HCP #17241
Oregon Health Network (OHN) RHCPP Quarterly Data Report
Third Quarter 2009, July 1 – September 30, 2009

1. Project Contact and Coordination Information
   a. Identify the project leader(s) and respective business affiliations

The make-up of the current board is as follows:

Name	Organization
Deborah Ameen	Asante Health System
Andy Davidson	Oregon Association of Hospitals and Health Systems
Dick Gibson, MD	Legacy Health System
Dwight Heaney	St. Charles Foundation
Bridget Haggerty	Oregon Health and Science University
Michael Carr	Providence Health and Services
Art Hill	Blue Mountain Community College
Kim Hoffman	Oregon Health and Science University
D. Vaughn Holbrook	The Regence Group
Patrick O'Connor	Oregon Coast Community College
Rob Rizk	Good Shepherd Health Care System
Abby Sears	OCHIN
Christopher Tamarin	OR Economic and Community Development Dept.
Industry Council Representative	Vanessa McLaughlin, Edith Forge
At-Large Representative	Vacant

   b. Provide a complete address for postal delivery and the telephone, fax and email address for the responsible administrative official.

The OHN RHCP Project Coordinator is Kim Lamb. Her contact information is:
P.O. Box 277
Lake Oswego, Oregon 97034
Phone: 503-697-7294
Fax: 503-510-2191
Email: klamb@oregonhealthnet.org

   c. Identify the organization that is legally and financially responsible for the conduct of the activities supported by the award.

On February 2, 2009 the Oregon Association of Hospitals Research and Education Foundation (OREF) officially transferred legal and financial responsibility for OHN to the OHN Board of Directors. USAC was notified of the transfer on February 5, 2009.

   d. Explain how the project is being coordinated throughout the state or region.

The Project continues to be coordinated by the OHN staff, Board and its committees, who are continuing to work on organizational development of the OHN.

The OHN Board of Directors hired Kim Lamb on February 2, 2009 to the position of Executive Director and Project Coordinator. Cathy Britain continues in her role as Associate Project Coordinator.

OHN has also added the following positions to support in its outreach and operational efforts: Mary Erichsen, Business Development Manager; Kim Klupenger, Operations Director; Deborah Galiel, Office Manager; and Peter Trnavskis, IT Project Manager (contracted position).

2. Identify all health care facilities included in the network.
   a. Provide address (including county), zip code, Rural Urban Commuting Area (RUCA) code (including primary and secondary), six-digit census tract, and phone number for each health care facility participating in the network.

   b. For each participating institution, indicate whether it is:
      i. Public or non-public;
      ii. Not-for-profit or for-profit;
      iii. An eligible health care provider or ineligible health-care provider with an explanation of why the health care facility is eligible under section 254 of the 1996 Act and the Commission's rules or a description of the type of ineligible health care provider entity.

The information requested is provided in Attachment A: OHN Potential Sites (Updated 10/26/2009).

3. Network Narrative: In the first quarterly report following the completion of the competitive bidding process and the selection of vendors, the selected participant must submit an updated technical description of the communications network that it intends to implement, which takes into account the results its network design studies and negotiations with its vendors. This technical description should provide, where applicable:
   a. Brief description of the backbone network of the dedicated health care network, *e.g.*, MPLS network, carrier-provided VPN, a SONET ring;

   b. Explanation of how health care provider sites will connect to (or access) the network, including the access technologies/services and transmission speeds;

   c. Explanation of how and where the network will connect to a national backbone such as NLR or Internet2;

   d. Number of miles of fiber construction, and whether the fiber is buried or aerial;

   e. Special systems or services for network management or maintenance (if applicable) and where such systems reside or are based.

Network Narrative Response:

Prior to OHN, health facilities had two basic choices for data network connectivity. They could lease dedicated lines between pairs of locations they wished to connect or they could use the public Internet. Leased line solutions for data are similar to the earliest days of telephony before the advent of central office telephone switches, when conversations were possible only between two points on the opposite ends of a line. Once central office switches were introduced into telephony, customers only needed one line to the central office switch and could be connected there to any other customer without being required to arrange for lines to every point they wished to connect. OHN provides a similar solution for data networking in Oregon by requiring a high quality of service from each end user location to a common data switching location that all participants can connect to directly. That

single broadband connection then permits reliable broadband connectivity with every other end user location connected to the switch with guaranteed high quality of service.

This high quality broadband data connectivity is quite different from that of the public Internet. Because the Internet is not a single network but is the result of interconnecting a large number of independent networks throughout the world, no Internet Service Provider (ISP) can control the quality of service except on its own portion of the complex network. Consequently, all ISP contracts are "best efforts" contracts with no guarantees of the amount or quality of data transport provided. Since all of the major Internet connection points on the west coast of the United States are in California or Washington, almost all Oregon Internet traffic is routed out of state and goes through up to 20 "routers" (the data networking equivalent of telephone switches) before getting from one Oregon destination to another.

The lack of quality of service guarantees for Internet services has made the public Internet unsuitable for real-time medical applications, including telemedicine consults and real time medical education applications. (Health facilities are using the Internet for some of these applications, but the consistent complaints about lack of quality have severely limited the amount of use for these purposes.) The OHN makes it possible to obtain the economic advantages of Internet-like packet switched data transmission and the availability of connections to a very large number of sites, while retaining the quality of service that was previously available only on dedicated leased lines.

The basic OHN technical plan is simple: OHN arranges for its participants to contract with telecommunications vendors to provide a guaranteed amount of guaranteed quality data capacity, in increments of 10 or 100 megabits (Mb) per second, up to 1 gigabit (Gb) per second from each end user location to an Oregon data switching facility in Portland, the Northwest Access Exchange (NWAX), that permits connectivity with any other OHN end user site. NWAX also permits each end user site to connect with many other sites throughout Oregon that already exchange data traffic through NWAX. Thus, one connection from a rural clinic would be sufficient for it to reach any other medical facility in Oregon with high quality service. Even though different telecommunications vendors provide service to different facilities in different parts of the state, the guaranteed availability and quality of service on each link to the central switch will be sufficient to ensure that the end-to-end connection between any two end points will permit reliable real-time medical consultations and procedures.

The OHN Network Operations Center (NOC), operated under contract to OHN by EasyStreet Online Services of Beaverton, Oregon, is monitoring the network in real time to ensure that each telecommunications vendor meets the contractually committed quality of service guarantees on its portion of the network. OHN participants may contact the NOC staff to obtain assistance whenever they have technical network problems. The NOC staff will work with the telecom vendors involved to identify and isolate any problems and determine which telecom vendor is responsible. Without this NOC monitoring capability, individual sites with unsatisfactory service would not be able to prove to their telecom vendors that they were not getting the quality of service they contracted for.

The OHN technical plan also includes regional exchanges in Medford in southern Oregon and in Redmond in central Oregon. OHN Request for Proposals (RFP) # 1 resulted in exchanges being selected that offered "no cost to OHN" proposals. These regional exchanges will interconnect OHN traffic in their regions so that data traffic between two points in the region can be connected locally, without being transported to Portland and back. This is similar to local telephone traffic being switched locally, without requiring a long distance connection. This is quite different from Oregon Internet connections, which largely occur out of state, even when the two parties being connected are in the same community.

Connections between OHN and other Oregon networks, including the Department of Administrative Services (DAS) network and the Network for Education and Research in Oregon (NERO), Oregon's higher education network, are made at NWAX, the OHN Portland exchange facility, where these networks already interconnect. Currently, many education facilities and some rural clinics get their data connectivity through NERO. The DAS connectivity is important for reaching state government facilities and the many county health departments that get their data connectivity through the DAS network.

OHN does not specify whether the data transport services are provided by MPLS, SONET, Ethernet or other means. The end user interfaces are specified as Internet Protocol (IP) over Ethernet, with contractually guaranteed Quality of Service (QoS) with respect to service availability (99.99%), transit delay, packet loss and jitter (variability in time of arrival of data packets). How the carriers transport the data packets and meet their QoS commitments is up to each carrier and may differ from carrier to carrier. Each participant site contracts for the amount of capacity required, in increments of 10 or 100 Mbs, with the amount of capacity contractually committed (not an unenforceable "up to" amount). In other words, each OHN participant contracts for the amount of data transport capacity required at each end user site in the form of a virtual leased line with guaranteed quality of service. All data transport services for OHN are leased from telecommunications vendors. OHN is not constructing any fiber links, buried or aerial.

The OHN proposal to the FCC included Internet2 (I2) and/or National Lambda Rail (NLR) connections. The response to the OHN request for proposals for I2/NLR service resulted in price proposals that were too high for OHN to justify at this time. The value proposition to OHN participants was not evident. Rather than spend subsidy funds on services that would be difficult to sustain after the RHCPP, OHN determined not to contract for such services at this time. OHN did reserve the right to request new proposals at a later time and will be prepared to enter into a contract for such services later, provided that the prices and the value proposition for participants permitted those costs to be included in a sustainability plan. Since all points reachable through I2/NLR also can be reached through the public Internet, connections to those networks are not critical to OHN sustainability. OHN hopes that the value proposition of a national connection via I2 or NLR will increase and that the cost of such connection will decrease and looks forward to the time when a sustainable national connection can be made that is more reliable than current public Internet connectivity.

4. List of Connected Health Care Providers: Provide information below for all eligible and non-eligible health care provider sites that, as of the close of the most recent reporting period, are connected to the network and operational.

a. Health care provider site;

b. Eligible provider (Yes/No);

c. Type of network connection (*e.g.*, fiber, copper, wireless);

d. How connection is provided (*e.g.*, carrier-provided service; self-constructed; leased facility);

e. Service and/or speed of connection (*e.g.*, DS1, DS3, DSL, OC3, Metro Ethernet (10 Mbps);

f. Gateway to NLR, Internet2, or the Public Internet (Yes/No);

g. Site Equipment (*e.g.*, router, switch, SONET ADM, WDM), including manufacturer name and model number.

h. Provide a logical diagram or map of the network. (Included in Attachment B)

A list of connected sites as well as information requested in 5 and 6 below (with exceptions noted in blue) is included in Attachment B.

5. Identify the following non-recurring and recurring costs, where applicable shown both as budgeted and actually incurred for the applicable quarter and funding year to-date.

a. Network Design (not applicable)

b. Network Equipment, including engineering and installation (not applicable)

c. Infrastructure Deployment/Outside Plant (not applicable)
i. Engineering
ii. Construction

d. Internet2, NLR, or Public Internet Connection (not applicable)

e. Leased Facilities or Tariffed Services (not applicable)

f. Network Management, Maintenance, and Operation Costs (not captured elsewhere) (See Attachment B)

g. Other Non-Recurring and Recurring Costs (See Attachment B)

6. Describe how costs have been apportioned and the sources of the funds to pay them:
a. Explain how costs are identified, allocated among, and apportioned to both eligible and ineligible network participants.

See attachment B

Currently there are no ineligible sites on the network.

b. Describe the source of funds from:
i. Eligible Pilot Program network participants
ii. Ineligible Pilot Program network participants (None at this time)

c. Show contributions from all other sources (*e.g.*, local, state, and federal sources, and other grants).

i. Identify source of financial support and anticipated revenues that is paying for costs not covered by the fund and by Pilot Program participants.
ii. Identify the respective amounts and remaining time for such assistance.

d. Explain how the selected participant's minimum 15 percent contribution is helping to achieve both the selected participant's identified goals and objectives and the overarching goals of the Pilot Program.

Because the sites are so newly connected we have not asked them to submit reports for this quarter, nor does OHN have data to report this quarter.

For the remainder of the requested information please see Attachment B.

7. Identify any technical or non-technical requirements or procedures necessary for ineligible

entities to connect to the participant's network.

At this time OHN does not anticipate connecting any ineligible entities to the network. OHN is however, looking for ways to provide services to healthcare entities that do not qualify for the RHCPP under a separate network structure.

8. Provide an update on the project management plan, detailing:

a. The project's current leadership and management structure and any changes to the management structure since the last data report;

b. In the first quarterly report, the selected applicant should provide a detailed project plan and schedule. The schedule must provide a list of key project deliverables or tasks, and their anticipated completion dates. Among the deliverables, participants must indicate the dates when each health care provider site is expected to be connected to the network *and operational*. Subsequent quarterly reports should identify which project deliverables, scheduled for the previous quarter, were met, and which were not met. In the event a project deliverable is not achieved, or the work and deliverables deviate from the work plan, the selected participant must provide an explanation.

OHN has experienced growth in its staff/internal infrastructure and Board.

Staff: Three new staff positions were added in this last quarter, and one full-time contractor position:

- *Operations Director:* Kim Klupenger was hired to oversee all core administration, operations, human resources and financial aspects of the organization.
- *Business Development Manager*: Mary Erichsen was hired on to lead all business development strategy and outreach as well as the design and implementation of an on-going customer service program.
- *Office Manager*: Formerly a part-time contract position, Deborah Galiel was hired on as a permanent staff position to assist in all bookkeeping, invoice processing and on-going staff and board support.
- *IT Project Manager*: Peter Trvanskis was hired as a full-time, contractor to manage the final installation of the network operations center (NOC), to work with sites and the business development manager and associate project manager to help sites in network design, as well as to lead RFP review and vendor contracting activities.

Board: One spot on the board of directors was set-aside for one member of the industry council to fill for a one-year term. The industry council charter and initial membership were completed in this last quarter, and a council chair was selected to serve on the board for its one-year term.

This seat is now chaired/held by Vanessa McLaughlin. Ms. McLaughlin has spent much of her career standing out on the ledge encouraging others and businesses to step forward to see the view of things to come. Over the past 25 years of delivering strong messages to health care systems and educational organizations through usage of technology she has become a recognized leader

in the development and implementation of rural and frontier health care systems thru telemedicine and distance education utilizing video conferencing technology.

Ms. McLaughlin's leadership skills in remote health care delivery were initially developed following her Graduate Fellowship (GHAT) at the Veteran's Administration Health Care System. She was sought out to develop the VA's Telemedicine Program in the Pacific Northwest. As a result, Ms. McLaughlin was charged by VA National Leadership to develop a series of Telemedicine 101 programs to train providers and staff how to engage in a remote health care consult.

Ms. McLaughlin has served as a member of the American Telemedicine Association Board of Directors. As past Chairman of Industry Council during the same period, under her leadership the organization increased its membership by 30% and developed an Advocacy Program that reached across the organization to teach Advocacy 101 to leadership within the organization. Currently Ms. McLaughlin serves on the board of directors for the Oregon Health Network and the Vancouver School District Foundation.

9. Provide detail on whether network is or will become self sustaining. Selected participants should provide an explanation of how network is self sustaining.

OHN successfully completed negotiations of an acceptable sustainability plan with FCC and USAC in April 2009, and are awaiting formal notification.

Following is an executive summary of the accepted OHN sustainability plan. The full plan is included in this report as Attachment C1 and C2.

Executive Summary

- After the conclusion of the Rural Health Care Pilot Program (RHCPP), OHN participants will continue to pay participation fees to support OHN operations, including common network elements not included in telecommunications vendor charges.
- OHN participants will sign participation agreements that include a statement of their intention to continue to participate after the RHCPP is concluded.
- Post RHCPP, OHN participants will continue to be customers of telecommunications vendors for transport links from their sites to the OHN interconnection location. Urban participants will pay their full costs and eligible rural participants will pay the costs not subsidized by the regular Universal Service Fund (USF) rural health care program.
- RHCPP telecommunications vendors paid from RHCPP funds for construction charges to reach rural sites will be required to offer contract renewal options for time periods after the RHCPP.
- OHN will provide centralized administrative support for eligible rural sites to participate in the regular USF rural health care program. New competitive procurements will determine whether more cost-effective solutions than those provided by renewal options are available.
- OHN will provide applications support for participants to ensure the value proposition for their continued participation.
- Ineligible parties will pay 100% of their costs for connecting to OHN exchanges and will pay 100% of the charges for their use of the OHN network operations center (NOC). No transport or NOC services paid for with USAC subsidy will be available to ineligible parties.

10. Provide detail on how the supported network has advanced telemedicine benefits:

a. Explain how the supported network has achieved the goals and objectives outlined in selected participant's Pilot Program application;

b. Explain how the supported network has brought the benefits of innovative telehealth and, in particular, telemedicine services to those areas of the country where the need for those benefits is most acute;

c. Explain how the supported network has allowed patients access to critically needed medical specialists in a variety of practices without leaving their homes or communities;

d. Explain how the supported network has allowed health care providers access to government research institutions, and/or academic, public, and private health care institutions that are repositories of medical expertise and information;

e. Explain how the supported network has allowed health care professional to monitor critically ill patients at multiple locations around the clock, provide access to advanced applications in continuing education and research, and/or enhanced the health care community's ability to provide a rapid and coordinated response in the event of a national crisis.

The OHN does not have enough connected participants to actually discuss how advanced telemedicine benefits have been achieved. The current participants have been connected for only 30-60 days. We anticipate being able to report on benefits for the RFP #1 participants in the next quarterly report.

OHN is working with its partners to develop a plan to enhance the telemedicine benefits for our participants. Additionally the OHN Applications Committee is working to inventory all current and planned telemedicine facilities on the network and with the Technical Committee assure that the network architecture is robust enough to handle all the current and planned usage.

OHN partners, the Telehealth Alliance of Oregon and the Northwest Telehealth Resource Center are planning for and conducting workshops and webinars for current and future participants on telehealth. Topics include:

- Legal and regulatory issues such as licensure, credentialing and privileging, and liability and risk management
- Reimbursement for telemedicine services (The Telehealth Alliance of Oregon was successful in its efforts to pass SB 24 – a bill requiring health benefit plans to reimburse for telemedicine services- during the recent 2009 session.)
- Planning and developing a telemedicine program
- Selection of equipment

Additionally plans are underway to assess the telemedicine service needs of OHN participants.

Plans are also being implemented to work with our partners at the state's Dept of Human Services and OCHIN (Our Community Health Information Network) and software vendors to encourage our participants to implement EHR software that is interoperable and meets the standards of the Certification Commission for Healthcare Information Technology (CCHIT).

OHN will submit additional documentation of these plans in the next quarterly report.

11. Provide detail on how the supported network has complied with HHS health IT initiatives:

a. Explain how the supported network has used health IT systems and products that meet interoperability standards recognized by the HHS Secretary;

b. Explain how the supported network has used health IT products certified by the Certification Commission for Healthcare Information Technology;

In the 2009 legislative session, the Health Information Technology Oversight Council (HITOC) was created by the passage of HB 2009 within the Oregon Health Authority. It is charged with developing a statewide strategic plan for electronic health information exchange, coordinating public and private efforts to increase adoption of electronic health records, setting technology standards, ensuring privacy and security controls, and creating a sustainable business plan to support meaningful use of health information technology to lower costs and improve quality of care.

The Council is comprised of eleven individuals appointed by Governor Ted Kulongoski, who will bring the diverse experience outlined by the legislation in health information technology as well as in health care delivery, policy and research. They will represent consumer and business perspectives, public and private sectors, and the geographic and demographic differences of Oregon's health care providers and the patients they serve. The Oregon Health Network (OHN) has two board members serving on this Council to insure that activities are coordinated and that both OHN and HITOC are meeting the interoperability standards and certification requirements recognized by the HHS Secretary and the Certification Commission for Healthcare Information Technology.

Additionally, OHN has formed an OHN Application HIT/HIE Sub-Committee chaired by one of the board members serving on HITOC. This committee will oversee and coordinate specific OHN activities related to HIT and HIE, and will insure that OHN's goals and objectives in the area of HIT and HIE are in alignment with HHs health initiatives and with HITOC.

c. Explain how the supported network has supported the Nationwide Health Information Network (NHIN) architecture by coordinating activities with organizations performing NHIN trial implementations;

The Oregon Health Network has not embarked on this project as yet. The plan for the Network's connection to NHIN is through either I2 or NLR. The Technology Committee believed that the connection bids and membership fees were too high to warrant spending the funds for the connection until all of the eligible participants had joined the network. The connection will be addressed before June 30, 2010. At the time the connection is made the Technology Committee will work with other interested RHCPP organizations to conduct trials. In addition, OHN's representatives on HITOC will insure that the connection to NHIN is included in discussions and plans for Oregon's HIE efforts.

d. Explain how the supported network has used resources available at HHS's Agency for

Healthcare Research and Quality (AHRQ) National Resource Center for Health Information Technology;

See response to 11a and b above.

e. Explain how the selected participant has educated themselves concerning the Pandemic and All Hazards Preparedness Act and coordinated with the HHS Assistant Secretary for Public Response as a resource for telehealth inventory and for the implementation of other preparedness and response initiatives; and

f. Explain how the supported network has used resources available through HHS's Centers for Disease Control and Prevention (CDC) Public Health Information Network (PHIN) to facilitate interoperability with public health and emergency organizations.

The OHN Applications Public Safety and Emergency Preparedness Sub-Committee is being formed and will be comprised of representatives from Oregon's Public Health agency, county public , emergency management, and others with expertise in public health and public safety. This committee is charged with:

- Developing and implementing a plan to educate OHN and its participants concerning the Pandemic and All Hazards Preparedness Act
- Developing and implementing a plan to coordinate with the HHS Assistant Secretary for Public Response as a resource for telehealth inventory and for implementation of other preparedness and response initiatives
- Developing and implementing a plan to utilize HHS's CDC and PHIN to facilitate interoperability with public health and emergency organizations.

This sub-committee will also coordinate with HITOC through OHN's representatives on that council to participate in and take advantage of the telehealth inventory project currently underway by HITOC. The initial meeting of the OHN Application Public Safety and Emergency Management Sub-Committee is planned within the next month.

12. Explain how the selected participants coordinated in the use of their health care networks with the Department of Health and Human Services (HHS) and, in particular, with its Centers for Disease Control and Prevention (CDC) in instances of national, regional, or local public health emergencies (*e.g.*, pandemics, bioterrorism). In such instances, where feasible, explain how selected participants provided access to their supported networks to HHS, including CDC, and other public health officials.

There are two areas that OHN has focused upon to meet these core goals of the RHCPP:

1. Development of an Applications Committee to oversee the trends and leverage opportunities to better address coordinated use of the Oregon Health Network
2. Discovery of internal systems solutions to provide a portal for HHS and CDC etc. to post and distribute national alerts through the OHN.

The OHN Applications Committee Oversight Committee was formalized and chairs/members selected to coordinate and oversee the work of the four OHN Applications Sub-Committees

to insure that sub-committee work is being effectively accomplished to meet the goals of the RHCPP and OHN.

- *Telehealth*
  This sub-committee will focus on implementation and use of telehealth applications to ensure that the OHN can support the delivery of health care services to Oregonians by meeting quality of service and technical requirements needed to effectively run telehealth applications and equipment across the network.

- *Health Alliance* (Allied Health/Long-Distance Education)
  This sub-committee will focus on implementation and use of allied health, distance learning, and e-course health care education applications to ensure that the OHN can support the delivery of health care education. The sub-committee will encourage collaboration among the allied health core constituents, including offerings of the state's higher educational institutions, community colleges, and others involved in the delivery of distant health education.

- EHR/HIT/HIE
  This sub-committee will focus on implementation and use of electronic health records, the exchange of patient health information, and consumer access to patient health records. This sub-committee will make recommendations to the OHN on technical and interoperability requirements that must be met in order to satisfy FCC Order 07-198 Rural Health Care Pilot Program (RHCPP) and Health and Human Services (HHS) Health Information Technology Initiatives.

- *Public Safety and Emergency Management*
  This sub-committee will focus on implementation and use of services across the OHN related to emergency management and public safety. This sub-committee will make recommendations to the OHN on technical and interoperability requirements that must be met in order to satisfy FCC Order 07-198 Rural Health Care Pilot Program (RHCPP) and Health and Human Services (HHS) Health Information Technology Initiatives.

Secondly, within the development of OHN's core information technology workflow and infrastructure necessary to serve the organization's administration purposes, the board and committees and sites and vendors (through web-based portals), OHN staff are in the process of discovering options to develop a unique emergency response web-based MS Sharepoint portal. These discussions are in their preliminary phases, but look promising.