



February 2012, Vol. 1, No. 1

SIXTH ANNUAL  
**Redwood MedNet  
 Health Information  
 Exchange Conference**  
 July 2012, Sonoma County  
 For sponsor prospectus contact  
[tlaino@redwoodmednet.org](mailto:tlaino@redwoodmednet.org)

**Calendar**

February 21 to 23 - *FHA Demonstration, HIMSS Symposium, Las Vegas, NV*  
February 23 - *Board of Directors Meeting, Ukiah, CA*  
February 28 - *Operations Committee, by conference call*

## RAPID EXPANSION OF HIE SERVICES IN 2012

**Direct Messaging**

In May 2011 Redwood MedNet received a \$98,000 Direct Messaging Grant from Cal eConnect. Redwood MedNet is now testing the new certificate secured email service between two facilities in Fort Bragg.

**HIMSS Demonstration**

February 21 through 23 Redwood MedNet will demonstrate the S&I Framework Provider Directory service at HIMSS in Las Vegas.

**HIE Expansion Grant**

In June 2011 Redwood MedNet received a \$476,000 HIE Expansion Grant from Cal eConnect. The 18 month project runs through 2012 and features 80 separate deliverables at 21 healthcare facilities. The table (*below*) details 24 project deliverables currently in the building or testing phase.

facility	task(s)
AMC	Send lab orders, receive lab results, send care summaries
AVHC	Send IZ reports to CAIR
HDH	Send lab results to 3 new sites
HPC	Send IZ reports to CAIR, med history to RWMN
LCC	Install HIE gateway, send lab results
MCC	Send orders to three labs
PDH	Install HIE gateway, send lab results
PVH	Send lab results to new site
SRMH	Install HIE gateway, send lab results to two sites
SVCHC	Install HIE gateway, receive lab results
SVH	Send lab orders, receive lab results

**NwHIN Exchange**

In October 2011 Redwood MedNet was invited by the Veterans Administration to onboard with the Nationwide Health Information Network (NwHIN). In November 2011 the Redwood MedNet BOD signed the federal DURSA. In December 2011 the NwHIN Coordinating Committee approved the Redwood MedNet application. Currently in the testing phase of the process, Redwood MedNet expects to begin testing data exchange with the VA by the end of March 2012.

**It's Not All Grants**

Redwood MedNet has standard HIE contracts with three separate hospitals to help build interoperability services in preparation for Stage Two Meaningful Use attestation. If your facility needs more HIE services, send an inquiry to [tlaino@redwoodmednet.org](mailto:tlaino@redwoodmednet.org).

**PARTICIPANTS**

**IN PRODUCTION**

- Alliance Medical Center
- Alexander Valley Healthcare
- Anderson Valley Health Center
- Andrew Coren, MD
- Cloverdale Healthcare
- Healdsburg District Hospital
- Healdsburg Primary Care
- Hunter Laboratories
- Long Valley Health Center
- Marin Specialty Care
- Mendocino Coast Clinics
- Mendocino Coast District Hospital
- Marin Sonoma IPA
- Prima Medical Group
- Quest Diagnostics
- Richard Ganz, MD
- Robert Rushton, MD
- Santa Rosa Endocrinology
- Santa Rosa Imaging
- Sonoma Valley Hospital

**BUILDING / TESTING**

- Richard Andolsen, MD
- Brookwood Internal Medical Assoc. LabCorp
- Lucerne Community Clinic
- Northern California Medical Assoc. Palm Drive Hospital
- Petaluma Valley Hospital
- Santa Rosa Memorial Hospital
- Sherwood Oaks Health Center
- Sonoma Valley Comm. Health Center
- Steven Vargas, MD
- West Marin Medical Center

**IN PLANNING**

- Digestive Health Consultants
- Jerold Phelps Community Hospital
- Mendocino Family Care
- North Coast Family Health Center
- Rideout Memorial Hospital
- Solano County Public Health
- Sonoma County Public Health



## “MY EHR HAS HIE BUILT INTO IT.”

The 2009 economic stimulus from the Obama Administration is investing \$30 billion in incentives for hospitals and outpatient practices to install electronic health record (EHR) software. These incentives help healthcare facilities meet some of the capital expense of installing EHR. However, less than 2% of the incentives (about \$600 million) are available to establish healthcare information exchange (HIE) between EHRs. This is an unfortunate underinvestment because installing EHRs is necessary but not sufficient to establish interoperability of electronic data between EHRs.<sup>1</sup>

There is also a sales push by some EHR vendors to sell their own HIE tools as an add on to their EHR. This introduces confusion at the healthcare facility level, typified by an EHR customer who naively says, “My EHR has HIE built into it.”

All EHRs have some HIE tools “built in” because an EHR by definition imports and exports electronic data, which is one of the essential tasks performed by HIE. But full health data interoperability is more complicated than simply moving health information back and forth between trading partners. requires interface and network tools that are more sophisticated and flexible than those that are typically present within a single proprietary EHR - including those that have “HIE built in.”

EHRs have operating costs as do all software tools. Interoperability between EHRs has discrete costs of its own that require economy of scale to keep operational business expenses at an affordable level. These distinguishing factors need to be better understood for affordable health data networks to become ubiquitous and sustainable.

What are the costs and values of interoperability between one healthcare facility with EHR and their trading partners? In 2004 Partners Healthcare in Massachusetts examined transactions “between providers (hospitals and medical group practices) and other providers, and between providers and stakeholders with whom they most commonly exchange information: independent laboratories, radiology centers, pharmacies, payers, and public health departments.” The study found a compelling business case for national implementation of fully standardized HIE with interoperability.<sup>2</sup> The study differentiated between mature, fully standardized HIE and a non-standardized predecessor stage of HIE services in which chaotic implementation of EHRs with non-standardized HIE services struggles with heterogeneous local data standards that create complexity and costs for interoperability.

Unfortunately, this non-standardized predecessor stage describes the current inadequate interoperability among EHRs, especially an EHR with “HIE built into it.”

EHR interfaces are small utility software tools. A typical disclaimer in an interface purchase contract from a software vendor reads: “The fee you are paying to <vendor> does not cover the fee for the other half of the interface. Systems interfaces are a two-way process; you are responsible for ensuring that the other side is contractually covered before any interfacing can proceed.” Even an EHR with “HIE built into it” must build the other side of each interface to each external data source. Once built, the network must be monitored to ensure that all clinical messages are delivered promptly. An EHR may include tools for building individual interfaces, but it is unlikely to have network data monitoring tools.

Interfaces cost between \$10,000 and \$50,000 to build, depending on the complexity of the data, on the network security and transport requirements for the data in transit, and on recurring interface costs imposed by the software vendor at each end of the interface. A typical outpatient practice requires 6 to 12 interfaces to minimize the amount of hand entry of data into the EHR.

*Continued on Page 3*



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Assume a practice needs eight external interfaces at \$5,000 each purchased from the EHR vendor, and a further \$5,000 each to install. The cost is \$40,000 for the interfaces, and \$40,000 for the installation, a total of \$80,000 per practice. A solo practice is not likely to cost-justify \$80,000 in interfaces for one physician. Being prudent, the solo practice will purchase two interfaces (\$20,000), one each for their two highest volume trading partners; then the solo practice will scan or hand enter all other clinical data into the EHR, annoyed that the lack of affordable interfaces reduces the effectiveness and efficiency of the EHR. An eight provider group practice will likely consider \$10,000 per physician for interfaces a reasonable start-up cost.

The EHR vendor will levy 20% of the interface purchase as an annual maintenance fee; thus an interface purchase of \$40,000 creates a recurring annual support fee of \$8,000 per year paid to the EHR vendor. The other end of each interface must also be installed. If the other end of an interface is a hospital, the hospital is likely to pay for EHR interfaces only for their most profitable customers. In this case, the 8 provider group practice will qualify for a free interface from the hospital but the solo practice will not, raising the interface cost by perhaps \$5,000 at the solo practice. This process will repeat for all eight

interfaces so that the group practice will pay \$80,000 for 8 interfaces installed, with \$8,000 per year in maintenance, while the solo provider will find an interface bill over \$100,000, will decide to forego most of the interfaces, and will tolerate a less efficient EHR.

An HIE builds interfaces and provides network monitoring for data travelling on the interfaces. An EHR “with an HIE built into it” may be able to build interfaces, but this presupposes that the practice has the IT staff resource to build and maintain interfaces. A group practice is may have this level of IT staffing, but an individual practice is unlikely to have a staff member available to build and maintain interfaces. This service - building and maintaining a network of interfaces - is the specialty task performed by an HIE, typically for less cost than a practice can do alone. Two EHR vendors that offer “EHR with HIE built in” are eClinicalWorks and Epic. Small practices will likely find these built in interface tools unaffordable, while large group practices will be annoyed by the hidden costs of external interfaces and network monitoring. These hidden staffing costs are impediments to interoperability in current EHRs.

Of course Redwood MedNet has a partisan interest in provisioning HIE services. As a business, the primary commercial activities of Redwood MedNet are: first,

building and operating clinical data interfaces; and second, expert level management of network services, such as secure VPN tunnels or other transport solutions. As an HIE, Redwood MedNet does not compete against practices or hospitals that wish to invest in their own HIE interface tools; rather, Redwood MedNet manages one or both sides of interface needs at any healthcare facility. A facility in with an EHR that “has HIE built into it” should ask Redwood MedNet how to minimize the interface and network costs the EHR vendor forgot to mention.

Redwood MedNet currently maintains 24 interfaces in production, connecting 260 physicians at hospitals, practices, laboratories, imaging centers and long term care. Current interfaces connect to EHR packages such as Epic, Meditech, McKesson, NextGen, e-MDs, Allscripts, HMS and more. In 2012 Redwood MedNet is building approximately 80 new interfaces for less than \$10,000 each. In the next issue of the newsletter Redwood MedNet will explain how an HIE network can save costs in ways that are not available to a practice merely using “EHR with HIE built into it.”

<sup>1</sup> Penfield, Anderson, et al., “Toward Health Information Liquidity,” Booz Allen Hamilton, Rockville, MD, 2009.

<sup>2</sup> Pan, Johnson, et al., “The Value of Healthcare Information Exchange and Interoperability,” Partners Healthcare, Wellesley, MA, 2004.



# A SHORT HISTORY OF REDWOOD MEDNET

## Incorporating Redwood MedNet

Redwood MedNet began in 2004 as an ad hoc Steering Committee of volunteers from Mendocino Lake Medical Society, Mendocino County Public Health and Alliance for Rural Community Health. The Steering Committee met monthly in the office of Robert Faulk, Executive Director of the Medical Society. The Committee adopted health information exchange (HIE) as a goal. In April 2005 the meetings moved to Ukiah Valley Medical Center and selected the name “Redwood MedNet.” The Foundation for Medical Care of Lake and Mendocino Counties donated start up funds. Redwood MedNet was incorporated as a nonprofit public benefit corporation in Ukiah, California in August 2005.

## Grant Funding

The startup phase of Redwood MedNet, from 2005 to 2011, was funded by grants totaling \$2 million from generous donors:

*Foundation for Medical Care of Lake and Mendocino Counties*

*Blue Shield of California Foundation*

*California HealthCare Foundation*

*UnitedHealthcare/ PacificCare*

*Healthcare Foundation of Northern*

*Sonoma County*

*Cal eConnect*

## Completing the Startup Phase

Redwood MedNet commercial HIE services began with the delivery of electronic laboratory test results in April 2008. The data service now includes narrative reports, medication history and immunization reporting to the California Immunization Registry (CAIR). HIE services were provided at no charge to participants through 2011. Redwood MedNet now charges a subscription fee for participant access to the services.

### **Checklist for Joining Redwood MedNet**

- 1 Discovery process details policy, technology & workflow requirements, and itemizes costs
- 2 Participant signs letter of intent (or similar document)
- 3 Participant signs BAA and Network Participation Agreements
- 4 Additional agreements developed as needed
- 5 HIE services developed
- 6 User acceptance testing
- 7 User training (as needed)
- 8 HIE service go-live



RWMN  
ESTABLISHED 2005

## **BOARD OF DIRECTORS**

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*CMIO*  
*Marin General Hospital*  
*Greenbrae*

## **STAFF**

**Will Ross**  
*Project Manager*  
[wross@redwoodmednet.org](mailto:wross@redwoodmednet.org)  
707.462.6369 x512

**Tanya Laino**  
*Planning Coordinator*  
[tlaino@redwoodmednet.org](mailto:tlaino@redwoodmednet.org)  
707.462.6369 x511

**Jeff King**  
*System Engineer*  
[jking@redwoodmednet.org](mailto:jking@redwoodmednet.org)  
707.462.6369 x507

**Janna Ostoya, MS**  
*System Engineer*  
[jostoya@redwoodmednet.org](mailto:jostoya@redwoodmednet.org)  
707.462.6369 x508



Demonstration by Redwood MedNet and San Diego Beacon Community,  
 Interoperability Showcase at HIMSS 2012 in Las Vegas, NV  
 February 21 to 23, 2012

Putting the **I** in HealthIT<sup>SM</sup>

## Use Provider Directory to Discover Direct Address and Digital Certificate



Here's an authorization for you to send my care summary to Dr. Petty. He works at Sonoma State University Health Center.

Scotty



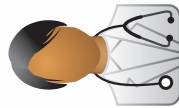
Thanks, Scotty. I'll also send your care summary to Dr. Petty at SSU Health Center.



Dr. Petty

Discover Endpoint Information

Dr. Petty is not in my address book. I'll search the provider directory for him.



Query the RWMN Provider Directory (PD) for Dr. Petty @ Sonoma State Health Center.  
 PD returns Dr. Petty Direct Address.  
 "tpetty@direct.ssuhealth.com"

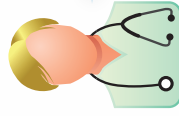
Retrieve Digital Certificate

Now I'll use Dr. Petty's direct address to look up his public key to encrypt the care summary.



Send Secure Message

Now I'll send Scotty's care summary to Dr. Petty via a secure HIPAA compliant email.



Oh look, another care summary for Scotty!