance with Section 13407 of ARRA.

Business Associate shall report to _____at _____**,** in a timely fashion ***any*** security incident of which it becomes aware. Business Associate will comply with all applicable federal and state breach notification requirements.

e) Subcontractors And Agents. Business Associate hereby agrees that any time PHI is provided or made available to any subcontractors or agents, Business Associate shall be subject to the same terms, conditions and restrictions on the use and disclosure of PHI as contained in this Agreement.

f) Right Of Access To PHI. Business Associate shall make available protected information in accordance with 45 C.F.R. §164.524.

g) Amendment And Incorporation Of Amendments. Business Associate shall make available protected health information for amendment and incorporate any amendments to protected health information in accordance with §164.526.

h) Provide Accounting Of Disclosures. Business Associate agrees to keep and make available information to provide an accounting of disclosures in accordance with 45 C.F.R. §164.528.

i) Access To Books And Records. Business Associate hereby agrees to make its internal practices, books, and records relating to the use or disclosure of PHI received from, or created or received by Business Associate on behalf of the Covered Entity, available to the Secretary of Health and Human Services for purposes of determining compliance with the HIPAA Privacy Regulations.

j) Return Or Destruction Of PHI. At termination of this Agreement, Business Associate hereby agrees to return or destroy all PHI provided by or obtained on behalf of Covered Entity. Business Associate agrees not to retain any copies of the PHI after termination of this Agreement. If return or destruction of the PHI is not feasible, Business Associate agrees to extend the protections of this Agreement to limit any further use or disclosure until such time as the PHI may be returned or destroyed. If Business Associate elects to destroy the PHI, it shall certify to Covered Entity that the PHI has been destroyed.

k) Termination by Covered Entity. Business Associate authorizes termination of this Agreement by the Covered Entity if the Covered Entity determines, in its sole discretion, that the Business Associate has violated a material term of this Agreement. Termination will end Covered Entity's access to the Exchange.

l) Failure to Perform Obligations. In the event Business Associate fails to perform its obligations under this Agreement, Covered Entity may immediately discontinue providing PHI to Business Associate.

4. OBLIGATIONS OF COVERED ENTITY:

a) Provision of Notice of Privacy Practices. Covered Entity shall provide Business Associate with the notice of privacy practices that the Covered Entity produces in accordance with applicable laws, as well as changes to such notice.

b) Permissions and Restrictions. Covered Entity, where it has discretion (e.g.; 45 C.F.R. §164.522), shall not permit any restriction on the use or disclosure of PHI by an individual.

c) Use and Disclosure According to Applicable Law: Covered Entity shall use the Exchange, and the information and data acquired from and through the Exchange, only in accordance with law and in its role as a Covered Entity. Failure to do so shall allow Business Associate to terminate this Agreement.