



eHEALTH INITIATIVE

Real Solutions. Better Health.

Connecting Communities Workgroup

Connecting Rural Providers

December 20, 2013

2:00 – 3:00 pm ET

Reminder

*Please mute your line
when not speaking*

(6 to mute, *7 to unmute)*



Reminder

This call is being recorded



Agenda

- Welcome and introduction
- Resources for Rural Health Providers
 - Joe Wivoda, Chief Information Officer, National Rural Health Resource Center
- HIE Experiences
 - Will Ross, Project Manager, Redwood MedNet
 - Bill Beighe, Chief Information Officer, Santa Cruz HIE
- Q&A





NATIONAL
RURAL HEALTH
RESOURCE CENTER

600 East Superior Street, Suite 404 | Duluth, MN 55802 | Ph. 800.997.6685 or 218.727.9390 | www.ruralcenter.org

Rural Health Information Exchange

Challenges, Solutions, and Best Practices

Joe Wivoda

CIO

12-20-13



Purpose

The National Rural Health Resource Center is a nonprofit organization dedicated to sustaining and improving health care in rural communities. As the nation's leading technical assistance and knowledge center in rural health, The Center focuses on five core areas:

- Performance Improvement
- Health Information Technology
- Recruitment & Retention
- Community Health Assessments
- Networking



Rural HIE Challenges

- “What will the IDN do?”
- Misunderstanding of the Transitions of Care measure in Stage 2
- Urban focus for the HIEs
- Cost of participation for query-based HIE
- Overwhelmed vendors in the rural space



Strategies for Rural

- Focus on Direct now, plan for query-based HIE
- Understand your referral patterns
- Network with peers
- Engage patients and plan to meet their needs
- Consider getting some help



HIE Toolkit

- Developed in partnership with HIELix
- Set of tools:
 - HIE Policy Matrix
 - HIE Direct Guide
 - ROI Calculator
 - Privacy and Security Overview and resource List
 - HIE: First Considerations
- Available at <http://www.ruralcenter.org/rhitnd/hie-toolkit>



NATIONAL
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Building HIE Services in Rural Communities



Redwood MedNet, Inc.

Will Ross

Project Manager

20 December 2013

Provisioning the clinical data supply chain in a complex adaptive healthcare system

About Redwood MedNet



- Community steering committee established in 2004
- Incorporated as 501(c)(3) in 2005
- 9 member Board of Directors
- Operates regional trust community with 40+ participating healthcare facilities
- Participant, eHealth Exchange (“NwHIN”)
- Member, DirectTrust.org
- Member, National Association for Trusted Exchange (“NATE”)

Questions Redwood MedNet Asks



How can the right data on the right patient get to the right clinician at the right time in the right format?

What is the business case for unaffiliated health care facilities to share patient data?

How do rural and thinly resourced health care facilities create and sustain HIE services?

What is the optimal role for a nonprofit community HIE service to facilitate health system transformation?

California State HIE Environment

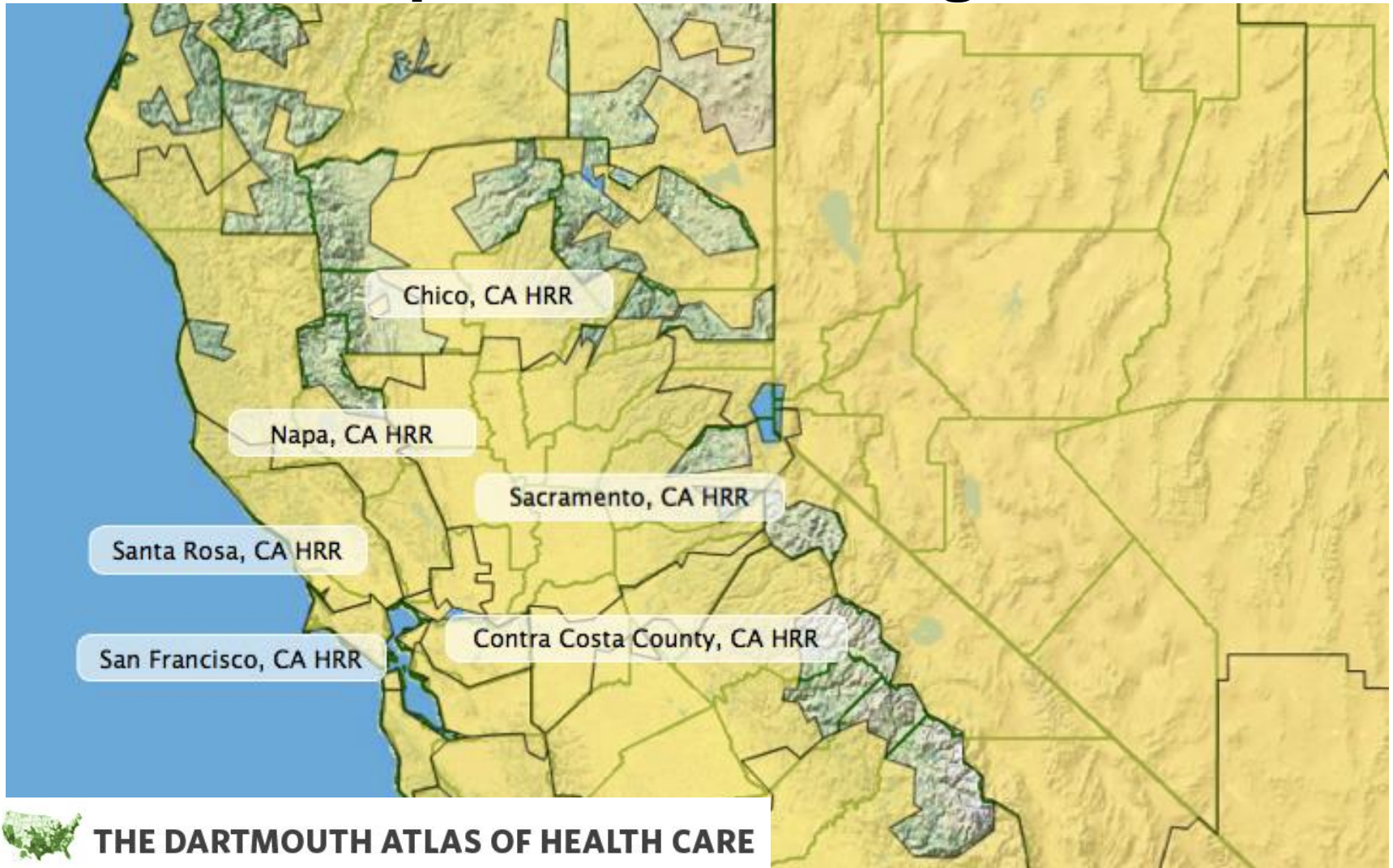
1. California HHS signed the cooperative agreement with ONC
2. CHHS delegated operational responsibility for State HIE expansion funds to California Health eQuality, operated by the Institute for Population Health Improvement at UC Davis
3. CHeQ has pursued many activities to incubate or kick-start a robust, federated, public-private partnership to rapidly establish HIE options in California
4. CAHIE, the California Association of HIEs, is a new organization currently under incubation by CHHS

California's strategy...



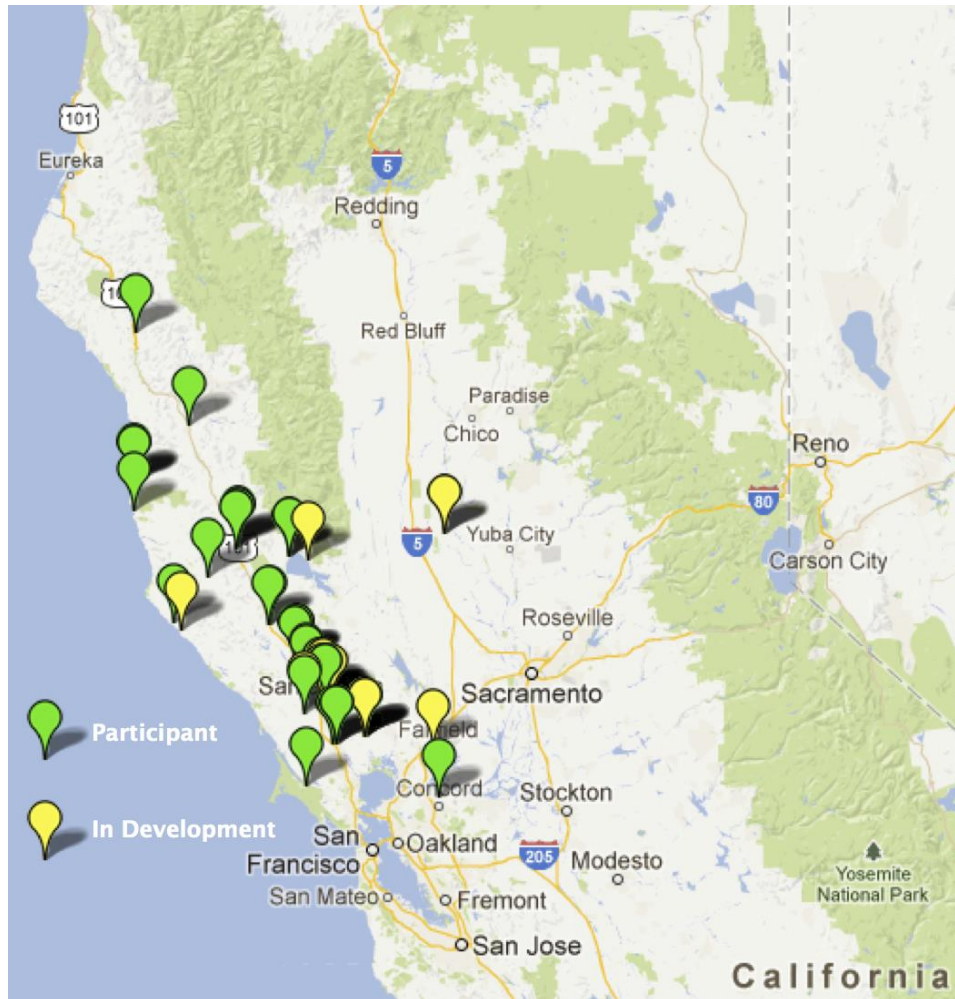
- Promote community / enterprise activities.
- Promote exchange among communities / enterprises.
- Make centralized infrastructure as light-weight as possible.
- Support access to government systems.
- Support access to national networks.

Hospital Referral Regions



THE DARTMOUTH ATLAS OF HEALTH CARE

Regional HIE Services



Redwood MedNet provides clinical data interoperability services to dozens of health care facilities.

- 6 Hospitals
- 1 Outpatient surgery center
- 5 Independent laboratories
- 2 Imaging centers
- 600 providers at 24 practices
- 2 public health departments
- CAIR (immunization registry)

CHeQ Investments at Redwood MedNet

HIE Expansion

- \$474,000 to build 64 interoperability deliverables at 25 facilities

HIE Infrastructure

- \$90,000 to build 18 interoperability deliverables at 12 facilities

HIE Interface

- \$125,000 to build 23 interoperability deliverables at 17 facilities

Rural HIE Incentive

- \$207,000 to build 21 interoperability deliverables at 9 facilities

CHeQ Rural HIE Investments

HIE Expansion

- 11 of 25 participating facilities are rural

HIE Infrastructure

- 6 of 12 participating facilities are rural

HIE Interface

- 8 of 17 participating facilities are rural

Rural HIE Incentive

- 8 of 9 participating facilities are rural

Current HIE Services

Most Typical

Send laboratory test results into EHR

Send radiology narrative reports into EHR

Send vaccination reports to state immunization registry

Less Common

Send test orders to laboratory

Send discharge summaries to primary care provider

Send patient summary as transition of care message

Provide longitudinal patient record to Emergency Room

Redwood MedNet Clinical Message Traffic



Clinical Messages Delivered Per Month

Optimizing Data Transport

Redwood MedNet is essentially in the data transport business

1. For the PUSH transport pattern, the SENDER and the RECEIVER jointly determine the data transport method
 - a) CONNECT gateway unsolicited push
 - b) Direct secure email push
2. For the QUERY-RESPONSE transport pattern, the originating site is active, the sending site is passive
3. For the PUBLISH-SUBSCRIBE transport pattern, both ends of the transaction actively participate in the process

All three transport patterns are explicitly allowed in the DURSA

Interface Deployment Considerations

Building interoperable clinical data in a complex adaptive system

1. Some facilities are not ready for an all-electronic interface solution
2. The full suite of interfaces may be unaffordable
3. The new workflow may be too risky or disruptive for a full installation all at once
4. Some healthcare facilities are risk-averse and deliberately choose a gradual and incremental path towards interoperability
5. Some EHR vendors claim their software is more ready for interfaces than it really is
6. Sometimes a six week installation takes far longer
7. Some facilities plan to change EHR vendors in the near future

Matching HIE Services to Local Workflow

Every interface project starts with a close study of current clinician workflow, with limitations or abilities of incumbent software, and with an understanding of local data transport options

RWMN seeks to optimize site level workflow, not to impose external portals or out of band transactions on local users

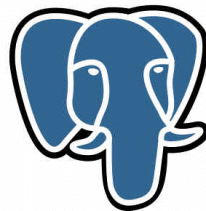
1. DISCOVERY phase concludes with a detailed bill of materials and project plan
2. DEVELOPMENT opened to build the new interface(s)
3. TESTING before release to production

Provisioning HIE Services

1. Co-tenanted edge proxy clinical data repositories
2. CONNECT gateway service on eHeath Exchange (NwHIN)
3. Federated provider directory and transport options
4. Direct Messaging instance installed
5. “HIE Plug” secure local nodes



PostgreSQL



Open Source Software & Hardware

HIE Plug

- Secure local node on Redwood MedNet private cloud
- Marvel Kirkwood ARM @ 1.2 GHz
- 2 Gigabit Ethernet ports
- Debian Wheezy
- Encrypted filesystem
- MirthConnect data integration engine
- Apache Derby DB
- OpenVPN Server
- Samba file server
- CUPS for local printing



Open Source HIE Software In Development

1. Facility Registry
2. Client Registry
3. Provider Registry
4. Terminology Services
5. Shared Health Record
6. Interoperability Layer



<https://wiki.ohie.org/display/SUB/Home>

Interoperability and HIE

FROM THE FIELD

FROM THE FIELD

Interoperability: The Key To The Future Health Care System

Interoperability will bind together a wide network of real-time, life-critical data that not only transform but become health care.

by David J. Brailer

ABSTRACT: The United States is building a point-of-care health information system to rival the worldwide network of electronic banking. Through health care information exchange and interoperability, clinicians will have access to a longitudinal medical record. This interoperability is a fundamental requirement for the health care system to derive the societal benefits promised by the adoption of electronic medical records (EMRs). The paper by Jan Walker and colleagues highlights some of these benefits. One critical question is whether the adoption of EMRs needs to wait for interoperability standards or whether it can proceed efficiently without them.

THE OVERWHELMING majority of Americans receive their care from more than one caregiver or other provider—be it a physician group, solo physician, hospital, laboratory, pharmacy, or urgent care center, let alone work-site clinics, school clinics, or public health sites. Closed systems such as Kaiser Permanente or the Veterans Health Administration farm out a portion of their care to outside providers because of geographic coverage, specialty access, or overflow management. Even the narrow and restrictive health plan networks of the past are rarely seen anymore.

Americans can and do choose to get care from whomever they want: more than 500,000 office-based physicians, approximately 3,000 community hospitals, more than 16,000 certified nursing facilities, and many other care settings.¹ Choice of caregivers and other providers is a defining characteristic of the privately operated U.S. health care system, one that makes

our health care markedly different from that of most other countries. Choice allows consumers to select caregivers or other providers based on their proximity, bedside manner, quality and capability (to the degree that consumers can observe this), cultural aptitude, or many other factors that may matter to any given consumer.

Without some means of integration, choice leads to fragmentation of the consumer's health care experience. Fragmentation, in turn, results in errors, duplication, lack of coordination, and many other problems. Integration mechanisms have been tried in the past, although none has delivered lasting benefit: These include horizontal and vertical mergers, physician roll-ups, specialty carve-outs, and specialty carve-ins. Information as a mechanism for integration has been contemplated and debated for two decades, but technical barriers have kept it out of reach until recently. Unlike integration through merged assets, in-

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HEALTH AFFAIRS - Web Exclusive

WS-19

DOI:10.1377/hlthaff.20050201

“Without interoperability and health information exchange, health information will remain in proprietary silos.”

Brailer

January-February 2005

Health Affairs

Health Information Sharing and Trust

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

Carol Diamond (cdiamond@marke.org) is managing director of the Health Program at the Markle Foundation in New York City. Clay Shirky is an adjunct professor in the Graduate Interactive Telecommunications Program, New York University, also in New York City.

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w 383

DOI: 10.1377/hlthaff.27.5.w383 ©2008 Project HOPE—The People-to-People Health Foundation, Inc.

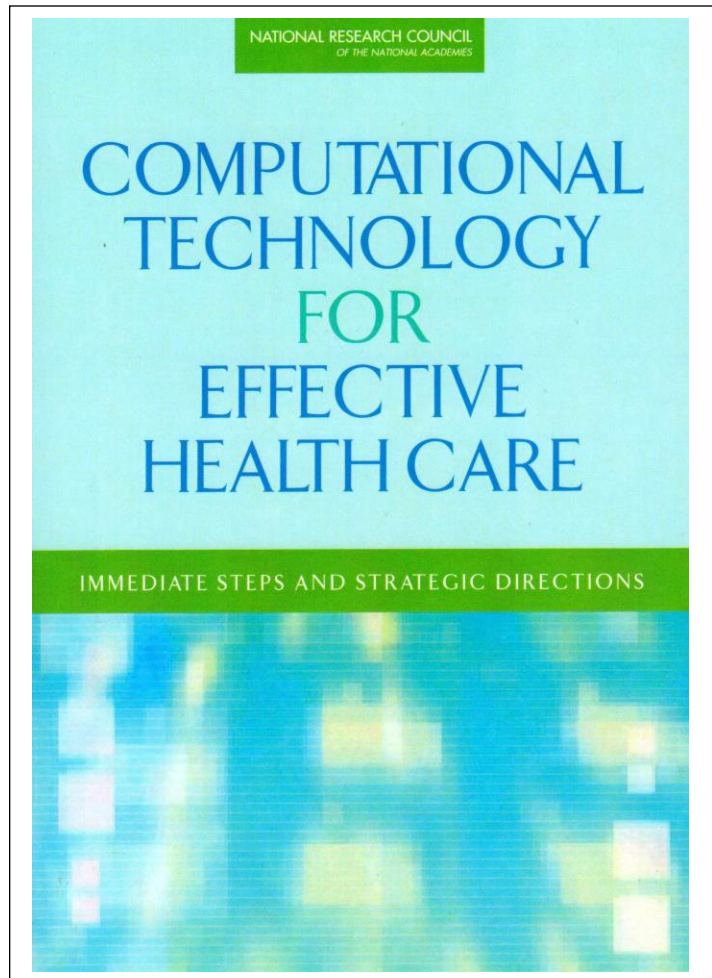
“Information won’t be shared until there is a compelling reason to share it and until the parties that need to share it trust each other.”

Diamond & Shirky,

July-August 2008

Health Affairs

Crossing the Health Care IT Chasm



“Providers will appropriately be drawn to IT only if, where and when it can be shown to enable them to do their jobs more effectively.”

Stead & Lin

February 2009



THE NATIONAL ACADEMIES PRESS

Financial Sustainability Remains A Concern

WEB FIRST

By Julia Adler-Milstein, David W. Bates, and Ashish K. Jha

Operational Health Information Exchanges Show Substantial Growth, But Long-Term Funding Remains A Concern

ABSTRACT Policy makers are actively promoting the electronic exchange of health information to improve the quality and efficiency of health care. We conducted a national survey of organizations facilitating health information exchange, to assess national progress. We found that 30 percent of hospitals and 10 percent of ambulatory practices now participate in one of the 119 operational health information exchange efforts across the United States, substantial growth from prior surveys. However, we also found that 74 percent of health information exchange efforts report struggling to develop a sustainable business model. Our findings suggest that despite progress, there is a substantial risk that many current efforts to promote health information exchange will fail when public funds supporting these initiatives are depleted.

Julia Adler-Milstein (juliam@umich.edu) is an assistant professor in the School of Information and School of Public Health, University of Michigan, in Ann Arbor.

David W. Bates is chief of the Division of General Internal Medicine and Primary Care, Brigham and Women's Hospital, in Boston, Massachusetts.

Ashish K. Jha is a professor of health policy and management at the Harvard School of Public Health, in Boston.

DOI: 10.1377/hlthaff.2013.0124
HEALTH AFFAIRS 32, No. 8 (2013)
4222-3 Project HOPE—The People's Health Foundation, Inc.

A core aim of the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 is to foster the development of broad-based electronic health information exchange, in which clinical data follow patients across delivery settings.^{1,2} Health information exchange is a priority in HITECH because there is a strong consensus among policy makers that it can generate considerable gains in quality and efficiency, but it requires substantial policy intervention to become widespread.

In selected US markets there were health information exchange efforts prior to HITECH, many of which received early support from the Agency for Healthcare Research and Quality.^{3,4} Outside of these markets, however, providers typically shared clinical data using manual methods such as letters and faxes, which are costly, often unavailable at the point of care, and not analyzable by computers. Achieving widespread electronic exchange of health information should lead to better care with potentially substantial savings.⁵

The push to achieve broad-based health information exchange is also fueled by a consensus that exchanging such information is a critical component of any approach to improve the US health care delivery system. Without health information exchange, the US health care system will continue to contain islands of clinical data that are unnecessarily duplicative and that impede the ability to coordinate care across settings.

In HITECH, federal policy makers promoted health information exchange through two main mechanisms. First, they included it in the meaningful-use criteria—the federal standards for use of electronic health records (EHRs) that physicians and hospitals must meet to receive financial incentives.⁶ Second, they provided nearly \$600 million directly to states to build infrastructure capable of supporting health information exchange.⁷ The goal of the State Health Information Exchange Cooperative Program is to give providers options for participating in health information exchange.⁸ Some states have responded by creating their own entities to facilitate the exchange of health information, while other states are bolstering existing local and regional entities that support exchanging the

AUGUST 2013 | 32:8 HEALTH AFFAIRS | 1

“Without health information exchange, the U.S. health care system will continue to contain islands of clinical data that are unnecessarily duplicative and that impede the ability to coordinate care across settings.”

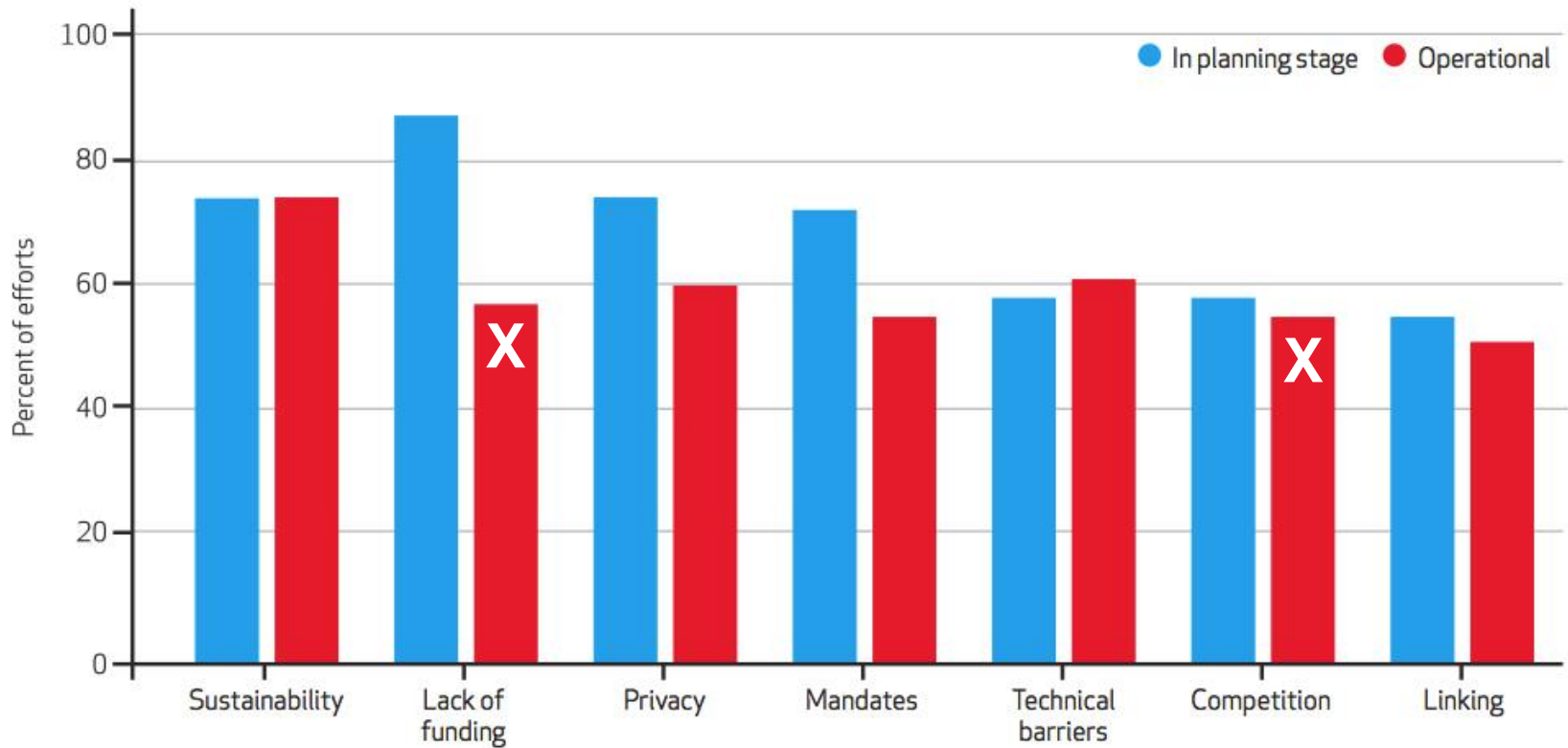
Adler-Milstein, Bates & Jha

August 2013

Health Affairs

Financial Sustainability Remains A Concern

Barriers To The Development Of Health Information Exchange Efforts



Adler-Milstein, Bates & Jha, August 2013, *Health Affairs*

Connecting Communities for Better Health

Redwood MedNet 2013 Conference

Thursday July 25, Santa Rosa, California

Keynote Presentations

DEVEN MCGRAW, JD, MPH
MARK FRISSE, MD, MSc, MBA

Morning Plenary Session

CLEM J. MCDONALD, MD
CHRISTOPHER CHUTE, MD, DrPH
MICHAEL HOGARTH, MD

Afternoon Plenary

DAVID KIBBE, MD, MBA
ANUJ DESAI, MBA
ROBERT M. COTHREN, PhD

Closing Session

WES RISHEL
J. MARC OVERHAGE, MD, PhD

\$200 Registration (Government Rate)

<http://www.redwoodmednet.org/projects/events/20130725/index.html>

Connecting Communities for Better Health



Redwood MedNet 2013 - David Kibbe, MD, MBA

57 views 3 months ago



Redwood MedNet 2013 - Closing Panel Discussion

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Redwood MedNet 2013 - Wes Rishel

13 views 4 months ago



Redwood MedNet 2013 - J. Marc Overhage, MD, PhD

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Redwood MedNet 2013 - Robert M. Cothren, PhD - plus panel Q & A

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Redwood MedNet 2013 - Christopher G. Chute, MD, DrPH - plus panel Q...

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Redwood MedNet 2013 - Clem J. McDonald, MD

29 views 4 months ago

<http://www.youtube.com/user/redwoodmednet/videos>

Building HIE Services in Rural Communities



Redwood MedNet, Inc.

Will Ross

wross@redwoodmednet.org

Provisioning the clinical data supply chain in a complex adaptive healthcare system

Connecting rural and underserved providers to health information exchange

BILL BEIGHE, CIO

BBEIGHE@SANTACRUZHIE.ORG

SANTA CRUZ HEALTH INFORMATION EXCHANGE

AXESSON



Agenda

History in Rural Communities- Santa Cruz Health Information Exchange

California: The Big Picture

Axesson and Rural Services

California Direct

- Regional HIO
- Started in 1996
- County Population 270,000
- 95% in Patient Index
- Bi-directional Exchange
180,000 + clinical documents /
month
- Two full-service hospitals
- 367+ MDs – 900+ Users
- Web & EHR Interfaces
- 4 Outpatient Laboratories
- 5 Radiology Centers
- County Health Services
- Safety Net Clinics

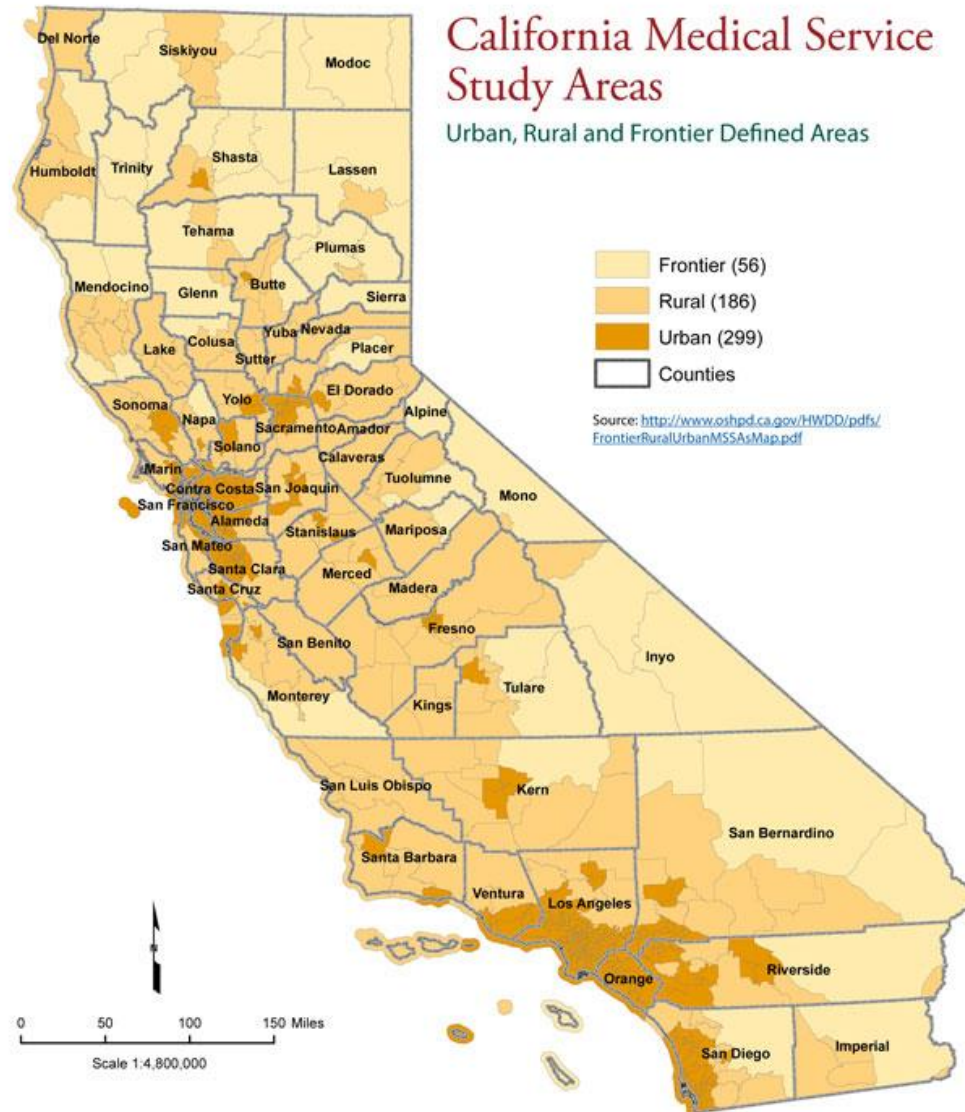


SCHIE Data Types & Features

- ✓ Community Patient Index (MPI)
- ✓ Lab Results
- ✓ Radiology Reports from Hospitals and Independent
- ✓ ADT feeds
- ✓ Chart Notes
- ✓ Referrals and Authorizations
- ✓ Hospital – Dictations, Op Reports, ED, H&P etc
- ✓ Discharge Summaries
- ✓ Consultant Reports
- ✓ Patient Summary (Print and CCD)
- ✓ EHR / EHR Interface (Allscripts / McKesson and 8 others)
- ✓ Problems, Allergies, Immunizations, Consent
- ✓ Provider to Provider Secure Communications
- ✓ Direct (3 different HISP offerings)
- ✓ Virtual Health Record (Longitudinal Patient Record)
- ✓ NwHIN Santa Cruz / Sacramento in final testing

California Medical Service Study Areas

Urban, Rural and Frontier Defined Areas

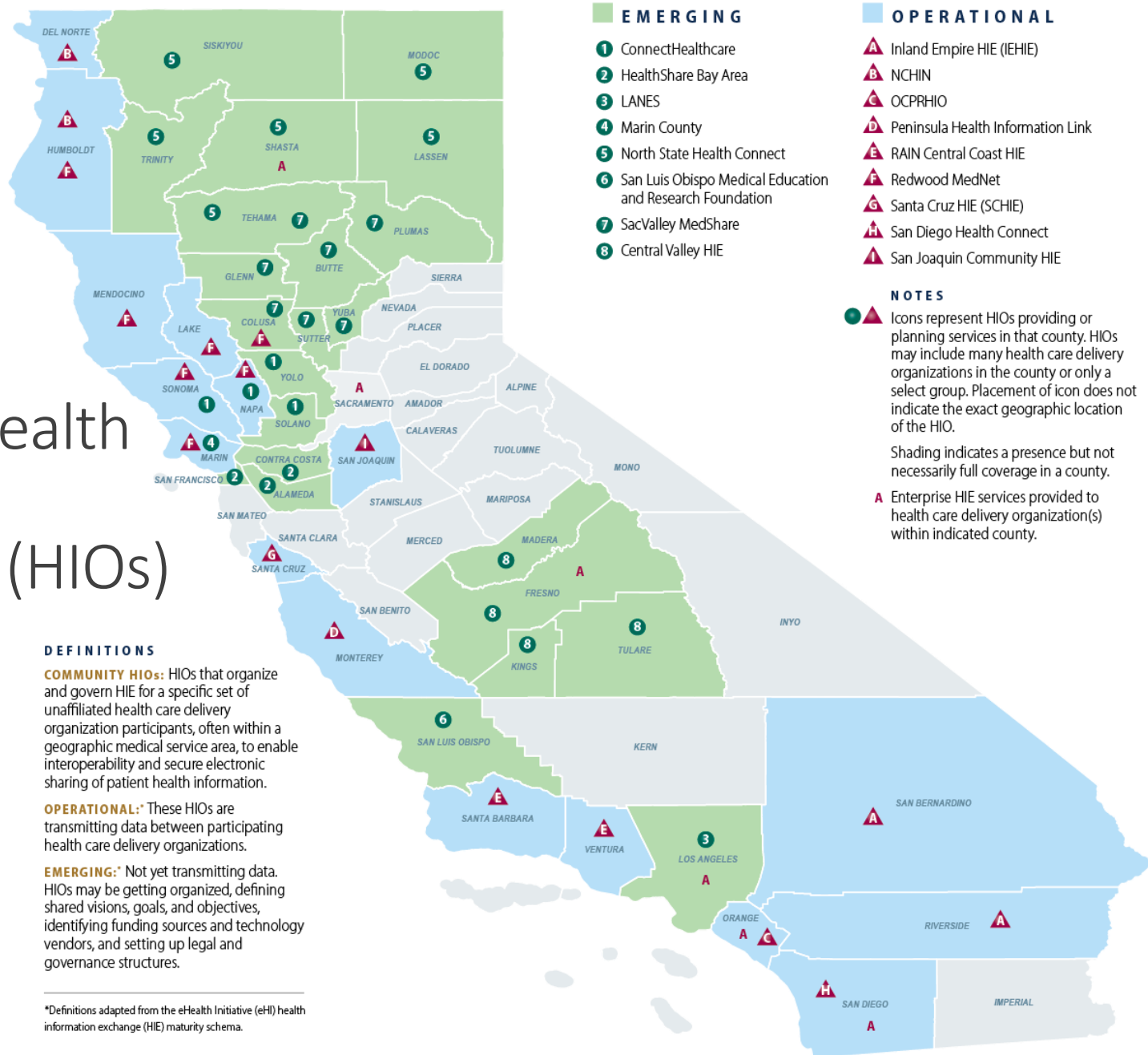


Source: <http://www.oshpd.ca.gov/HWDD/pdfs/FrontierRuralUrbanMSSAsMap.pdf>

Data Sources:
OSHPD, Healthcare Workforce Development Division
U.S. Census Bureau
January 2006



Community Health Information Organizations (HIOs) in California



Here's how we can help:

- EMR to HIE Connectivity
- DIRECT Messaging
- Bi-Directional Data Exchange
- Query Based Exchange
- Regional HIO Connectivity
- Ancillary Facility Interfaces
- HIE Implementation
- HIE Administration
- Integrated Transcription
- Provider to Provider Connectivity

LET US CONNECT YOU....

Rural communities have a limited number of providers & specialists – so patients often travel for treatment. Secure health information exchange gives you instant access to complete patient histories, immediate test & imaging results & direct collaboration among providers – wherever they are.

Axesson connects providers, hospitals and facilities. ClearExchange delivers the interoperability necessary to make IPAs, ACOs, Medical Homes, etc. succeed.

Axesson's ClearExchange© puts your care team's entire workflow right inside your EHR. Connect with health care partners, labs', hospitals', and organizations' EHRs, or with your Health Information Exchange. Don't have an HIE yet? We can help.



RURAL CALIFORNIA OFFERING BY AXESSON FEATURES:

- Directed Exchange for single users
- Directed Exchange for a group of users featuring a customized URL and HISP
- Directed Exchange Using HL7 & XML Interfaces for bidirectional EMR to facility, EMR to EMR or EMR to HIE connectivity
- Directed Exchange and HIE with Longitudinal Patient Record. Axesson is able to deliver this functionality however the CDR is not covered by the Rural HIE Grant

Optimal care collaboration depends on having all patient data intelligently organized & delivered right into your EHR.



Authorized CA Rural HIE
Service Provider

The image shows a browser window displaying the California Direct website. The browser's address bar shows the URL <http://cadirect.org/>. The website has a dark blue header with the text "California Direct" in large white font, and "brought to you by Axesson" in smaller white font below it. The main content area has a teal background. On the left, a white box contains a bulleted list of features. On the right, the text "Coming January 2014" is displayed in large white font, followed by a paragraph of descriptive text and a dark blue "Notify me!" button.

http://cadirect.org/

California Direct

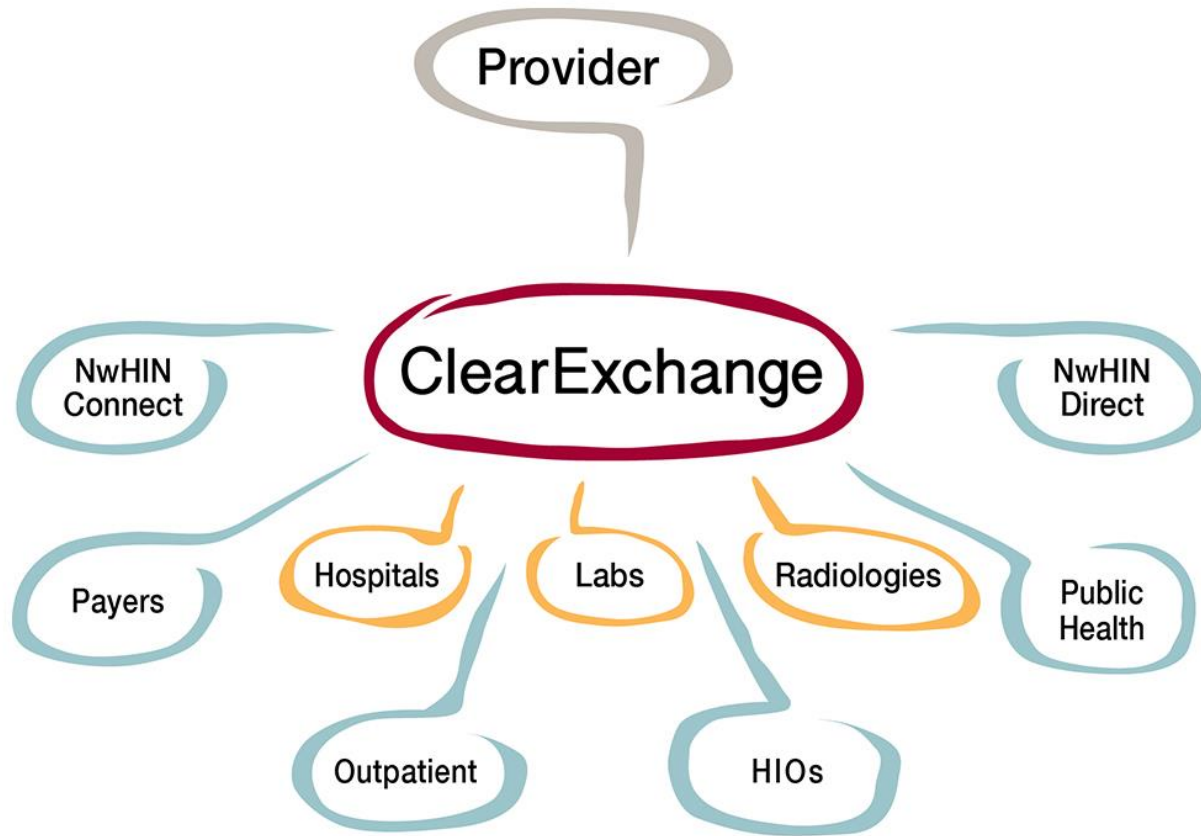
brought to you by Axesson

- Reduce or Eliminate Faxing
- FREE for Some Providers
- Use with or without an EHR

Coming January 2014

Direct will change the way you securely communicate health information with patients, providers or any healthcare organization

Notify me!



For more information about Direct and
Connectivity contact
sales@Axesson.com

Q&A



ANNUAL CONFERENCE 2014

THE ROADMAP TO HEALTHCARE DELIVERY TRANSFORMATION



January 28-29, 2014 | CHAMPIONSGATE FL

Discussion Topics Include:

#eHI2014

- *Disruptive Innovations in Data and Technology: Lessons Learned from Other Industries*
- *Leveraging Analytics to Support Population Health*
- *Privacy and Security: Challenges and Best Practices*
- *Much More!*

REGISTER NOW



Visit www.ehdc.org for more information.



ANNUAL CONFERENCE 2014

THE ROADMAP TO HEALTHCARE DELIVERY TRANSFORMATION



January 28-29, 2014 | Orlando, FL

Early Bird Rates Expire in **Two Weeks!**

REGISTER NOW



#eHI2014

Sponsorship Opportunities Available!

Call for Live Demonstrations Open!

Visit www.ehidc.org for more information.



Special Workgroup Discounts!

Connecting Communities will meet **IN PERSON** on January 28 before the 2014 Annual Conference in Orlando, FL!

- **Use code EHIANNUAL for \$100 off registration**
- **Meet and network your fellow council members face to face!**
- **Give us your input on eHI priorities for 2014!**



Thank you!

