Metropolitan Portland Health Information Exchange *Mobilization Plan*

Report to the Oregon Business Council

Data Exchange Leadership Group

May 14, 2007

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Andrew Davidson
Oregon Association of Hospital and Health Systems

Janice Forrester, PhD
The Regence Group

Dick Gibson, MD, PhD, MBA
Legacy Health Systems

Jody Pettit, MD
Oregon Health Care Quality Corporation

This report was commissioned and financed by the Oregon Business Council's Health Information Exchange Leadership Group. The Council gratefully acknowledges the contribution of the following individuals for their leadership in guiding the development of this report. These individuals spent countless hours debating the difficult challenges that implementing health information exchange presents.

We recognize that these individuals do not entirely agree with sections of the report. Their commitment to outlining the issues the community faces is greatly appreciated.

Andrew Davidson, Oregon Association of Hospital and Health Systems

Janice Forrester, PhD, The Regence Group

Dick Gibson, MD, PhD, MBA Providence Health Systems & Legacy Health Systems

Jody Pettit, MD, Oregon Health Care Quality Corporation & Office for Oregon Health Policy and Research

Production of this report was staffed by Oregon Health Care Quality Corporation. Staff and sub-contractors who contributed to various portions of this report include:

Nancy Clarke
Jody Pettit, MD
Tom Ricciardi, PhD
Dave Witter, Witter and Associates

For More Information please contact:

Oregon Business Council 1100 SW 6th Avenue, Suite 1508 Portland, OR 97204 Denise Honzel, honzelde@aol.com (503) 860 - 1278	OBC Oregon Business Council
Oregon Healthcare Quality Corporation 619 SW 11 Avenue, Suite 221 Portland, Oregon 97205 Nancy Clarke, nancy.clarke@q-corp.org (503) 241 - 3571	OREGON HEALTH CARE QUALITY CORPORATION A nonprofit partnership for quality improvement

Executive Summary

The members of the Oregon Business Council (OBC) Data Exchange Group have provided leadership and vision for a system that will **provide better value health care by exchanging health information among different providers and locations of care**. This document summarizes the key policy decisions that will guide mobilization of this health information exchange.

The principal users of the Metropolitan Portland HIE are physicians and their clinical staff. Physicians in Portland recognize the need for a city-wide results reporting system, and indicate they would use such a system for better quality care if it existed.

Initially the Metropolitan Portland HIE is confined to the tri-county area (Multnomah, Washington, and Clackamas counties). This area encompasses about 1.6 million lives, 4,000 physicians, four large health systems and several smaller systems. Services should be expanded to southwest Washington as soon as feasible.

A lightweight set of centralized data exchange services will allow the Metropolitan Portland HIE to foster access to patient information by authorized providers. Participants will maintain data inside their own organizations, which are available to authorized providers.

Health systems and physicians will share the following data to improve patient care:

- Patient registration and demographic data;
- Laboratory results;
- Imaging reports;
- Dictated summaries from hospitalizations;
- Dictated summaries from the emergency department (ED);
- Other readily available e-data.

The MPHIE is intended to operate with a lean, neutral organization that provides services to the various stakeholders across the community who are participating in making health information available. The staff will consist of a few key individuals who are responsible for executing the MPHIE vision and supporting its mission. Most other business and technical functions will be outsourced to service providers or contracted with regional experts.

There are vendors that can provide the technology and implementation services required, including those with working solutions in communities similar to Portland.

Vendor selection and system implementation can begin immediately, followed by testing and initial operations that will commence in eight months.

Emerging trends in consumer advocacy and standards for vendors have made it advisable and possible to increase patients' control of their information compared to the HIPAA standard. The system will allow patients to opt out of the HIE in consultation with their providers.

The Metropolitan Portland HIE costs are currently projected at about $3.4 million per year. The total additional cost to each large participant is estimated at $100K-$150K per health system and other data suppliers.

The MPHIE Results and Reports retrieval system is projected to result in significant community savings over time. Potential annual savings eventually (ten years) are estimated to be in excess of $20 million per year with over $12 million per year achievable within five years. The sources of the savings include:

- Avoided duplicative services
- Reductions in manual and paper processing
- Non-routine paper processing
- Physician productivity (efficient use of MD's time)
- Practice office productivity (efficient use of staff time)
- Avoided time-loss for employees/employers

Participating stakeholders will necessarily be the source of startup financing. It will be critical to secure programmatic and financial commitments from both health plans (insurers, Medicaid plans, self-insurers) and health systems.

Sustainability of the Results and Reports retrieval system can be supported by continuing commitments of funding by the major participants. A more satisfactory strategy is to become self-funding. The HIE will need to develop additional revenue sources and leverage its core services if it is to become self-sustaining. By year three, the exchange should be prepared to make the decision whether or not to expand scope and functionality in order to shift to sustainable funding.

The decision to keep the first step limited in scope in order to reduce financial exposure introduces several risks to cost, adoption, consumer concerns, and overall savings/benefits. The risks can mitigated with careful planning.

The Metropolitan Portland HIE must have a governance model that is based on multi-stakeholder, mission-driven leadership, and respected by the community. The legal entity will be a new organization incorporated as a 501(c)(3) non-profit.

The mobilization workbook that accompanies this report provides a comprehensive, turn-key plan to begin building an economical health information exchange for the Portland metropolitan area. This plan starts with a small step that can test the legal, political, technical and financial assumptions that underlie the drive to make medical information readily available while protecting privacy. The community is ready to be mobilized, and only awaits a green light from the leaders that can make it happen.

Metropolitan Portland Health Information Exchange

Mobilization Plan

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Health Information: the Problem, the Need, and the Vision

In Portland Oregon in the year 2007, a patient's health information is:

- Scattered across different hospitals, labs, physician offices, and many other care settings;
- Inaccessible to the patient and other providers who may need it in different care settings;
- Incomplete, fragmented, and difficult to aggregate.

As a result, information needed by physicians to care for their patients is often not available at the point and time of care when it is needed most. The real impact on our region is that:

- The cost of providing care is higher;
- The overall quality of our care is lower.
- There could be unnecessary deaths in our community as the result of disparate pockets of medical information for a given patient;

The members of the Oregon Business Council (OBC) Data Exchange Group have provided leadership and vision on encouraging the exchange of health information among different providers and locations of care. The OBC's vision is:

> *Meaningful health information is widely and securely available among authorized persons in a usable form anytime and anywhere it is needed in order to improve the overall safety, effectiveness and efficiency of an individual's care and the public's health.*

Physicians and patients know that on a daily basis, there is a gap between this vision and the reality of patient care in every hospital, every physician office, and practically every other care setting.

Nationwide and in the Metropolitan Portland region, there is increasing recognition that leadership, strong community collaboration, commitments of funding and data sharing, provider enthusiasm, and application of technology are required to solve the problems of healthcare information exchange.

Who would be helped by Metropolitan Portland HIE?

The 48 year old man who ended up in the cath lab getting a coronary angiogram because an old ECG wasn't available for comparison.

Physicians in Portland recognize the need for a city-wide results reporting system, and they would use such a system if it did exist. Physicians have difficulty getting medical records from other systems on a daily basis, and therefore see a need for getting a patient's health information from other points of care. Currently physicians must make phone calls and communicate by fax to obtain records from other providers; the success is highly variable and often

dependent on the motivation and skill of a clerk. Physicians in Portland indicate that:

- The current methods for getting records from other health systems is inadequate.
- The length of time to get records is unacceptably long (hours to days) for optimal patient care.
- They are not satisfied with these wait times and often said that it is easier to repeat testing.
- They uniformly felt that a results reporting system would be valuable and that they would use it.

We have reached a "tipping point" in the Portland metropolitan area; the senior leaders of healthcare systems and health plans recognize the many benefits of health information exchange, to improve the health of the community and their own patients. With the OBC's healthcare data exchange initiative, there is an opportunity to make real progress in the region to:

- Improve the availability of critical information for physicians and patients in any care setting.
- Lower the cost of providing care while increasing efficiency.
- Improving patient and physician satisfaction with the care process.
- Increase the overall quality and safety of care provided in Portland.

This report provides the plan to mobilize our community for meaningful health information exchange. Outlined below is an achievable, significant, and cost-effective approach to achieving the OBC's vision.

> *It becomes ennobling to automate some aspects of work, employing machines to do the deadening humdrum toil that men and women are no longer willing to put up with. What remains of the job will be the bits only people can do: tasks that require insight, ingenuity and the human touch.*
>
> *--The Economist, December 23rd 2006.*

What is the Metropolitan Portland HIE?

The Metropolitan Portland Health Information Exchange (HIE) is first and foremost **a collaboration between health care providers and health plans to switch from paper and fax exchange to 21st century technology.** It is a method to electronically move personal health and medical information securely between doctors, hospitals and other healthcare providers when it is needed for a patient's care. This proposal is a first step to determine whether we can be successful in exchanging information in a way that is useful to clinicians.

In 2006, the OBC identified a starting point for HIE that would take advantage of current systems and data in the Portland area, in order to demonstrate an initial success. The decision was to build a results and reports system to display historical data to non-ordering providers.

- The system would take advantage of existing data.
- The results are useful and clinically relevant.
- The selected project offers a short path to a net potential community savings.

The starting point will also lay a foundation that could be built upon in various ways in the future.

The Metropolitan Portland HIE will be cost effective to build and maintain. It will foster the trust of the community by having a core emphasis on the security and privacy of patient information. Some other characteristics of the Metropolitan Portland HIE are:

- Simple to use.
- Targeted in scope.
- Easily deployed, updated, and expanded.
- Compatible with national healthcare information standards.

Who would be helped by Metropolitan Portland HIE?

The patient who spent two extra days in the hospital because the hospital lists did not have records from elsewhere indicating that his renal insufficiency was chronic.

Scope of Participation

Initially the Metropolitan Portland HIE is geographically confined to the tri-county area (**Multnomah, Washington, and Clackamas counties**). This area encompasses about 1.6 million lives, 4,000 physicians, and **4 large health systems**. Clark County, Washington participation in the HIE is also desirable, and will be incorporated into the system as soon as it is feasible. Also initially, the HIE is organizationally limited to physicians and providers in large health systems. The focus on a relatively few number of participants will ensure an early success while creating a foundation for future geographic and organizational expansion.

Who would use the Metropolitan Portland HIE, and why?

The principal users of the Metropolitan Portland HIE are physicians and their clinical staff.

The HIE will permit authorized providers to access the right medical information at the right time. Physicians will have more complete information at the point of care for more informed treatment decisions on individual patients that participate in the exchange. They will spend less time searching for results and reports from other locations, less time taking repeated patient histories, and more time engaged in the productive activities related to patient care. Healthcare providers must have the critical life-saving information they need in times of emergency.

How Would the HIE Operate?

Data and Technology Services

Most providers of healthcare in the Portland metropolitan region have significant amounts of patient data managed by computers. They also have systems to move data within their enterprises, and with selected partners. Starting with these building blocks already in place, **the Metropolitan Portland HIE can inexpensively and easily add consistency and efficiency to data sharing between health systems and physicians** that will improve patient care:

- Patient registration and demographic data.
- Laboratory results.
- Imaging reports.
- Dictated summaries from hospitalizations.
- Dictated summaries from the emergency department (ED).
- Other readily available e-data.

There is no need to build a large infrastructure to support the sharing of these key elements of information from the health system patient records. Rather, **a lightweight set of centralized data exchange services allow the Metropolitan Portland HIE to foster access to patient information** by authorized providers. The centralized services include:

- Patient identity management – "Who is this patient?"
- Record location services – "Where are the records?"
- User authorization, authentication and access control – "Who can see them?"
- User audit functions – "Who has looked at them?"

Who would be helped by Metropolitan Portland HIE?

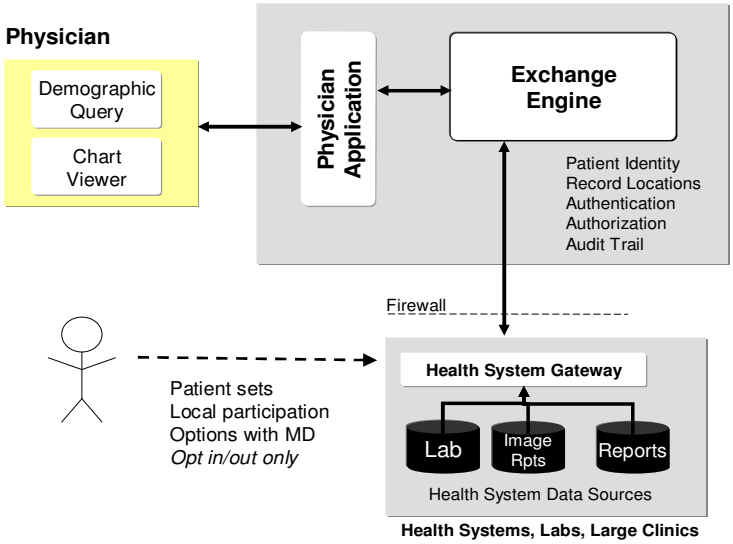
The 64 year old woman with an enlarged thyroid who got a completely redundant work-up for Hashimoto's thyroiditis while we were waiting for her old records.

Federated Model of Infrastructure and Operations

Health systems, physician groups, laboratories, and imaging centers will participate in the HIE through a "federation" managed by a shared operating and policy framework and technology strategy. Fortunately, there are **several national examples of successful federated HIEs**, which have paved the way for the Metropolitan Portland HIE. (More about the federation, including policies, operations, and governance, are contained in the section below on "Getting Started.")

In the federated model, there is no requirement for a large central database to aggregate patient information; rather, **participants maintain data inside their own organizations, which are available to authorized providers**. The exchange simply automates the current process of a phone call, agreement to

cooperate, record lookup, fax, and documentation. A lightweight appliance or "gateway" serves as the connection point between the participating systems and the exchange. The gateway is easy to install, uses existing interface standards, and creates minimal impact on the operations of the source systems used for clinical care by the providers. The automated system is more efficient than current processes and can function 24 hours per day.



HIE Infrastructure. Central services consist of patient identity management, record location services/document registry, security services to include authentication, authorization, and audit trail, and the ability for patients to decline to participate in the exchange. Physicians query data from the exchange with a web portal that can stand alone or be integrated into their clinical systems. There is no central storage of clinical data. Lightweight edge servers or "Gateways" reside at the health systems, receive and convert data from source systems/interfaces, and register patients and records with the HIE. Note that the first level of patient control over participation is at the health system, where the patient may decline to participate in

Outsourcing Strategy

There are vendors that can provide the technology and implementation services required, including those with working solutions in communities similar to Portland. The Metropolitan Portland HIE will leverage current technology, existing infrastructure, and proven methods for developing a federated system using standards for interoperability. The HIE will be hosted as an application service provider (ASP) for the community. This means that **the Metropolitan Portland HIE does not need to build its own data center and technology operations, and it can achieve the OBC's aims at a substantially lower cost** than some other communities achieved previously**.**

Work Plan

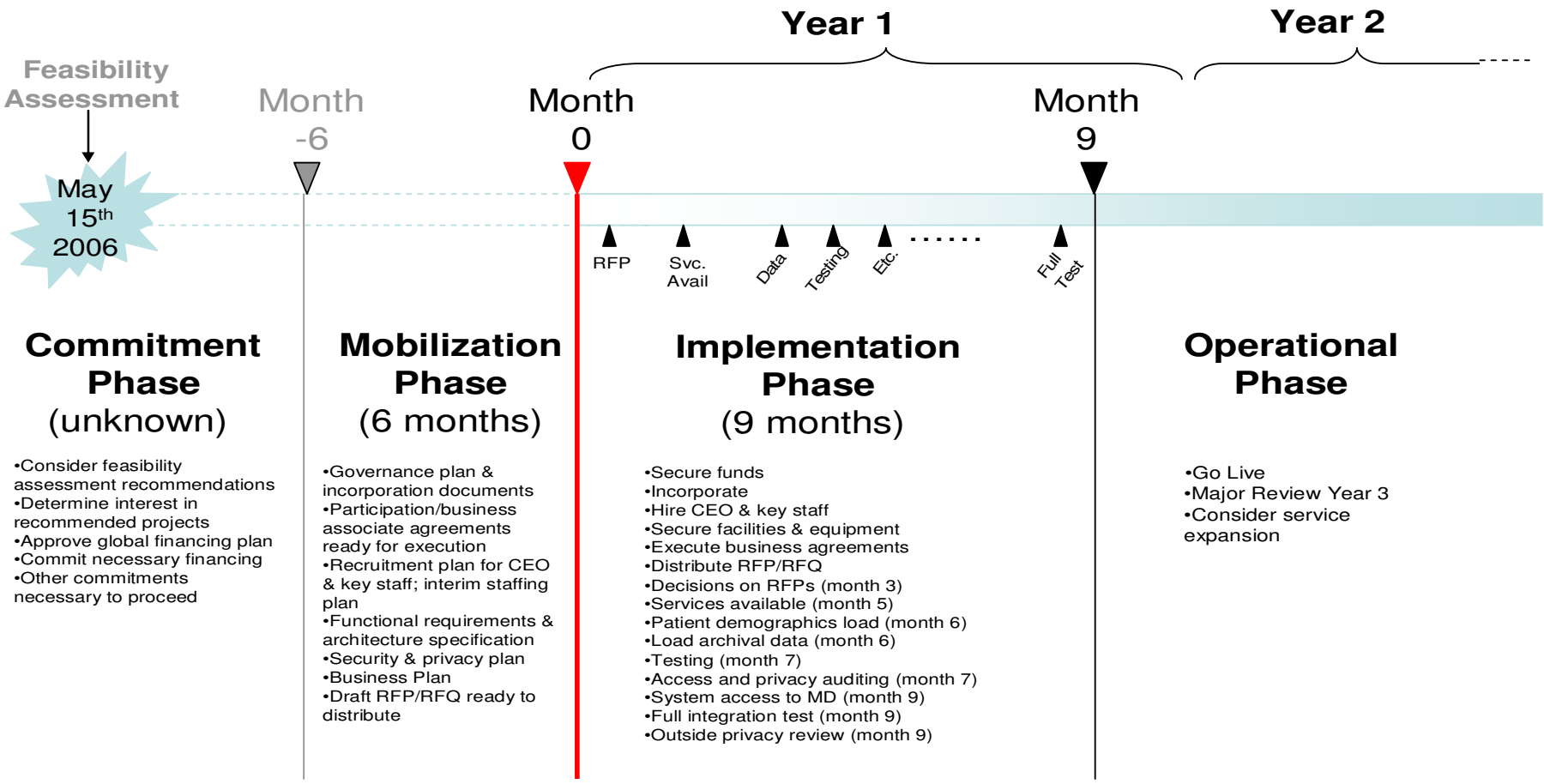
The scope of the Metropolitan HIE project is solely tailored to achieve a community-wide benefit by providing services to improve clinical care (results and report viewing and e-clinical data access). Briefly, the proposal to build, test, and operate this limited scope is shown on next page. By year three, the HIE will need to thoroughly assess its success and determine whether or not to expand functionality in order to achieve a sustainable funding stream.

Privacy & Security of Patient Information

The limited scope proposed for the Metropolitan Portland HIE simply automates existing processes. Therefore, health information will be protected and exchanged under current medical privacy and confidentiality standard procedures, including but not limited to HIPAA and Oregon law. The exchange will implement robust physical and administrative security, internal and external compliance audits, and rigorous "fair information practices" to help mitigate security risks.

Emerging trends in consumer advocacy and standards for vendors have made it advisable and possible to increase patients' control of their information. **The system will allow patients to opt out of the HIE in consultation with their providers**; however, it is unlikely that large numbers of patients will choose to do so. Health systems will update their patient consent forms to cover participation in Metropolitan Portland HIE. The HIE will assist health systems by providing materials that clearly explain the exchange to patients, and their options to decline to participate, which will be determined by each provider organization.

MPHIE Project Phases



Commitment Phase (unknown)

- Consider feasibility assessment recommendations
- Determine interest in recommended projects
- Approve global financing plan
- Commit necessary financing
- Other commitments necessary to proceed

Mobilization Phase (6 months)

- Governance plan & incorporation documents
- Participation/business associate agreements ready for execution
- Recruitment plan for CEO & key staff; interim staffing plan
- Functional requirements & architecture specification
- Security & privacy plan
- Business Plan
- Draft RFP/RFQ ready to distribute

Implementation Phase (9 months)

- Secure funds
- Incorporate
- Hire CEO & key staff
- Secure facilities & equipment
- Execute business agreements
- Distribute RFP/RFQ
- Decisions on RFPs (month 3)
- Services available (month 5)
- Patient demographics load (month 6)
- Load archival data (month 6)
- Testing (month 7)
- Access and privacy auditing (month 7)
- System access to MD (month 9)
- Full integration test (month 9)
- Outside privacy review (month 9)

Operational Phase

- Go Live
- Major Review Year 3
- Consider service expansion

Costs and Benefits of Metropolitan Portland HIE

Operating Costs

Based on the system architecture described above, cost estimates were solicited from five vendors for complete operation of the MPHIE as an ASP model. Key findings from the process are that the HIE exchange operations and the ASP vendor contract would represent:

- Approximately $3 million/year, at retail pricing (and could be lowered through negotiation).
- Local, central staff of 3-4 to support leadership, participant coordination, contract management functions.
- $400k for follow-on work around physician adoption and privacy.

Who would be helped?

Or the 37 year old Hispanic woman who got the exact same series of tests at 3 different institutions instead of getting what she really needed -- which was a surgeon to remove her inflamed gallbladder.

The Metropolitan Portland HIE costs are currently projected at about $3.4 million per year.

Additionally the participating organizations would incur costs as follows:

- Data Suppliers (hospitals, labs, and imaging providers)--Gateway server, staff time to develop interfaces, monitor/maintain the gateway. Large organizations would likely incur the cost of their own infrastructure, but smaller organizations could share gateways and associated interfaces.
- Clinical Users (hospitals, large practices) -- champion clinician support, training/orientation efforts, workflow redesign to leverage HIE access, and eventual integration into EHR systems.

The total additional cost to each large participant is estimated at $100K-$150K per health system and other data suppliers.

Benefits Analysis and Community Savings

The MPHIE Results and Reports retrieval system is projected to result in significant community savings over time. Potential annual savings (eventually in ten years) are estimated to be in excess of $20 million per year, with over $12 million per year achievable within five years.

The source of the savings includes:

Avoided duplicative services	$8.8 million
Reductions in manual and paper processing	0.2 million
Non-routine paper processing	5.4 million
Physician productivity (efficient use of MD's time)	4.1 million
Practice office productivity (efficient use of staff time)	1.7 million
Avoided time-loss for employees/employers	1.2 million
Total Savings	**$21.4 million**

The benefits of the Metropolitan Portland HIE accrue as follows:

- All of the substantial savings go to the community within a few years.
- Savings from improved efficiencies are a benefit to physicians, hospitals, other providers, health plans, purchasers, and patients.
- Savings from avoidable services are a benefit to patients and their plans and employers.

Start-Up Financing

The operating costs for Metropolitan Portland HIE are currently estimated at $3.4 million per year, or $20.4 million over the six years if it is aggressively marketed and widely used by providers. Over the six year period the community would derive $47.8 million of savings or $27.4 million after operating costs. The proposed costs include plans for the necessary marketing and technical support to achieve these savings.

Participating stakeholders will necessarily be the source of startup financing. It will be critical to secure programmatic and financial commitments from both health plans (insurers, Medicaid, capitated plans, self-insurers) and health systems. It is unclear, but seems unlikely that financial commitments could be obtained from participating physicians in the early stage of HIE development.

The Metropolitan Portland HIE should also seek to maximize other financing form other sources including federal health information technology grants and contracts, any other possible federal sources or appropriations, Medicaid transformation grants, other Medicaid sources including any possible pass-through options to Medicaid sources including any possible pass through options to Medicaid plans, state appropriations and foundations. These additional sources are only reasonably possible after stakeholder pledges are in place.

Sustainability of the Results and Reports retrieval system can be supported by continuing commitments of funding by the major participants. A more satisfactory strategy is to become self-funding. The HIE will need to develop additional revenue sources and leverage its core services to become self-sustaining. With stage one success, the funders may authorize expanding the programmatic scope with such options as medications list and medication- reconciliation support, ePrescribing, eligibility validation, claims processing and others. (See Appendix A for a path to financial sustainability).

Evaluation of HIE Success

The Metropolitan Portland HIE will be evaluated based on a series of metrics as it matures. Given the limited scope of the initial project, it is important to tailor the desired success metrics appropriately at each stage. Some proposed metrics are given in Appendix III, and include the following categories:

- Operational and Implementation (Years 1-2)
- Workflow (Years 2-5)
- Clinical Usefulness (Years 2-5)
- Overall Success (Years 5+)

The Board of Directors should recommend success metrics and an evaluation timeline to the Founders Council. The board should also recommend whether to continue funding the HIE at specified milestones. The Founders Council must have sufficient data and clarity about the operations and outcomes of the HIE project in order to continue their funding commitments over the lifetime of the project.

Risks

As with any transformational project or enterprise, there are risks with the Metropolitan Portland HIE project. The decision to keep the first step limited in scope in order to reduce financial exposure introduces several risks:

- Physician uptake and utilization may be slower because of more limited utility.
- Consumer concerns relating to protecting their privacy may result in too few participants to be a useful system (See below and Appendix II on "Privacy and Consumer Control: Risks and Mitigation Options").
- Savings and overall community benefit may be delayed.
- Adding expanded functionality later may cost more as a result of earlier technology decisions.

The mobilization workbook that accompanies this report proposes recommended strategies for anticipating and mitigating these risks. Continued attention from the Board will assure sound decision-making to assure the success of the system.

Consumer Access to the HIE

The plan for engaging consumers with the Metropolitan Portland HIE is quite limited at initial start-up. As proposed, patients will have access to and manage their information through a participating provider.

Emerging community expectations and industry standards regarding consumer access are making it possible and advisable to move quickly to engage patients in a more direct manner. Failure to do so could results in:

- *missed opportunities to help consumers improve their health*
- *sizable numbers exercising their option to decline to participate, resulting in too small a system to be useful to providers*
- *a small but effective minority legally prohibiting the exchange from functioning.*

As the MPHIE is implemented, the leadership will need a transparent and nimble plan for addressing the relationship between the exchange, consumers, and the emerging proliferation of personal health records (PHRs). This plan will need to move quickly toward a model that responsibly allows patients to:

- *view their clinic records in the exchange*
- *know who accessed their records through the exchange*
- *know where exchange information about them is kept*
- *manage their participation options*

Another serious risk to the success of the Metropolitan Portland HIE arises from the need for significant, ongoing leadership and commitment from the participating organizations.

- If one or more of the community participants declines or terminates participation, there will be a significant threat to the usefulness and viability of the HIE.
- If participation is only half-hearted, without the serious commitment to keeping a federated system functioning and integrated within an organization's internal systems, the system will fail.

Mitigating these risks will require continued committed leadership by the project champions and stakeholders.

There are clearly risks of doing nothing to improve the availability of meaningful health information.

- Risks to quality and safety, including deaths and injuries due to lack of key information across settings;
- Ever-higher cost of providing care;
- The current "silos" of data will become more entrenched.

Getting Started

Governance Plan

The Metropolitan Portland HIE must have a governance model that is based on multi-stakeholder, mission-driven leadership, and respected by the community. **The legal entity will be a new organization incorporated as a 501(c)(3) non-profit** with the sole initial mission to implement the Metropolitan Portland HIE. A non-profit is preferred because it can accept foundation and government funding, and it conveys the community-wide purpose. Current governance development will not preclude future addition of a for-profit enterprise if the opportunity emerges.

The organization will be managed by a Board of Directors, structured in a way that will engender trust and encourage:

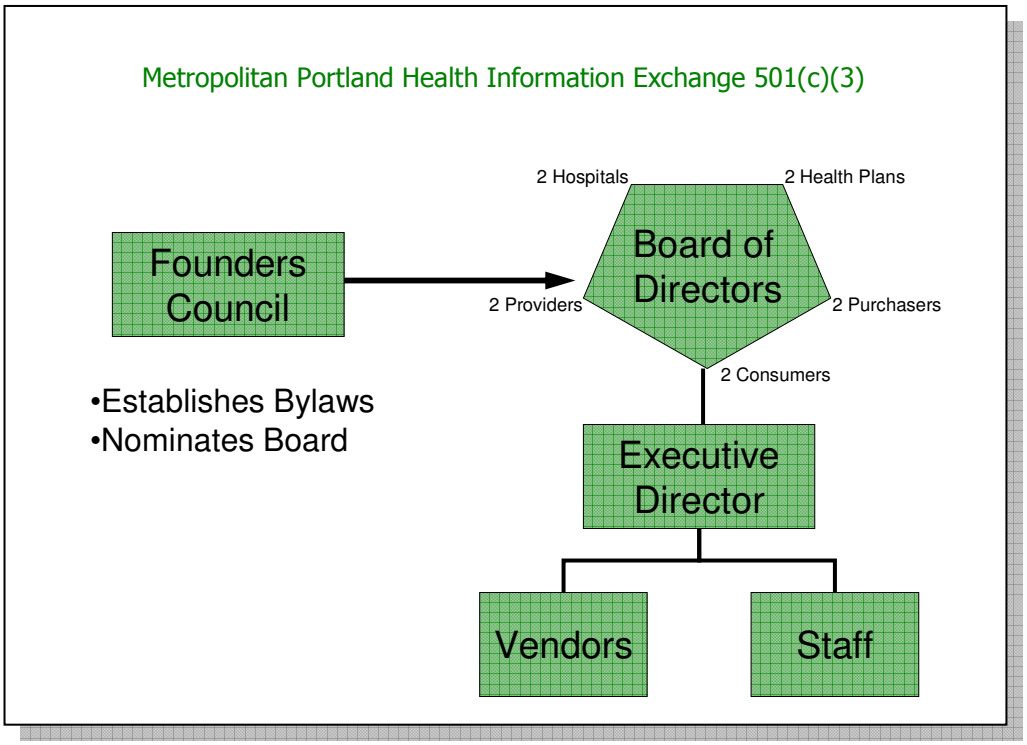
- Organizations to fund it
- Organizations to provide core data
- Patients/consumers to participate
- Physicians to use it

The Board will consist of ten directors as follows:

- 2 health plans
- 2 hospital/delivery systems
- 2 physicians
- 2 purchasers
- 2 consumers

One or more of the Directors should be a public sector representative.

These directors will be responsible for all decisions regarding the operation of the HIE. The Directors will be appointed by a Founders Council. The Council shall consist of one representative from each health system, health plan, health care provider organization, government organization, or purchaser that commits to contribute a specified amount per year for five years to the MPHIE. Founders will select their own representatives. In addition to appointing directors, the Founders approve changes in the by-laws.



Request for Proposals

The Metropolitan Portland HIE will conduct a fair and open process to select a vendor or vendors to help build, operate, and maintain the exchange. The vendor selection process will utilize a request for proposals that encapsulates:

- The scope, scale, and key requirements of the Metropolitan Portland HIE.
- Pricing mechanism that allows fair comparison between bidders, and clear separation between short-term and potential long-term capabilities of the HIE.
- Contract terms and conditions.
- A basis for short-term deployment as well as a plan for longer-term growth of the exchange.

Staffing and Operations Plan

The MPHIE is intended to operate with a lean, neutral organization that provides services to the various stakeholders across the community who are participating in making health information available. The organization will consist of a few key individuals who are the responsible for executing the MPHIE vision and supporting its mission. Most other business and technical functions will be outsourced to service providers or contracted with regional experts.

The operations team will take responsibility to ensure that the Metropolitan Portland HIE is managed in line with the board's expectations with regard to:

- Technical approach;
- Management of services;
- Performance monitoring;

- Stakeholder coordination and management;
- Longer term financing.

The Metropolitan Portland HIE operations team will be responsive and accountable to the stakeholder board. The Executive Director will ensure that:

- The board receives a quarterly written report on the activities and status of the HIE;
- Information about operations, finances, and execution of key milestones are communicated in a quarterly meeting of the Metropolitan Portland HIE board of directors.
- That a streamlined process is implemented to seek input from the board for ad-hoc decisions.

Conclusions

The health care system is at an important crossroad – a new, affordable, technology is available to transform how we manage patients' medical information. Oregon's hospitals, providers, health plans, and other organizations are moving rapidly to bring the benefits of interoperable electronic health records to their operations.

Who would be helped?

The 53 year old woman who spent 2 weeks in fear that she had cancer until we finally got her old chest xray -- which showed that the spot we found on xray was exactly the same 4 years ago.

But Oregon's leaders recognize that simply expecting organizations to make changes within their own walls will not begin to capitalize on the opportunities this new technology offers for improving health care. By working together as a "system", the possibility of having patients' information available whenever and wherever it is needed can radically improve safety and quality. Meeting patients' treatment needs while respecting their privacy can only occur under a shared policy framework. Developing a common infrastructure will not only be less expensive; it will change the way care is delivered and the outcomes that patients experience.

The mobilization workbook that accompanies this report provides a comprehensive, turn-key plan to begin building an economical health information exchange for the Portland metropolitan area. This plan starts with a small step that can test the legal, political, technical and financial assumptions that underlie the drive to make medical information readily available while protecting privacy. The community is ready to be mobilized, and only awaits a green light from the leaders that can make it happen.

Appendix I: Expanded HIE Services for Financial Sustainability

Establishing the Metropolitan Portland HIE will require start-up and ongoing financing. If the funders are satisfied with the success of the initial efforts of a Results and Reports system, and seek to make the HIE financially self-sufficient, there is a path to sustainability. Building a system that could be modified into a self-sustaining model would be no more expensive than building a standalone system that would not be extensible.

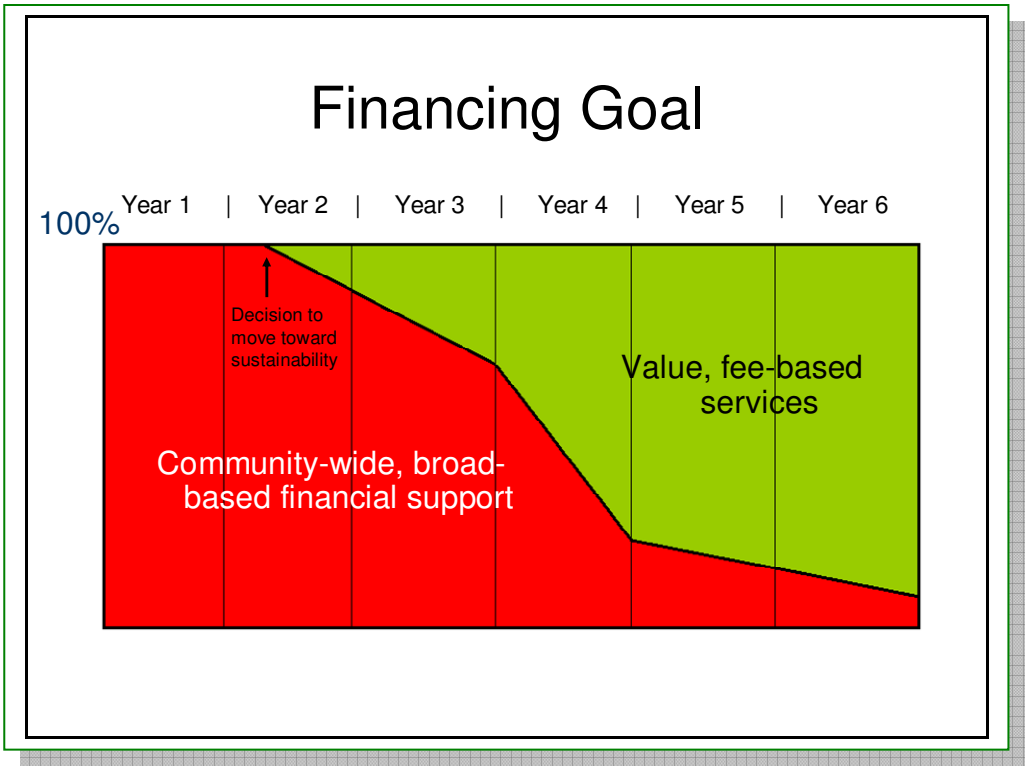
The initial project outlined in this report relies on broad-based community support to:

- Establish the HIE.
- Implement the results and reports retrieval services.
- Improve clinician access to information about their patients.
- Begin achieving the expected improvements in clinical care.
- Begin saving resources.

If the decision is made to seek sustainability, the exchange will begin developing transactional and other value-based services. These additional services of the MPHIE can generate revenues and further the programmatic goal of improving clinical care. This additional functionality will increase physicians' use of the system, and thus lead to even greater savings. The expansion will in turn support late stage revenue sources, such as providing data for personal health records.

By later stages (years 5+), the development of transactional, value-based subscription and other services should be able to make the MPHIE financially self-sufficient (see figure).

Achieving self-sufficiency without perpetual broad-based community financing will depend on how quickly an expanded scope of services could be pursued. Even so, the initial four to six years of MPHIE operations will likely require some level of broad-based community-wide support before it can become fully self-sustaining. With a commitment to a broader range of services, the total community-wide support required for the MPHIE over the four to six years would be $12 to 15 million.



Services Focus by Stages: The nature of MPHIE services during the three stages includes:

Stage 1: Community-wide core services

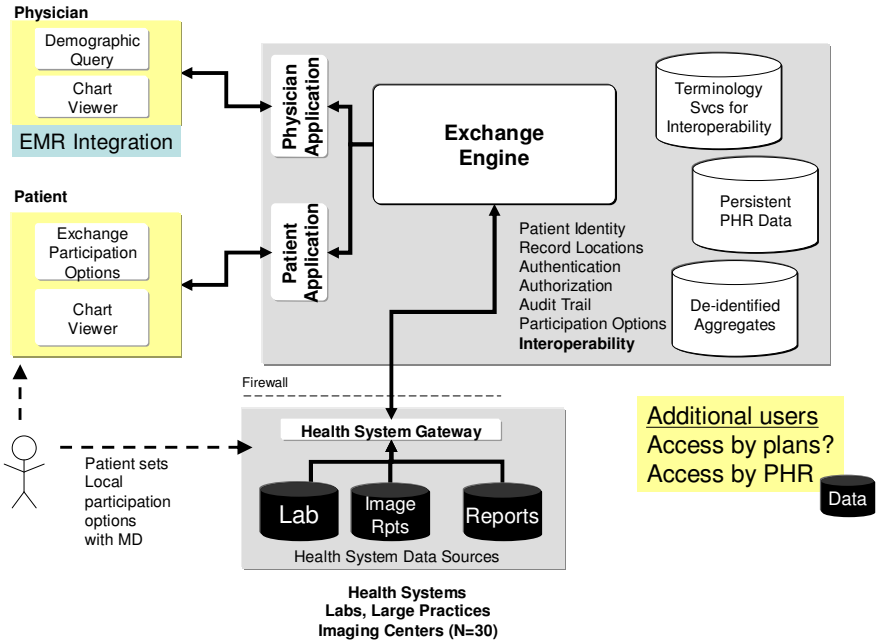
- Improve clinical care (results/reports retrieval & viewing, e-clinical data access).

Stage 2: Value/fee-based services (transition)

- Improve clinical care (report distribution, disease management, public health reporting, immunization system integration, provider quality management).
- Services to improve efficiency (complex case mgmt, chronic disease mgmt, admin processing, benefits admin).
- Leverage the data (quality reporting, pay-for-performance data, data for personal health records).
- Leverage technology (standardized interfaces across multiple systems).
- Branding opportunities for providers, plans, purchasers.

Stage 3: Value/fee-based services (sustainability)

- Core driver: Improve clinical care services.
- Expansion of efficiency-based services & data leveraging, and administrative simplification.
- Applications based on clinical data.



Initial Value-Based Services. In later stages, the exchange must be able to support services that require increased interoperability, such as direct integration with provider EMRs, Personal Health Records, and more data types (such as medications). The exchange will move from simply passing envelopes of data back and forth, to being able to interpret the information inside the envelopes. This interoperability would allow the provider to automatically import structured and coded data from the HIE into the clinical lists of the EMR (problem, medication, allergy, procedures, etc). The exchange would support decision support alerts/triggers/reminders. Persistent data storage will enable establishment of PHR databases. Additional users could include health plans and other PHR services. Also full interoperability services, aggregate databases suitable for secondary uses, and infrastructure to generate sustaining revenue such as lab result delivery, claims attachments, disease management, medication lists, and others.

Appendix II: Privacy and Consumer Control: Risks and Mitigation Options

(This Appendix reflects a minority viewpoint in the Mobilization Team as expressed by Jody Pettit, MD)

The Metropolitan Portland HIE must operate from the beginning within a framework of proper privacy and security policies, technical capabilities, education of all stakeholders, and communications to the public. Two broad functions merit special consideration in the early stages of the Metropolitan Portland HIE:

- Patient access to clinical data in the HIE.
- Privacy and patient control of health information flowing through the exchange.

The limited scope of the initial effort has precluded this report from making detailed plans to support these functions. However, there are good reasons to re-consider their implementation in the early stages of the HIE.

Patient Access: Market research reports indicate that people are concerned about their health information privacy. There is a trend toward increasing consumer electronic access to and control of their health information. Research shows that the majority of people want online access to their records. This trend is recognized both in Oregon and nationally.

- The Oregon Health Information Security and Privacy Project (HISPC) has highlighted many policy-related issues relating to patient access and control, which will help inform the Metropolitan Portland HIE.
- The Office of the National Coordinator for Healthcare Information Technology (ONCHIT) will encourage grant proposals that incorporate the capability for patients both to control disclosure of their data via the HIE, and obtain access their own shared health information.

Allowing patient access to health records generally helps to empower patients to manage their healthcare, maintain a sense of control over their health information, and increases the portability of the patient record.

The Metropolitan Portland HIE mobilization plan currently does not offer patients the capability to view their own information managed in the system. The current plan is therefore at risk of limiting the portability and usefulness of information in the exchange, achieving poor patient acceptance, damaging publicity, and reduced likelihood of longer-term success. To mitigate these risks, **it would be highly advisable to identify a cost-effective, efficient means of providing patient access to the exchange from the very beginning**.

Privacy & Patient Control: There is a trend among regional HIE efforts to provide some level of patient control over disclosure and access of some types of information via the exchange.
The Metropolitan Portland HIE currently only provides the option for patients to "opt-out" of the exchange by informing each of their participating providers. In general, the ability to "opt-in" is preferable, and would be better received by the public. The **Metropolitan Portland HIE should rapidly move to incorporate a more robust and patient-friendly means of controlling participation options, together with a reasonable level of patient control over specific data** including but not limited to "sensitive information" as legally defined.

Summary of Recommendations: The current mobilization plan could be perceived to fall short of safeguarding privacy and provide consumer control of sensitive health information. However, the likelihood of success of the project could increase by adopting the recommendations for risk mitigation outlined above:

- Provide a means of patient access to their data in the exchange from the very beginning, in a cost-effective, efficient manner.
- Rapidly move to incorporate and more robust and patient-friendly means of controlling patient participation options in the HIE, together with a reasonable level of patient control over specific data.

Appendix III: Detailed Metrics

Operational and Implementation Metrics (Years 1-2)

Key Performance Indicator	Measurement (To be Trended)	6 mth Expected Value
Funders Committed	funders committed / funders expected (6)	100%
Data Sharing Agmt Signed	Orgs signed / Orgs expected (10)	90%
Staff Hired	Staff hired / staff expected (4)	100%
Interfaces Built	Interfaces built / interfaces expected	
Patients Registered in MPI	Patients registered / patients expected (1.6mil)	60%
Users Registered	Users registered / users expected (2500)	85%
Documents Listed in RLS	Docs listed / expected doc volume	

Workflow Metrics (Years 2-5)

Key Performance Indicator	Measurement (To be Trended)	Expected Value
HIE available to Physicians & staff	HIE portal on desktops / number of desktops	60% w/in 2 years
Physicians & staff trained	Attendees / expected attendees	75% w/in 1 year
Physician Overall Usage	Physician use once per week/Physicians registered	50% w/in 2 years
Demographic Usage	Physician retrieval of demographics / total visits	30% w/in 2 years
Faxing reduced	Faxes / baseline by organization	40% w/in 2 years
Phone calls for results reduced	Results calls / baseline	40% w/in 2 years
Reduction in lab tests	lab tests / baseline	

Clinical Usefulness Metrics (Years 2-5)

Key Performance Indicator	Measurement (To be Trended)	Expected Value
Physician Satisfaction	Survey	
Patient Satisfaction	Survey	

Overall Success Metrics (Years 5+)

Key Performance Indicator	Measurement (To be Trended)	Expected Value
Financially self sustaining	Revenue / expenditures for existing services	
Investment in new functionality	Additional Money invested	
Reduction in cost	Plan expenditure on labs / baseline	