Making Clinical Data Agile

California State Senate Committee on Health

March 13, 2009

Will Ross, Project Manager

Redwood MedNet HIE

Health information exchange (HIE)

Located two hours north of San Francisco

Rural region

6,000 square miles

200,000 population

6 rural hospitals, 247 beds

8 FQHCs, 12 RHCs, 3 IHS clinics

Redwood MedNet Directors

Mark Apfel, MD -- *Medical Director, FQHC*

Peter Cho, MD -- *Family Practice*

Jed Gladstein, JD -- *Attorney*

Carl Henning, MD -- *Orthopedic Surgeon*

Jeff King -- *Executive Director, FQHC*

Tom Reidenbach, PharmD -- *Independent Pharmacy*

Robert Rushton, MD -- *Family Practice*

Marvin Trotter, MD -- *County Health Officer*

Mark Turner -- *Rural Hospital IT Manager*

Redwood MedNet Startup

July 2004 -- Physicians technology steering committee

May 2005 -- Connecting for Health Record Locator Service

August 2005 -- Incorporate Redwood MedNet as 501(c)(3)

October 2005 -- Grant from Blue Shield of California Foundation

November 2005 -- Contract with ONC for NHIN Prototype Architecture project

Redwood MedNet Funders

blue shield of california foundation

UnitedHealthcare®

PacifiCare®

CALIFORNIA HEALTHCARE FOUNDATION

MENDOCINO-LAKE FOUNDATION FOR MEDICAL CARE

Redwood MedNet Plan

Sustainability model in fourth iteration

Current model is a "Community Health Data Co-op" (like an agricultural producer's co-op)

All users pay a little to support the community service

Break even volume requires 400 clinicians, at $12/clinician/month + transactional micropayments

Redwood MedNet Approach

1 -- Connecting for Health Common Framework

2 -- Make clinical data agile, with or without EHR

3 -- Develop open source software for HIE

Magical Thinking?

MAGICAL THINKING?

Health Information Technology: A Few Years Of Magical Thinking?

Technology and standards alone will not lead to health IT adoption, let alone transform health care.

by Carol C. Diamond and Clay Shirky

ABSTRACT: One of the biggest obstacles to expanding the use of information technology (IT) in health care may be the current narrow focus on how to stimulate its adoption. The challenge of thinking of IT as a tool to improve quality requires serious attention to transforming the U.S. health care system as a whole, rather than simply computerizing the current setup. Proponents of health IT must resist "magical thinking," such as the notion that technology will transform our broken system, absent integrated work on policy or incentives. The alternative route to transforming the system sets all of its sights on the destination. [*Health Affairs* 27, no. 5 (2008): w383–w390 (published online 19 August 2008; 10.1377/hlthaff.27.5.w383)]

ONE OF THE BIGGEST OBSTACLES TO EXPANDING the use of information technology (IT) in health care may be, ironically, the current narrow focus on how to stimulate its adoption. IT is a tool, not a goal. Success should not be measured by the number of hospitals with computerized order entry systems or patients with electronic personal health records. Success is when clinical outcomes improve. Success is when everyone can learn which methods and treatments work, and which don't, in days instead of decades.

The challenge of thinking of health IT as a tool to improve quality requires serious attention to transforming the U.S. health care system as a whole, rather than simply computerizing the current setup. Indeed, the literature on computerization, stretching back to the 1980s, is unambiguously clear on this point: computers are amplifiers. If you computerize an inefficient system, you will simply make it inefficient, faster. IT can contribute to improving care only when underlying system processes are transformed at the same time.

Proponents of health IT must resist "magical thinking," such as the notion that

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DOI 10.1377/hlthaff.27.5.w383

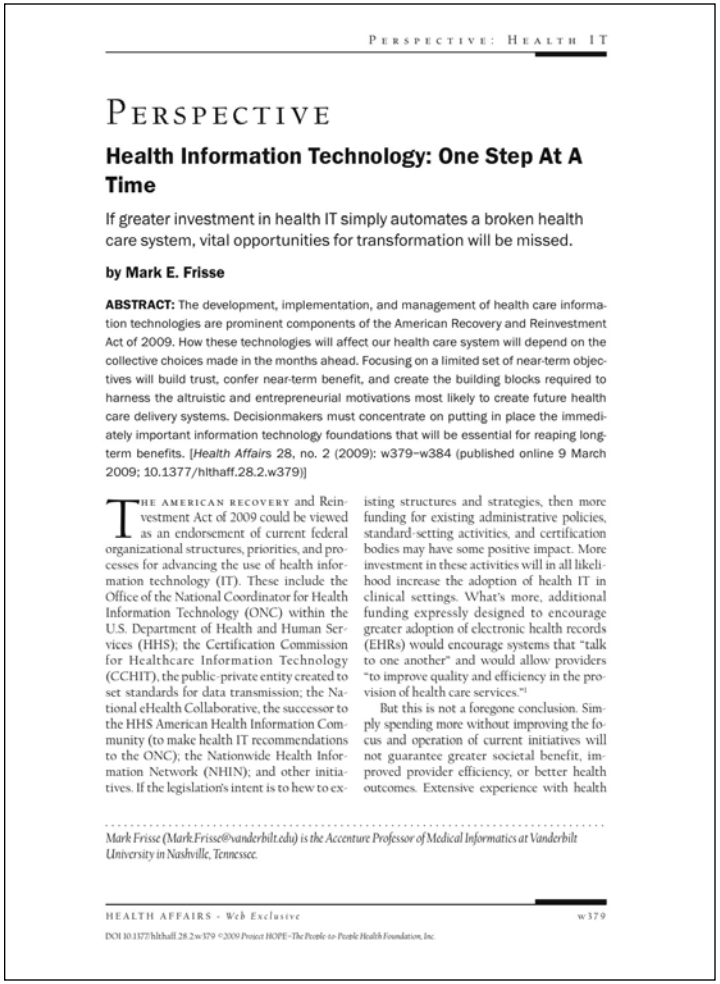
Technology and standards alone will not lead to health IT adoption, let alone transform health care.

Diamond & Shirky,

August 2008

Health Affairs

One Step At A Time



PERSPECTIVE: HEALTH IT

PERSPECTIVE

Health Information Technology: One Step At A Time

If greater investment in health IT simply automates a broken health care system, vital opportunities for transformation will be missed.

by Mark E. Frisse

ABSTRACT: The development, implementation, and management of health care information technologies are prominent components of the American Recovery and Reinvestment Act of 2009. How these technologies will affect our health care system will depend on the collective choices made in the months ahead. Focusing on a limited set of near-term objectives will build trust, confer near-term benefit, and create the building blocks required to harness the altruistic and entrepreneurial motivations most likely to create future health care delivery systems. Decisionmakers must concentrate on putting in place the immediately important information technology foundations that will be essential for reaping long-term benefits. [*Health Affairs* 28, no. 2 (2009): w379–w384 (published online 9 March 2009; 10.1377/hlthaff.28.2.w379)]

THE AMERICAN RECOVERY and Reinvestment Act of 2009 could be viewed as an endorsement of current federal organizational structures, priorities, and processes for advancing the use of health information technology (IT). These include the Office of the National Coordinator for Health Information Technology (ONC) within the U.S. Department of Health and Human Services (HHS); the Certification Commission for Healthcare Information Technology (CCHIT), the public-private entity created to set standards for data transmission; the National eHealth Collaborative, the successor to the HHS American Health Information Community (to make health IT recommendations to the ONC); the Nationwide Health Information Network (NHIN); and other initiatives. If the legislation's intent is to hew to existing structures and strategies, then more funding for existing administrative policies, standard-setting activities, and certification bodies may have some positive impact. More investment in these activities will in all likelihood increase the adoption of health IT in clinical settings. What's more, additional funding expressly designed to encourage greater adoption of electronic health records (EHRs) would encourage systems that "talk to one another" and would allow providers "to improve quality and efficiency in the provision of health care services."[1]

But this is not a foregone conclusion. Simply spending more without improving the focus and operation of current initiatives will not guarantee greater societal benefit, improved provider efficiency, or better health outcomes. Extensive experience with health

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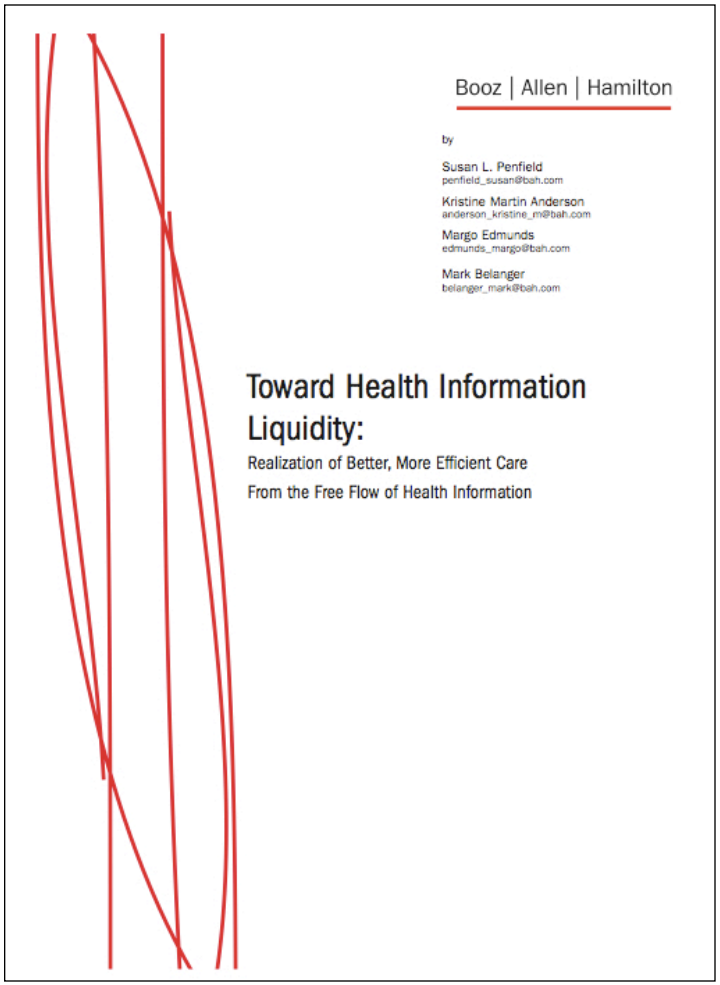
If greater investment in health IT simply automates a broken health care system, vital opportunities for transformation will be missed

Frisse

March 2009

Health Affairs

Health Information Liquidity



Realization of better, more efficient care from the free flow of health information

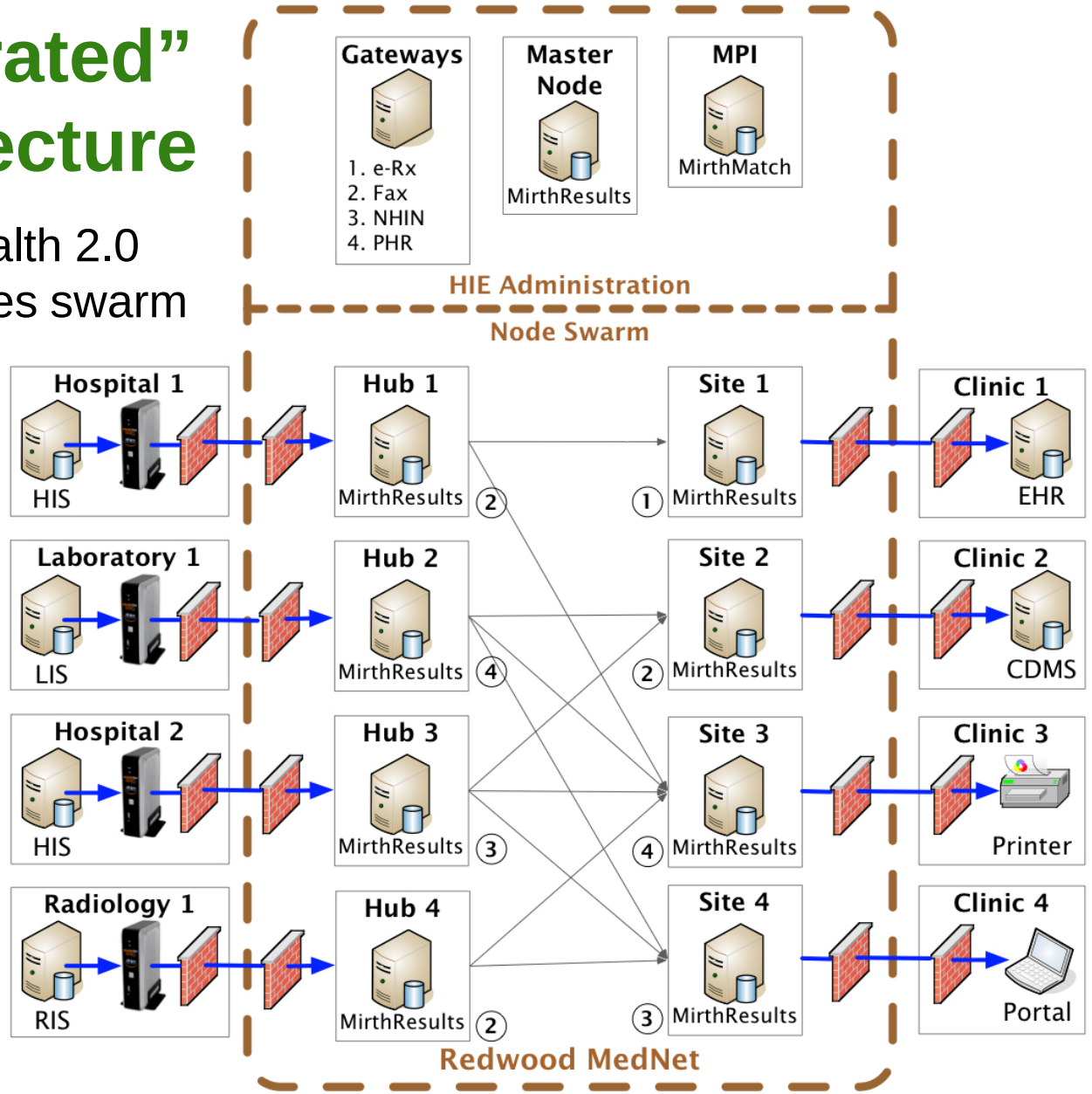
Penfield, Anderson, Edmunds & Belanger

January 2009

Booz Allen Hamilton

“Federated” Architecture

n-tier health 2.0
web services swarm



built with open source software

mirth PROJECT

GlassFish

PostgreSQL

Redwood MedNet Services

April 2008 -- Electronic laboratory result delivery service launched from first lab to first clinic

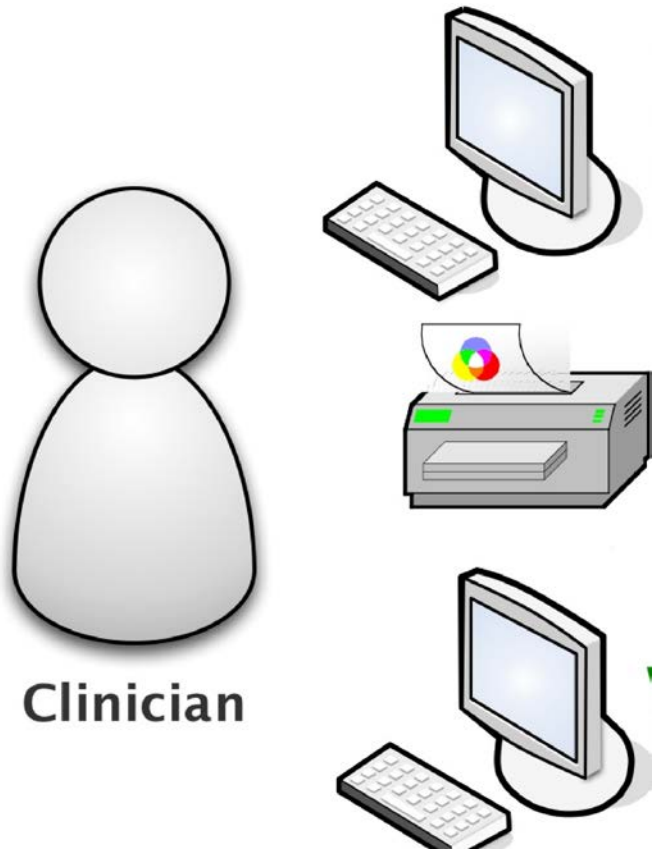
January 2009 -- Delivered 4,500 test results from 2 laboratories to 20 physicians / midlevels

December 2009 -- Plan to deliver 10,000 test results per month from 7 laboratories to 75 physicians / midlevels

Radiology delivery in pilot testing

e-Prescribing in development

Electronic Results Delivery



Redwood MedNet sends data

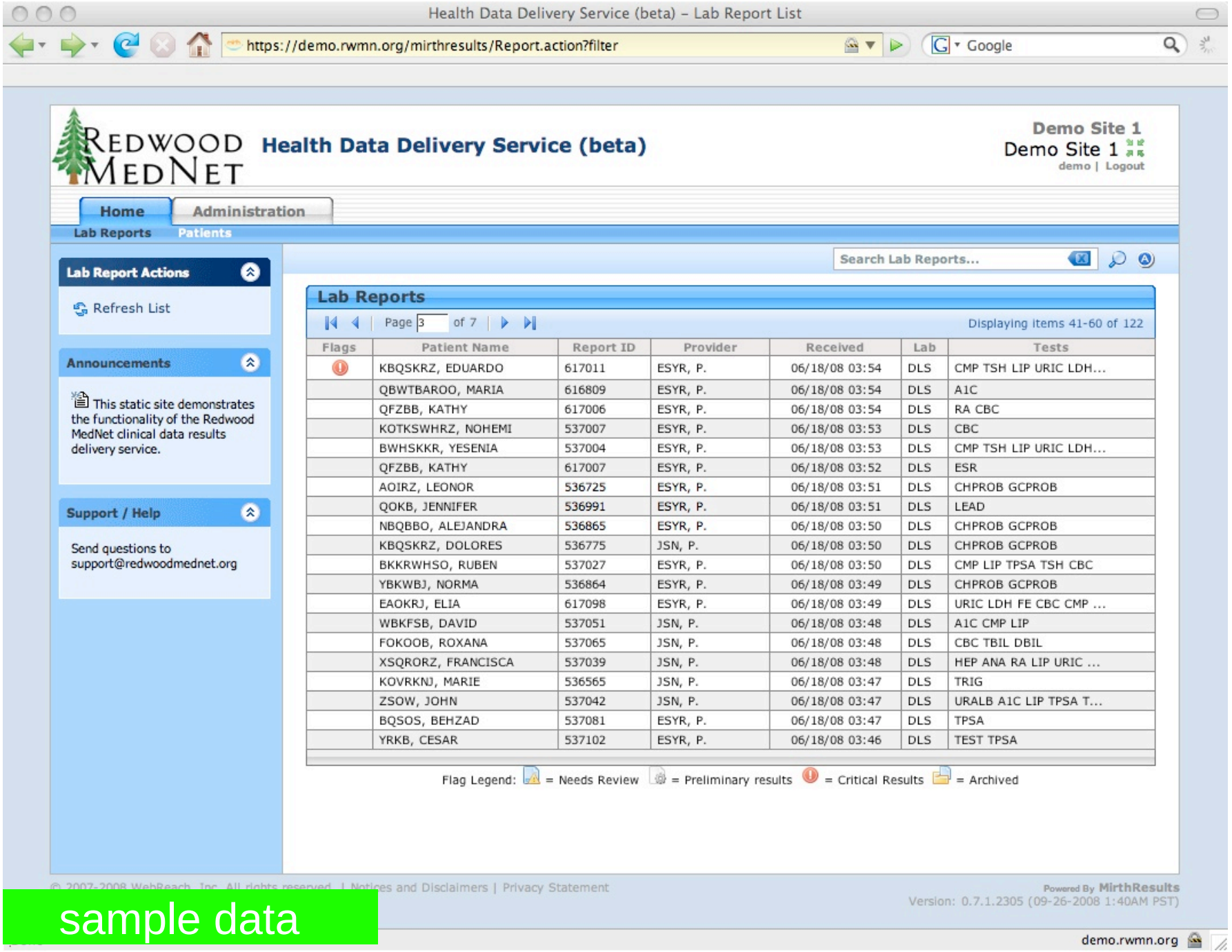
(1) to a secure web portal

OR

(2) to a local printer or fax

OR

(3) directly into an EHR / CDMS


Health Data Delivery Service (beta) – Lab Report List
https://demo.rwmn.org/mirthresults/Report.action?filter
Google
REDWOOD MEDNET
Health Data Delivery Service (beta)
Demo Site 1
Demo Site 1
demo | Logout
Home
Administration
Lab Reports
Patients
Lab Report Actions
Refresh List
Announcements
This static site demonstrates the functionality of the Redwood MedNet clinical data results delivery service.
Support / Help
Send questions to support@redwoodmednet.org
Search Lab Reports...
Lab Reports
Page 3 of 7
Displaying items 41-60 of 122
Flags | Patient Name | Report ID | Provider | Received | Lab | Tests
KBQSKRZ, EDUARDO | 617011 | ESYR, P. | 06/18/08 03:54 | DLS | CMP TSH LIP URIC LDH...
QBWTBAROO, MARIA | 616809 | ESYR, P. | 06/18/08 03:54 | DLS | A1C
QFZBB, KATHY | 617006 | ESYR, P. | 06/18/08 03:54 | DLS | RA CBC
KOTKSWHRZ, NOHEMI | 537007 | ESYR, P. | 06/18/08 03:53 | DLS | CBC
BWHSKKR, YESENIA | 537004 | ESYR, P. | 06/18/08 03:53 | DLS | CMP TSH LIP URIC LDH...
QFZBB, KATHY | 617007 | ESYR, P. | 06/18/08 03:52 | DLS | ESR
AOIRZ, LEONOR | 536725 | ESYR, P. | 06/18/08 03:51 | DLS | CHPROB GCPROB
QOKB, JENNIFER | 536991 | ESYR, P. | 06/18/08 03:51 | DLS | LEAD
NBQBBO, ALEJANDRA | 536865 | ESYR, P. | 06/18/08 03:50 | DLS | CHPROB GCPROB
KBQSKRZ, DOLORES | 536775 | JSN, P. | 06/18/08 03:50 | DLS | CHPROB GCPROB
BKKRWHSO, RUBEN | 537027 | ESYR, P. | 06/18/08 03:50 | DLS | CMP LIP TPSA TSH CBC
YBKWBJ, NORMA | 536864 | ESYR, P. | 06/18/08 03:49 | DLS | CHPROB GCPROB
EAOKRJ, ELIA | 617098 | ESYR, P. | 06/18/08 03:49 | DLS | URIC LDH FE CBC CMP ...
WBKFSB, DAVID | 537051 | JSN, P. | 06/18/08 03:48 | DLS | A1C CMP LIP
FOKOOB, ROXANA | 537065 | JSN, P. | 06/18/08 03:48 | DLS | CBC TBIL DBIL
XSQRORZ, FRANCISCA | 537039 | JSN, P. | 06/18/08 03:48 | DLS | HEP ANA RA LIP URIC ...
KOVRKNJ, MARIE | 536565 | JSN, P. | 06/18/08 03:47 | DLS | TRIG
ZSOW, JOHN | 537042 | JSN, P. | 06/18/08 03:47 | DLS | URALB A1C LIP TPSA T...
BQSOS, BEHZAD | 537081 | ESYR, P. | 06/18/08 03:47 | DLS | TPSA
YRKB, CESAR | 537102 | ESYR, P. | 06/18/08 03:46 | DLS | TEST TPSA
Flag Legend: = Needs Review = Preliminary results = Critical Results = Archived
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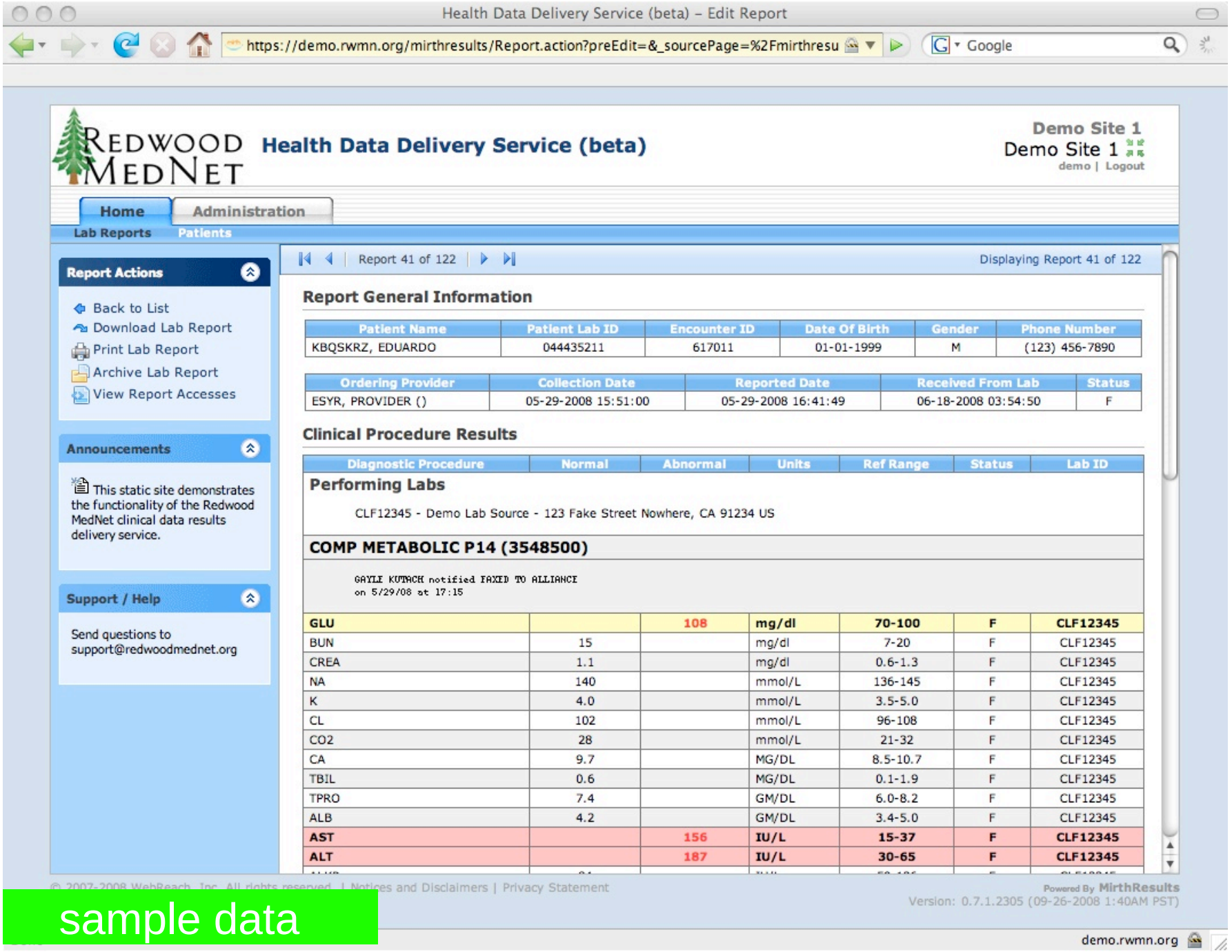
Version: 0.7.1.2305 (09-26-2008 1:40AM PST)
sample data
demo.rwmn.org


Health Data Delivery Service (beta) – Edit Report
https://demo.rwmn.org/mirthresults/Report.action?preEdit=&_sourcePage=%2Fmirthresu
Google
REDWOOD MEDNET
Health Data Delivery Service (beta)
Demo Site 1
Demo Site 1
demo | Logout
Home
Administration
Lab Reports
Patients
Report Actions
Back to List
Download Lab Report
Print Lab Report
Archive Lab Report
View Report Accesses
Announcements
This static site demonstrates the functionality of the Redwood MedNet clinical data results delivery service.
Support / Help
Send questions to support@redwoodmednet.org
Report 41 of 122
Displaying Report 41 of 122
Report General Information
Patient Name | Patient Lab ID | Encounter ID | Date Of Birth | Gender | Phone Number
KBQSKRZ, EDUARDO | 044435211 | 617011 | 01-01-1999 | M | (123) 456-7890
Ordering Provider | Collection Date | Reported Date | Received From Lab | Status
ESYR, PROVIDER () | 05-29-2008 15:51:00 | 05-29-2008 16:41:49 | 06-18-2008 03:54:50 | F
Clinical Procedure Results
Diagnostic Procedure | Normal | Abnormal | Units | Ref Range | Status | Lab ID
Performing Labs
CLF12345 - Demo Lab Source - 123 Fake Street Nowhere, CA 91234 US
COMP METABOLIC P14 (3548500)
GAYLE KUTACH notified FAXED TO ALLIANCE
on 5/29/08 at 17:15
GLU | | 108 | mg/dl | 70-100 | F | CLF12345
BUN | 15 | | mg/dl | 7-20 | F | CLF12345
CREA | 1.1 | | mg/dl | 0.6-1.3 | F | CLF12345
NA | 140 | | mmol/L | 136-145 | F | CLF12345
K | 4.0 | | mmol/L | 3.5-5.0 | F | CLF12345
CL | 102 | | mmol/L | 96-108 | F | CLF12345
CO2 | 28 | | mmol/L | 21-32 | F | CLF12345
CA | 9.7 | | MG/DL | 8.5-10.7 | F | CLF12345
TBIL | 0.6 | | MG/DL | 0.1-1.9 | F | CLF12345
TPRO | 7.4 | | GM/DL | 6.0-8.2 | F | CLF12345
ALB | 4.2 | | GM/DL | 3.4-5.0 | F | CLF12345
AST | | 156 | IU/L | 15-37 | F | CLF12345
ALT | | 187 | IU/L | 30-65 | F | CLF12345
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sample data
demo.rwmn.org

Redwood MedNet Roadmap

BUILT

Clinical messaging & results delivery service

NHIN gateway

IN DEVELOPMENT

e-Rx with 340B pharmacy and clinical trials builder

NQF quality measures

Local public health confidential morbidity reporting

NCPHI biosurveillance grid gateway

Making Clinical Data Agile

Capture clinical data while still electronic, before it is printed or faxed

Transport clinical data in a standards based format via a secure electronic service

Deliver clinical data to the health care provider expecting the data

Provide appropriate delivery options to match site level clinical tools and workflows

Create an agile, minimalist clinical data network

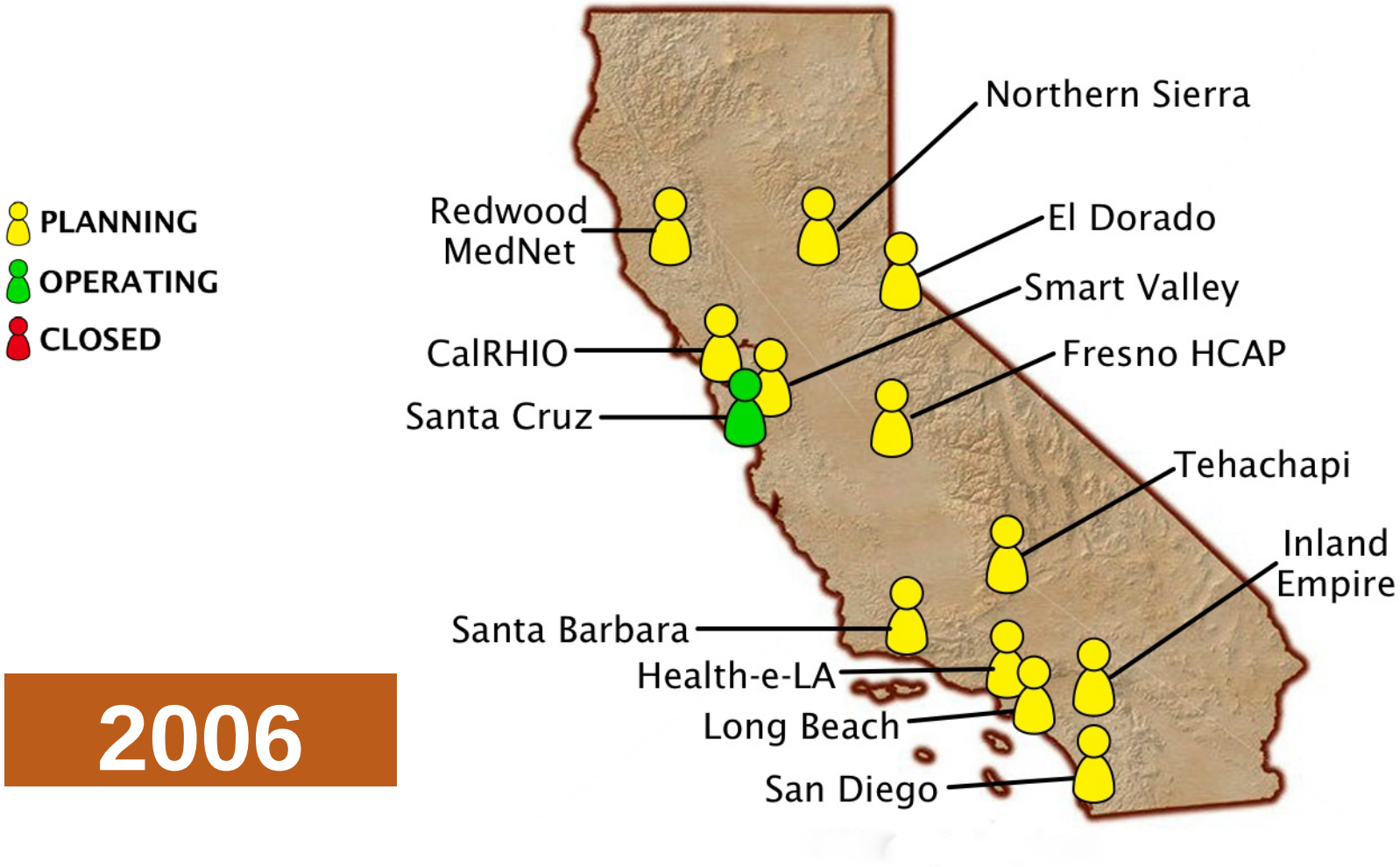
Rural Considerations

1 -- Lack of broadband

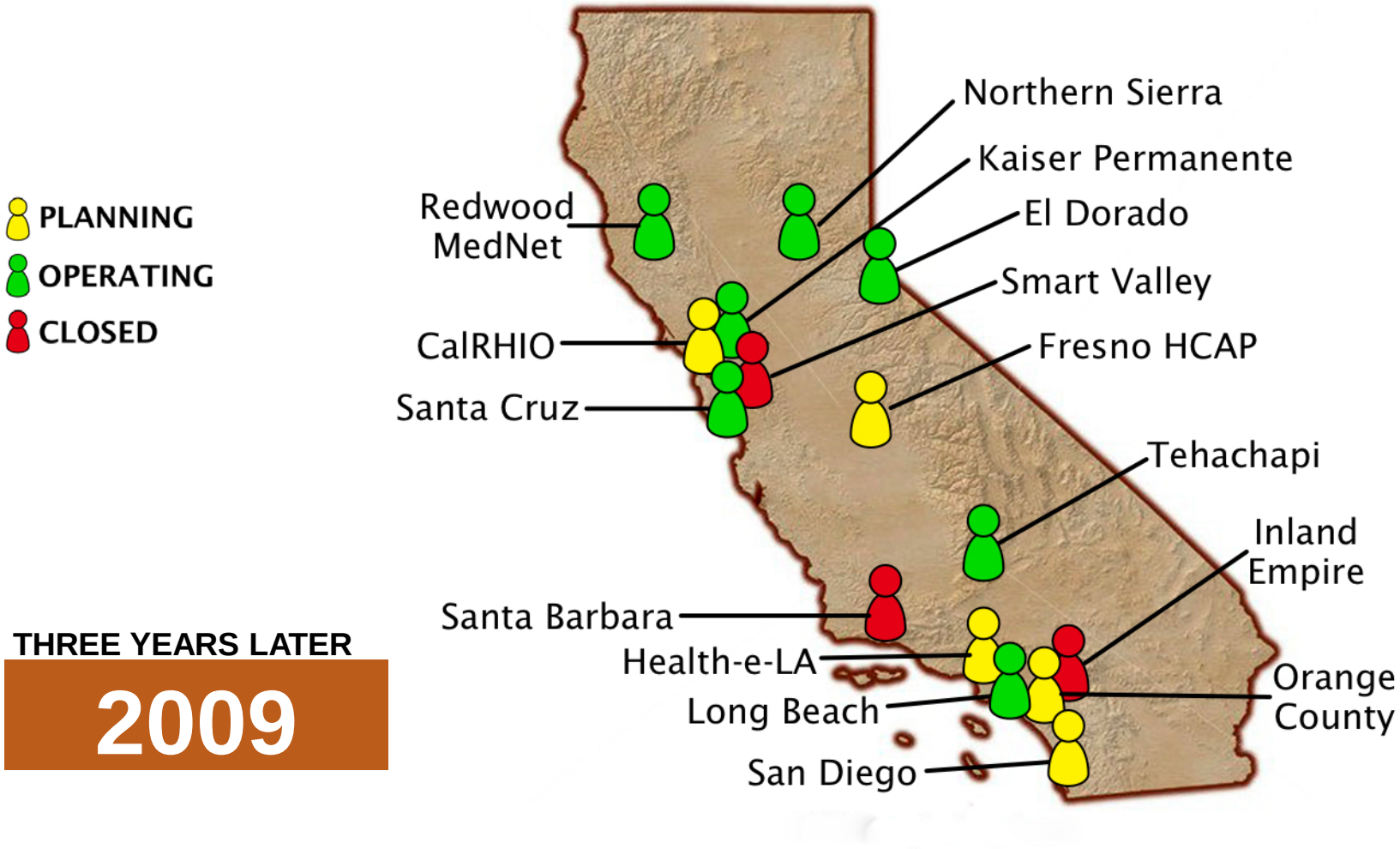
2 -- Absence of affordable health IT support

FREE IS NOT CHEAP ENOUGH FOR EHR ADOPTION

Health Information Exchanges



Health Information Exchanges



Established February 2009

California eHealth Collaborative

- Formed by HIEs in California
- Open discussion on all health IT projects
- Steering Committee formed Feb. 2009
- Webinars started March 2009
- CAeHC blog already has a discussion on the State Designated Entity
- **www.caehc.org**

caehealth.org
California eHealth Collaborative

CAeHC Webinars

March 10 -- Rachel Block, *NYeC*

March 17 -- Janet Marchibroda, *eHealth Initiative*

March 27 -- Sam Karp, *CHCF*

April 2 -- Blackford Middleton, *Partners Healthcare*

April 14 -- David Lansky, *PBGH*

April 21 -- John Halamka, *HITSP*

California eHealth Collaborative Webinars are archived on YouTube

Making Clinical Data Agile

Next generation network aware EHRs will co-evolve with HIE data interoperability networking services

An agile clinical data network is needed to accelerate communication among care teams

Redwood MedNet HIE focuses on making health data agile across the entire local health care community

HIEs are the best way to facilitate broad deployment of interoperable health data services across an entire clinical community

Will Ross, Project Manager

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707.462.6369