Abstract

Oregon's Medicaid agency, the Division of Medical Assistance Programs (DMAP), proposes to develop and build a health record bank (HRB Oregon) that will electronically store Medicaid clients' health information and make it available on a secure-web site. HRB Oregon will be an online, standardized, widely available and secure means by which Medicaid beneficiaries can access recent and historical laboratory results, imaging reports, dictated reports, and other patient data and share this information in clinical situations in which it is not currently available.

Using a new kind of data-exchange system that relies on open standards to facilitate information exchange and on open-source licensing to enable other institutions and states to adopt the technology, HRB Oregon will connect the individual client to private and public health systems and Medicaid managed care plans, thereby helping to coordinate care. To protect privacy, the State of Oregon Governor's Office and the Oregon Department of Human Services will provide leadership and convene a governing board with a mandate to serve as a trustworthy guardian of personal medical information. Input from and participation of health care stakeholders and beneficiaries will be solicited during the course of the development.

The three primary goals of HRB Oregon are to: (1) Improve health by providing patients with the personal medical information that might not otherwise be available in clinical encounters; (2) facilitate patient-centered, high-quality primary care in support of coordinated team efforts, even as beneficiaries churn on and off of Medicaid; (3) reduce costs associated with unnecessary and often duplicative diagnostic and other services.

HRB Oregon will improve the efficiency and effectiveness of Medicaid in many ways. It will 1) improve care quality by providing otherwise unavailable information about previous tests, lab results, diagnoses, and health system visits, thereby allowing for better-informed clinical work-ups and facilitating care coordination; 2) reduce costs by reducing duplication of tests, procedures, office and emergency room visits, and hospitalizations; and 3) enhance patient engagement by providing more easily accessible information, together with decision support tools, and instructions that will likely result in better partnership and participation.

We are requesting Federal funds in the amount of $5.5 million over the next eighteen months to plan, design, develop, test, implement, and evaluate HRB Oregon.

Project Narrative

Statement of Project/Need

> *"If all this information were available to every hospital and physician, think of all the time we would save, and we could safely forget the date of our appendectomy."*
> —Ursula Wertheim, Letter to the Editor, *New York Times*, June 5, 2007

This is a proposal to build and implement a health record bank (HRB Oregon) that would store an Oregon Medicaid beneficiary's[1] health information in a central electronic location and make it available to the beneficiary/provider on a secure web-site. With patient participation, the data could also be made electronically available to clinicians, case managers, or any party who requested such data; Oregon is proposing to engage in an open, transparent and public process to determine the extent of patient control over release of specific content within the HRB

While this proposal focuses on building the HRB in conjunction with patient access, we want to emphasize up front that HRB Oregon will support and supplement rather than replace existing information sources to which physicians, hospitals, case managers, administrators and others already have access. In situations where such access is currently available, it will remain available. The HRB is not intended to disturb those relationships. The HRB will serve two additional and transformative ends: 1) by gathering and combining information from existing databases into one secure, web-accessible home, it will allow for later developing different models of care, including team coordination models, that will use the HRB as a central hub; 2) by giving the patient direct access to the HRB, it will allow the patient to share this information with health care providers in various situations where it would not otherwise be available.

Currently, such situations are legion and diverse. Just one example would be emergency departments, which, too often, serve as a main source of primary care for Medicaid patients and which, again too often, do not have access to the patient's health history to guide diagnosis and treatment. This situation can lead to redundant work-ups, delayed care, unnecessary hospitalization, and exposure to unnecessary procedures. At best, the patients are merely frustrated; at worst they may get inappropriate treatment or possibly even suffer significant harm. And, of course, Medicaid payment is often the funding source for the inefficient or superfluous services.

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[1] Throughout this application, Medicaid "beneficiary" or "patient" should be taken to mean not only an individual member but, as applicable, a patient's parent or guardian.

This proposal is built around an elegantly simple yet innovative solution: give patients access to their own health histories and let them share that information with others as the need arises. HRB Oregon would gather information from the existing Oregon health data ecosystem and transfer it to a high-security health record bank, where it would be accessed via a web application by the patient and, in defined circumstances, by others. It would operate as an online, standardized, widely available, and secure means of accessing recent and historical laboratory tests, imaging results, and dictated reports. Moreover, because HRB Oregon technology will be based on open standards and be available by an open-source license, it will be replicable and expandable to other populations and other States.

The first-line benefit of this innovative approach would be that patients can access their own health history at any time, whether for their own purposes or by way of informing others who might be requesting specific information. More broadly, a patient could, from any service point in the country that had access to the Internet, quickly and easily provide health care professionals or others with immediate access to otherwise unavailable information that may be vital to appropriate and efficient treatment. Such access would significantly reduce costs associated with unnecessary and often duplicative diagnostic and other services.

Clearly, an important component of any such concept is protecting the privacy of the patient's health information. The Oregon Governor's Office and the Oregon Department of Human Services will provide leadership and convene a governing board with a mandate to serve as a trustworthy guardian of personal health information. Input from and participation of health care stakeholders and beneficiaries will be solicited during the course of the development.

With HRB Oregon up and running, patients will bring more health history information to the clinical encounter, clinicians will have more information to act upon, and Medicaid will spend far less money on unnecessary or redundant services.

Project Justification

HRB Oregon is a patient-centric approach to knitting together the disparate information silos that contain critical health and health-related information about each Medicaid enrollee.

By increasing the *efficiency* of care provided, HRB Oregon will help to control the cost of providing Medicaid services to Oregonians and thereby enable Oregon to expand the number of individuals who have access to care. By increasing the *effectiveness* of Medicaid in Oregon (OHP), HRB Oregon will help Oregon

Medicaid fulfill its mission to support and promote the health of all its beneficiaries.

The Oregon Health Record Bank project will improve the efficiency and effectiveness of the Oregon Medicaid Program by:

1. *Aggregating information about health system encounters, thereby enabling easy location of information about diagnoses and reducing redundant visits.*

The cost of information unavailability in human lives, illness and unnecessary expenditures is enormous. Upwards of $1 billion is spent in Oregon annually on redundant, unnecessary or inappropriate care and a large portion of this, approximately $800 million, stems from fragmentation and gaps in the system.[2] A significant part of this fragmentation is the missing information that complicates as many as 13% of all clinical encounters.[3] It has been estimated that between 9% and 20% of laboratory tests could be avoided if prior test results were available to the clinician, saving up to $32.8 billion annually in medical costs nationally.[4]

2. *Facilitating availability of a more complete record of the incidents of care that individuals receive as they move on and off of Medicaid enrollment.*

The constant movement of patients in and out of Oregon's Medicaid managed care delivery system also fragments care and drives Medicaid costs. A 2000 study of churning in Oregon's Medicaid managed care delivery system showed that only 34% of beneficiaries were continuously enrolled in a single health plan over a one-year period; 11% changed health plans within that year and another 10% left Medicaid and returned within the one year study period.[5] The information gaps created by churning, and the resulting redundant care, laboratory tests and diagnostic studies could all be reduced by a Health Record Bank with connectivity to safety net systems and private health systems.

3. *Serving as a patient-centric repository for test and diagnosis results, thereby reducing the duplication of testing and diagnostic procedures.*

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[2] Oregon Health Policy Commission, *Report to the 73rd Legislative Assembly: Electronic Health Records and Data Connectivity*, March 2005.
[3] Smith PC, Araya-Guerra R, Bublitz C, Parnes B, Dickinson LM, Van Vorst R, et. al., *Missing Clinical Information During Primary Care Visits*, JAMA 2005; 293(5): 565-71.
[4] Bates DW, Kuperman GJ, Rittenberg E, Teich JM, Fiskio J, Ma'luf N, et al. *A Randomized Trial of a Computer-Based Intervention to Reduce Utilization of Redundant Laboratory Tests*, Am J Med 1999; 106(2): 144-150.
[5] Wright B, Denfeld D, Bayley B, Edlund T, *Continuity and Turbulence in Oregon Medicaid Managed Care*, Providence Health System Center for Outcomes Research and Education, 2000.

Notwithstanding the efficiencies of the Oregon Health Plan (OHP) managed care delivery system and the savings from the Oregon prioritized list, these efficiencies and savings are being outpaced by medical inflation. In particular, diagnostic services impose a growing burden, in large part because they are in effect ranked at line zero (before all other services) in the prioritized list. The cost of diagnostic services alone now accounts for approximately one-third of the capitation rate paid to Medicaid managed care plans in Oregon. Opportunities to reduce redundant or unneeded diagnostic testing are of the highest priority to the State of Oregon.

4. *Initiating an information strategy that is deeply respectful of patients and their families as partners in their own health care.*

Passive patients who lack the information and motivation to proactively care for themselves impose a daily burden on the Medicaid system. HRB Oregon will encourage patient involvement by giving the patient or parent a new level of access to his/her own record, and a new ability to bring valuable information to the clinical encounter. In so doing, HRB Oregon adds a new information channel in support of other data clinical and administrative interconnectivity efforts, enabling and encouraging patients to take an active role in their relationship with the health care system. HRB Oregon will empower patients to review their own records and to share their information with clinical and other service providers. Clinicians and health systems will gain an additional patient-centered source of up-to-date health information, while retaining access to their own existing clinical information systems.

Taken together, these improvements in efficiency and effectiveness will result in higher quality health care for Oregon Medicaid beneficiaries and a potentially significant reduction in costs.

Project Goals and Outcomes

Goals

The ultimate goal of this project is to provide higher-quality care and better health outcomes at a lower per-patient cost than is now being achieved. The strategy for achieving this goal is to create HRB Oregon, a patient-centric information gathering, storage, and retrieval system that operates with and alongside existing clinician-centric and administration-centric systems.

The three specific goals of HRB Oregon are to:

1) Improve health by providing patients with more complete, more recent, and better quality personal health information;

2) Facilitate patient-centered, high quality primary care in support of a coordinated model of care even as beneficiaries churn on and off of Medicaid;

3) Reduce costs associated with unnecessary and often duplicative diagnostic and other services.

To achieve these goals, the project places significant emphasis on engaging and involving physicians and other providers. Care teams will participate and advise the project throughout its life cycle in regard to developing detailed requirements and system design. In parallel, there will be a substantial investment in health care provider training, education, and adoption to help maximize the effectiveness of HRB Oregon in concert with the patients.

As for the patients themselves, Medicaid beneficiaries may have varying degrees of access to home computers, public library computers, or computers in other settings. Regardless of their ability to access technology, however, they will need significant coaching, management, and help integrating patient-centered information into their interactions with the care team. Hence, the project will also emphasize patient education and adoption, with the goal to establish partnerships between patients and care managers or clinician users who help "mentor" patients using HRB Oregon.

Outcomes

The measures that will define the success of the project include the following:

- Number of patients establishing and using accounts to gather and view their personal health information.

- Number of patients providing proxy access to their clinicians and social service providers.

- Number of clinicians and social service professionals reporting that they have received information through HRB Oregon and reporting that they regularly use information from HRB Oregon.

Research and experience with patient-information systems supports the belief that these project outcomes will result in the following health and health services outcomes:

1) Reductions in redundant diagnostic testing

2) Avoided drug interactions

3) Avoided redundant office visits

4) Availability of information about health system interactions that occurred while patients were not Medicaid enrollees

5) Patient satisfaction with the system

6) Clinician and other professional satisfaction with the system and the information they receive through HRB Oregon.

Adherence to Accepted Industry Standards

The technologies that will be used to implement HRB Oregon are based on widely accepted software industry standards and fully compatible with existing Medicaid initiatives including Medicaid Information Technology Architecture (MITA). For example, consistent with MITA, HRB Oregon is built around Service Oriented Architecture (SOA) and designed for common interoperability and access (a web-based personal health record.) Because HRB Oregon is based on a modular design, it is consistent with MITA adaptability and extensibility principles. These design choices have been made to ensure flexibility as future capabilities become available both in the open-source software development ecosystem and from commercial vendors.

HRB Oregon itself will be made available under an open-source license, which offers several compelling advantages over closed-source licensing:

- the software code is freely available for implementation after release;

- it avoids any possibility of proprietary vendor lock-in for ongoing maintenance and upgrades (see also sustainability discussion below);

- because the code is freely available, the software can be more closely reviewed by more developers and thus can be more secure than comparable vendor products.

An additional advantage of open-source licensing specific to this project is the economic leverage it provides for Medicaid Transformation Grant dollars, since it ensures that the fruits of HRB Oregon project dollars are available to every other Medicaid program in the country at zero-cost. In other words, the HRB Oregon project will not simply invest scarce federal dollars in a single-vendor solution that locks the State of Oregon into an ongoing and potentially expensive relationship with a single vendor, but will instead invest those scarce dollars in a solution that will be nationally available at no cost for the software itself.

Oregon is a natural choice for an open-source Medicaid Transformation project since it is home to a large community of open-source software developers and several nationally known open-source organizations, such as the Open Source Lab at Oregon State University and the Linux Foundation. In addition, the Open Health Information Technology initiative provides open-source healthcare software components and development resources that could be used to build components of HRB Oregon.

To ensure data security and community support, HRB Oregon will also conform closely to the standards of Connecting for Health, a collaborative enterprise sponsored by the Markle Foundation, the Robert Wood Johnson Foundation, and the U.S. Department of Health and Human Services. These standards are articulated in the "Common Framework," a set of technical and policy recommendations for constructing Regional Health Information Organizations (RHIOs) that offers specific guidance for web-based personal health record technologies such as personal health record systems and health record banks. It should also be noted that Oregon is one of 34 states participating in the Health Information Security and Privacy Collaboration (HISPC), and that HRB Oregon will conform closely to HISPC standards.

Finally, in addition to using open-source licensing, HRB Oregon will also adhere to "open standards" software design that will allow communication with other software and ensure that authorized applications and technologies that wish to communicate with HRB Oregon will be able to do so on a level playing field. Use of open standards protects the investment in the HRB project by enabling any technically compliant and policy-approved application or service to, for example, connect to HRB Oregon either as a data supplier or as a data recipient.

Estimate of Impact to Beneficiaries

HRB Oregon is projected to serve all Oregon Medicaid recipients and, in future years as account recipients leave Medicaid, a growing population of under-insured and low-income patients who will retain access to their HRB accounts.

There are approximately 364,000 Oregon Health Plan enrollees, including 270,000 in fully capitated health plan (FCHP) systems, 85,000 in fee-for-service, and almost 9,000 with primary care case managers.[6] As noted, the HRB model could also be extended to cover the uninsured, since many uninsured individuals cycle on and off Medicaid, and up to 70% of uninsured individuals are potentially eligible for Medicaid benefits based on income.

In addition to the system-wide economic and clinical benefits for practitioners and team coordinators noted elsewhere, a patient-centric system should and must provide direct benefits to the clients whose information will be stored in HRB Oregon. We anticipate the following direct benefits to beneficiaries:

- A comprehensive and lifelong record of medications, tests, and interactions with the health system available to 37,000 beneficiaries (10%) by 2009 and to 300,000 current and former beneficiaries by 2011

- Avoidance of drug interactions (10% reduction by 2011)

- Avoidance of redundant testing (50% reduction by 2011)

- A sense of control and understanding of one's own health conditions and issues (as measured in user satisfaction survey)

- Reading-level appropriate guidance related to specific medical conditions (as measured by successful deployment/availability of guidance material through the HRB and, in out-years, by number of click requests for this information.)

- Warnings to HRB Oregon account holders/providers of patterns of medication use that may indicate an emerging health problem (as measured by successful integration of such a warning system into the HRB Oregon, and by the number of potential problems detected)

- Opportunities for beneficiaries to communicate with providers through secure messaging.

Description of Magnitude of the Transformation / System Change

Size and Scope

[6] http://www.oregon.gov/DHS/healthplan/data_pubs/enrollment/2007/0407/fchp0407.pdf-Preliminary data.

Oregon has the most mature Medicaid managed care program in the country, having collected detailed encounter data and pharmacy claims since 1994. HRB Oregon will add even more capabilities and data than have been previously been integrated for the patient, enabling the State to build on the success of its Oregon Health Plan.

The HRB Oregon project has the potential to transform delivery by saving significant system resources via 1) reducing the amount of missing information during the encounter, resulting in 2) dramatically lowering the unnecessary repetition of imaging studies, tests, and other services.

A recent analysis[7] estimated that the proposed project could achieve a potential annual savings of $0.3 million in year 2 of the grant with approximately 8% adoption (roughly 32,000 enrollees), and ultimately up to $3.0 million annually with adoption by 300,000 current and former beneficiaries in later years. This analysis was segmented by the general population, and applied to Medicaid enrollees only. No allowance was made to account for higher utilization by the population of Medicaid patients 65 and older or for a potential backlog of service needs and missing information by patients who have rotated off and on Medicaid coverage. For example, Oregon safety net patients use about one less visit per year when they are uninsured than when on Medicaid.[8] The analysis may therefore conservatively *underestimate* utilization savings opportunities by Medicaid enrollees. These estimates also focus exclusively on the Medicaid population; greater-than-stated savings could be achieved by including uninsured patients in HRB Oregon at very little added cost. Finally, the analysis does not include additional potential savings that result from certain other types of avoidable admissions, avoidable visits due to adverse drug events (ADEs), and reduced lengths-of-stay due to avoidable ADEs. In summary, the estimated annual savings of $3.0 million per year is a conservative one, based on factors that are known at this time.

Potential for Replication

HRB Oregon can be a model for developing patient-centered health records in both the private and public sector; an initial success with the Medicaid

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[7] Potential Benefits of Comprehensive HIT Implementation in Oregon. Draft report commissioned by the Office of Oregon Health Policy and Research and the Oregon Health Care Quality Corporation, June 2007.

[8] Our Community Health Information Network (OCHIN) analysis of Oregon safety net patient visits by payor, 2003 – 2007.

population could save money, improve care, and improve access to resources nation-wide.

HRB Oregon has the strong potential for replication for several reasons, some of which have already been noted:

1. HRB Oregon technologies will be made available under an open-source license, which means that HRB Oregon source code will be available to any other State for its Medicaid program.

2. HRB Oregon open-source technologies will also be available to serve other populations than the Medicaid population, including Medicare and other program populations.

3. HRB Oregon is being designed to open standards software that is vendor and application-neutral; other states or regions may adopt its modular architecture to deploy any combination of applications and services.

4. The HRB Oregon information system is designed to support multi-disciplinary teams for coordinating care (sometimes referred to as the "Medical Home" model of care), which are widely supported and valued by primary care practitioners and by those who work with Children with Special Health Care Needs (CSHCN). The HRB Oregon experience supporting this model of care will provide implementation experience that can be transferred to other states, becoming a valuable laboratory for integrating patient-centric technology in a way that supports team coordination efforts in Medicaid systems elsewhere.

Description of Sustainability of the Project

In most states, lack of upfront funding is the critical barrier to initiating information technology and exchange projects, and Oregon is no exception. Thus, the funding provided through the Medicaid Transformation Grant is critical to the success of this venture. Moreover, the Transformation Grant funding, combined with the recognized benefit of the project to the stakeholders involved, will represent a vote of confidence in the HRB Oregon approach and strategy that will enable the State to leverage additional resources to sustain HRB Oregon once it is up and running.

Such additional resources for future funding include the State of Oregon Department of Human Services (DHS), Division of Medical Assistance Programs (DMAP), fully-capitated Medicaid health plans (FCHPs), other commercial health plans, and large health systems. No additional grant support or Provider

assessments are anticipated. Instead, a broad spectrum of the health care community will participate in the long-term support and maintenance of the Oregon HRB.

The total amount required for annual ongoing support of the Oregon HRB is between $0.8 - $1.0M, based on an analysis of the expected volume of beneficiaries, participants, data, and users. The following table provides details of expected sources of funding for ongoing maintenance and support.

Sources of Sustainable Funding for Oregon HRB

Item	Source	Description	Estimated Annual Amount
1	DHS	DHS technology budget – 2.0 FTE in kind support	$180k
2	DMAP	20% of estimated net economic gain for the Medicaid system averaged over years 1 through 5	$275k
3	FCHPs	Subscriptions for value-based services on a membership basis ($0.75 per member).	$250k
4	Health Plans	Community support from major payors	$200k
5	Hospital/Health Systems	Community support from large health systems	$200k
		Total Estimated Annual Support	**$1,105k**

Evaluation Plan

Success for this initiative will be measured in terms of standard software and system development and deployment milestones, and by a project evaluation to be conducted by the Office for Oregon Health Policy and Research.

In 18 months it should be possible to complete development and implementation of HRB Oregon software for the State of Oregon, to purchase/lease/acquire appropriate hardware/infrastructure, to test and deploy HRB Oregon software on appropriate hardware, to successfully read two or more data feeds from existing data systems, and make personal health data available to a limited test group of Medicaid recipients.

Evaluation of success will be measured relative to the following standards and goals:

- The HRB Oregon Project anticipates 30,000 thousand registered users (one initial login) and 10,000 repeat users (two or more logins) by 2009, expanding to registration of approximately 300,000 users by 2011.
- An online survey will evaluate user satisfaction and concerns with the system once a significant user base is established.

- An analysis of proxy delegations and logins will be used to determine the extent of system use by clinicians and professional service providers.
- An analysis of secondary use permissions will determine the extent to which participants are willing to allow data collected by HRB Oregon to be used for research and public health purposes.

As required by section 1903(z)(3)(C) of the Social Security Act, annual reporting will include detailed reports on the specific uses to which funds were put in the process of developing and deploying the Health Record Bank of Oregon. Assessment of quality improvements will be conducted relative to the "Impact to Beneficiaries" measures stated in this application above. An estimate of cost savings resulting from the HRB implementation will be developed based on these and related quality measures, and the results of this analysis will be reported in the annual report for this grant, as required by section 1903(z)(3)(C).

Description of Project implementation Readiness

The State of Oregon's ability to successfully implement this project is based on the strength of two Oregon cultures and communities: (1) the innovative Oregon Medicaid Program (Oregon Health Plan) and its primary-care-focused, coordinated-care-oriented health culture, and (2) Oregon's innovative and flourishing open-source technology culture.

State Readiness

On the health care and Medicaid delivery side, Oregon is well positioned for this effort, with multiple managed care plans working as partners for the State Medicaid program. Already, penetration of electronic medical records (EMRs) among providers in Oregon is exceedingly high (59%). The Federally Qualified Health Centers (FQHCs) already share EMR infrastructure and information technology support. There is also a strong IPA (Independent Practice Association) infrastructure offering EMRs to physicians in numerous regions throughout the state. The State's Medicaid Management Information System (MMIS) infrastructure includes a well-supported data source in the Decision Surveillance Support and Utilization Review System (DSSURS), which provides demographics, eligibility, and claims information for enrollees.

Moreover, the Oregon health reform road map demonstrates a statewide commitment to information sharing and coordination and to the integration of behavioral health. Oregon's Medicaid program, also known as the Oregon Health Plan (OHP), has served as an innovative example of Medicaid reform for 20 years, and has provided health care coverage to over 1.5 million Oregonians. OHP has sought to provide low-income Oregonians access to an essential and

sufficient level of high-quality healthcare by (1) taking advantage of the efficiencies of a managed care delivery system; (2) placing an emphasis on preventive care, early intervention, and primary care; and (3) prioritizing health services. The combination of a managed care delivery system and the emphasis on clinical effectiveness and evidence-based medicine reflected in Oregon's Prioritized List of Healthcare Services has resulted in savings for the State and Federal government. OHP's Medicaid Management Information System has supported this success, been recognized for its effectiveness, and has the potential to provide information for the HRB within two to three years from the MMIS system replacement currently under development.

There is particular enthusiasm for the HRB approach among the State's executive branch and agencies. Oregon's Attorney General is one of the seven voting members of the State eHealth Alliance formed by the National Governors Association—a collaborative body that enables states to increase efficiency and effectiveness of the health information technology initiatives they develop. The state's Governor has issued a letter of endorsement of the HRB concept for the Medicaid population. More broadly, there exists a strong philosophical base for an HRB across the state. The Oregon Health Policy Commission issued a report with strong recommendations to enable an environment that fosters better adoption and exchange of health information. The Oregon Business Council, including the largest provider of Medicaid services, has spearheaded an effort to mobilize the community around health information exchange.

Technology Readiness

On the technology development side, Oregon is a hub of open-source activity, beginning with the Linux Foundation (formerly Open Source Development Labs) headquartered in Beaverton. The Oregon State University Open Source Lab (OSUOSL) has been established to facilitate open-source communities and to develop and distribute open-source software. The OSUOSL could potentially serve as a repository for HRB software source code.

This unique open-source technology culture of Oregon creates particular advantages for the HRB Oregon approach to ensuring the availability of health information. HRB Oregon is based on proven design principles by an Oregon nonprofit technology organization (Omnimedix Institute) with a record of delivering related PHR projects, including the national employer-driven Dossia PHR project. Because HRB Oregon is based on open-standards software, and because its source code will be released under an open-source license, HRB Oregon will be a collaborative effort in Oregon and, as noted earlier, will be available for replication both for other non-Medicaid populations in Oregon and the Northwest, and for other partners around the U.S.

Because of the tight financial constraints for State IT technology, HRB Oregon will be designed to require minimal start-up integration or long-term maintenance work from the existing state infrastructure. We would also emphasize that funds for this Medicaid Transformation Grant project will exclusively fund deployment of the HRB Oregon architecture, design, and implementation for Oregon Medicaid beneficiaries, while other potential funding sources would support the development and implementation of HRB Oregon technologies for other interested partners.

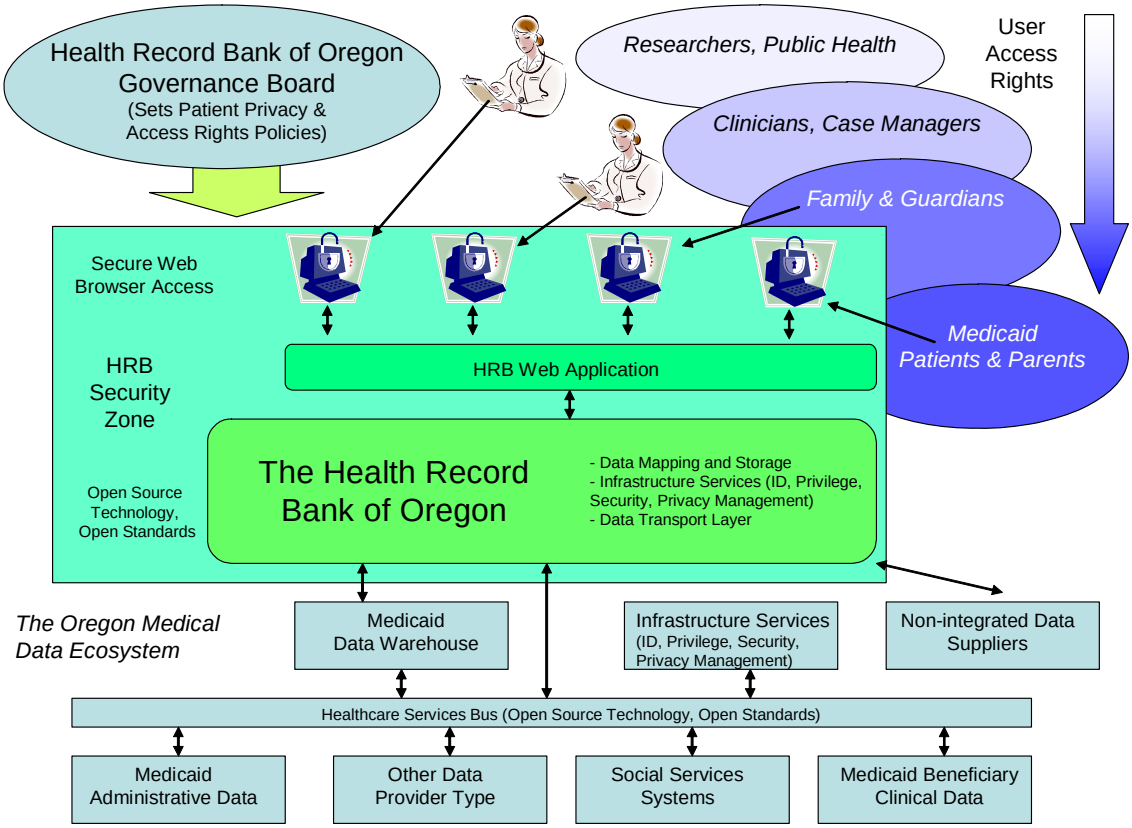
The State's Plan - Tasks & Timeline

The State's plan for creating the HRB Oregon is best described at this stage of development by the tasks and timeline charts below.

Health Record Bank of Oregon Project Time Line

Activity	**Quarter 1** Oct 07 Through Dec 07	**Quarter 2** Jan 08 Through Mar 08	**Quarter 3** Apr 08 Through Jun 08	**Quarter 4** Jul 08 Through Sep 08	**Quarter 5** Oct 08 Through Dec 08	**Quarter 6** Jan 09 Through Mar 09
DHS/OMAP	Preparation, vendor selection, contracting. Convene subject matter experts, liaisons, & workplans	Policy direction, Operations planning	Measurement plans		Commence Operations	Measurement
Implementation Team	Pre-implementation planning (non-contractors)	Development & unit testing (contractors)	Development & unit testing, applications, hosting environment	Install, integration testing	Implementation complete	Support & maintain systems
Outreach Team	Clinician & beneficiary outreach, requirements, design, incentives, value	Recruitment, training plan for clinicians, beneficiaries	Training materials for clinicians & beneficiaries	Clinician recruitment & training	Clinician & beneficiary training, education & adoption	Adoption support for clinicians & beneficiaries
Technology Advisory Team	Technical requirements, standards, interfaces, Convene CIOs	Interface engineering consortium, identity management strategies	Technical implementation, support & sustainability plans	Integration testing assistance & oversight	Implementation oversight	Support & maintenance oversight

In conclusion, the Health Record Bank of Oregon will improve the availability of information for patients and providers and thus promote continuity over time and across settings. It will save money and help care for Medicaid beneficiaries in ways that respect and enable the patient. But beyond efficiency and cost savings, HRB Oregon will help foster the kind of health care that all of us would want for our friends, our loved ones, and ourselves.



Oregon Medicaid HRB Transformation Grant Budget

DHS Internal Expenses

Total estimated funding for each year	2007-2008 (9 month)					2008-2009 (9 month)					Total
Personnel/fringe	FTE	Salary Funding	Total OPE Costs	Std S&S	Total Salary	FTE	Salary Funding	Total OPE Costs	Std S&S	Total Salary	
Principal Executive Manager F	0.5	$59,244	$23,695	$22,095	$105,034	0.25	$29,622	$11,848	$16,084	$57,554	$162,588
Information Sys Spec 8	0.5	$52,728	$22,351	$22,095	$97,174	0.25	$26,364	$11,176	$16,084	$53,624	$150,798
Information Sys Spec 7	0.5	$52,236	$22,249	$22,095	$96,580	0.25	$26,118	$11,125	$16,084	$53,327	$149,907
Information Sys Spec 7	0.5	$52,236	$22,249	$22,095	$96,580	0.25	$26,118	$11,125	$16,084	$53,327	$149,907
Operations & Policy Analyst 3	0.25	$24,366	$10,764	$16,084	$51,214	0.13	$12,183	$5,382	$13,080	$30,645	$81,859
Operations & Policy Analyst 3	0.25	$24,366	$10,764	$16,084	$51,214	0.13	$12,183	$5,382	$13,080	$30,645	$81,859
Office Specialist 2	0.5	$24,588	$16,546	$22,095	$63,229	0.25	$12,294	$8,273	$16,084	$36,651	$99,880
Principal Executive Manager E	0.5	$53,784	$22,568	$22,095	$98,447	0.25	$26,892	$11,285	$16,084	$54,261	$152,708
Operations & Policy Analyst 2	0.25	$21,036	$10,076	$16,084	$47,196	0.13	$10,518	$5,039	$13,080	$28,637	$75,833
Operations & Policy Analyst 2	0.25	$21,036	$10,076	$16,084	$47,196	0.13	$10,518	$5,039	$13,080	$28,637	$75,833
Public Affairs Specialist 2	0.5	$46,164	$20,997	$22,095	$89,256	0.25	$23,082	$10,499	$16,084	$49,665	$138,921
Total Personnel	**4.5**	**$ 431,784.00**	**$ 192,335.00**	**$ 219,001.00**	**$ 843,120.00**	**2.27**	**$ 215,892.00**	**$ 96,173.00**	**$ 164,908.00**	**$ 476,973.00**	**$ 1,320,093.00**
Supplies		**2007-2008 (12 Months)**					**2008-2009 (6 months)**				
Printing & Copying Costs (Training Materials)					$10,000					$50,000	$60,000
Miscellaneous Expenses (Long Distance Phone, Conference Calling, etc.)					$8,000					$8,000	$16,000
Total Supplies					**$18,000**					**$58,000**	$76,000
Total Internal Expenses											**1,396,093**

Contractual Expenses	**2007-2008 (12 Months)**				**2008-2009 (6 months)**				
Development Contract				**FFY 1**				**FFY 2**	**TOTAL**
Management				$268,000				$132,000	$400,000
HRB Oregon Development (data storage, web-application, APIs, etc.)				$1,212,700				$597,300	$1,810,000
Development Software				$20,000				$0	$20,000
Legal and Auditing (HIPAA Audit & SAS-70 Level II Compliance)				$92,460				$45,540	$138,000
Hardware (Servers, Co-location, Support)				$1,115,000				$0	$1,115,000
Beneficiary Outreach				$152,090				$74,910	$227,000
Interface Management				$96,480				$47,520	$144,000
Travel				$13,400				$6,600	$20,000
Materials				$53,600				$26,400	$80,000

Development Contract Total								**$3,023,730**				**$930,270**		**$3,954,000**
Evaluation and Research Contract														
Office for Oregon Health Policy and Research								$50,000				$100,000		
Total Evaluation Contract Expenses								**$50,000**				**$100,000**		**$150,000**
Estimated Contractual Expenses Sub-Total								**$3,073,730**				**$1,030,270**		**$4,104,000**
Estimated Total Expenses Oregon Bridges HRB Grant Proposal														$5,500,093