

Interoperability @ Sutter Health

Steven Lane, MD, MPH, FAAFP
Sutter EHR Ambulatory Physician Director

Main Points

- Secure health information exchange *is* happening in Northern California
- Sutter Health utilizes multiple tools to provide data access
- Clinicians have gone from a state of starving for data to drowning in data with an urgent need for better tools to support the efficient use and reconciliation of external data
- We need better and more cost effective means to retrieve, aggregate, normalize, and utilize discrete data from external sources

Sutter Health System



Serving more than 100 Northern California communities with:

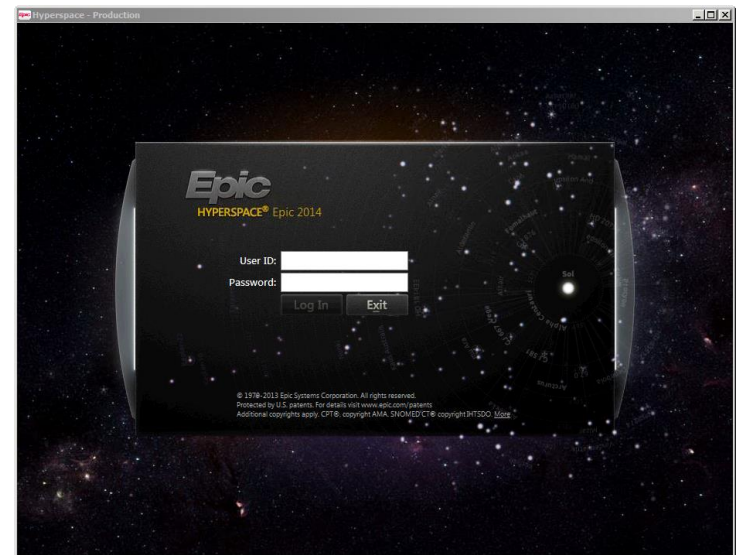
- 6,000 physicians aligned under the Sutter Medical Network – medical foundations and IPAs
- 24 acute care hospitals
- 48,000 employees
- Home health and hospice services
- Outpatient surgery and specialty care centers
- Medical research and education

5 Major Tools for Clinical Data Access

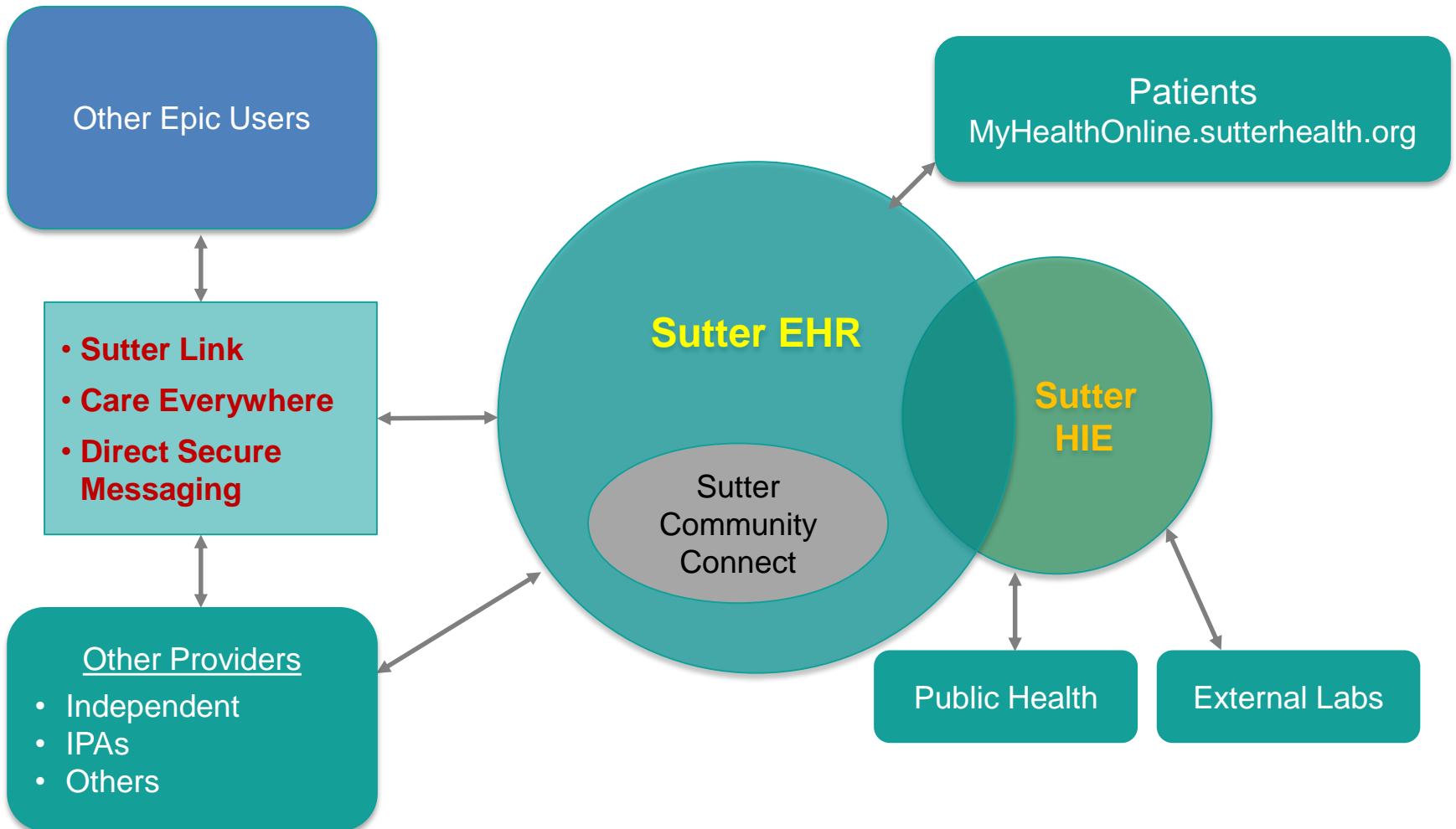
1. **Sutter EHR** for internal users
 - **Sutter Community Connect** for community providers
 - **My Health Online** personal health record for patients
2. **SutterLink** web access for external users
3. **Care Everywhere** for query based exchange with outside organizations (Adding eHealth Exchange presently)
4. **Direct** messaging for transitions of care and ad hoc push messaging
5. **Sutter HIE** for discrete data exchange to support data aggregation, analytics, and population management

1. Sutter EHR

- Live since 1999 – First Epic EMR implementation in California
- **Largest single instance** implementation of Epic software
- Over **10 million** patient records
- Over 3 million active patients
- 23 acute care facilities
- Over **64,000 active users**
- Up to 25,000 concurrent users
- Over **9,000 providers**
- Over 400 Sutter Community Connect providers
- Over **1 million** patients using *My Health Online* personal health record




Sutter EHR Interoperability



2. SutterLink

- Web-based remote access to Sutter EHR
- Open Access for affiliated providers and their staff
- Grant Access for outside hospitals (ED, L&D), nursing homes, payers, auditors, cancer registrars, coroners
- Requires two factor authentication:



Welcome to SutterLink!

This site provides you secure, reliable access to the clinical information you need to support patient care.

You will need your Sutter-assigned user name and hardware token or your user ID and password to access the data from Sutter Health's electronic health record.

[Note about supported web browsers](#)

Login to SutterLink using your:

[Token](#) [User ID and Password](#)

2. SutterLink

- Users:
 - > 8,000 users, including > 1,300 providers
- Functionality:
 - View access to EHR data
 - Messaging
 - Referrals – in and outbound
 - > 3,000 / month
 - Order entry / results
 - Lab, imaging, cardiac, pulmonary

3. Care Everywhere

- Epic's Health Information Exchange application
 - Care **Epic** – Exchange between Epic customer organizations
 - Care **Elsewhere** – Exchange with other entities including those participating in the eHealth Exchange
- The *Care Everywhere Rules of the Road* establish the trust framework for the exchange of patient information between all Care Epic customers around the world
- The Healthway DURSA supports the exchange of information over the eHealth Exchange



Care Everywhere

California Epic-using Organizations

- Northern:
 - Contra Costa County
 - John Muir Health
 - Kaiser Northern California*
 - OCHIN*
 - Providence Health
 - Santa Clara Valley Med
 - Stanford Children's
 - Stanford*
 - UC Davis*
 - UCSF Children's Oakland
 - UCSF
 - Washington Hospital
 - Southern:
 - Cedars-Sinai*
 - Community Medical Centers*
 - Kaiser Southern California*
 - Loma Linda
 - MemorialCare*
 - Rady Children's Hospital
 - Riverside Medical Clinic
 - Sansum Clinic
 - UCLA
 - UCSD
- * Also connected to eHealth Exchange



eHealth Exchange Participants in California

- Current Participants:
 - Cedars-Sinai Health System
 - Community Medical Centers
 - **Department of Defense**
 - **Dignity Health**
 - Kaiser Permanente
 - MemorialCare Health System
 - OCHIN
 - **Redwood MedNet**
 - **San Diego Health Connect**
 - Stanford Healthcare
 - UC Davis
 - **Veterans Health Administration**
 - **Walgreens**
- Onboarding:
 - John Muir Health
 - **Santa Cruz HIE**
 - Sutter Health

Bold = not on Epic

Sutter Health Care Everywhere Metrics

As of 4/30/2015

1,026,548

patients with chart linkages

1,170,313

linkages for all patients

1,913,544

records exchanged in 2015

3,800,677

records exchanged in 2014

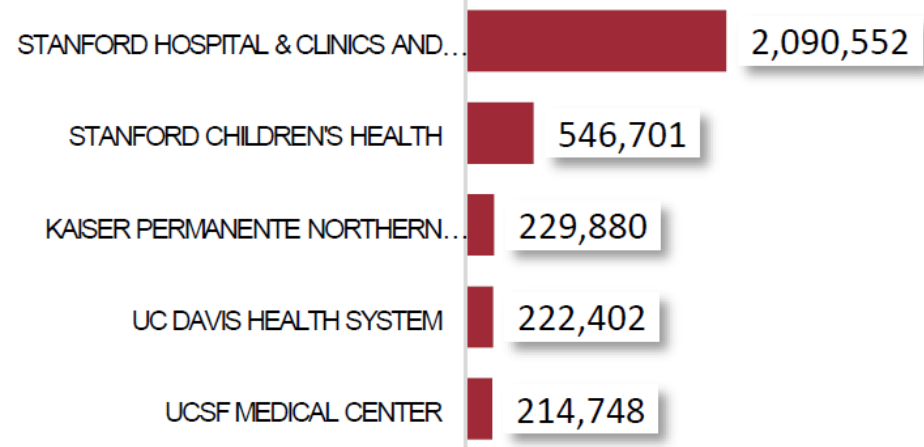
6,950,159

since Care Everywhere Go-Live in 2010



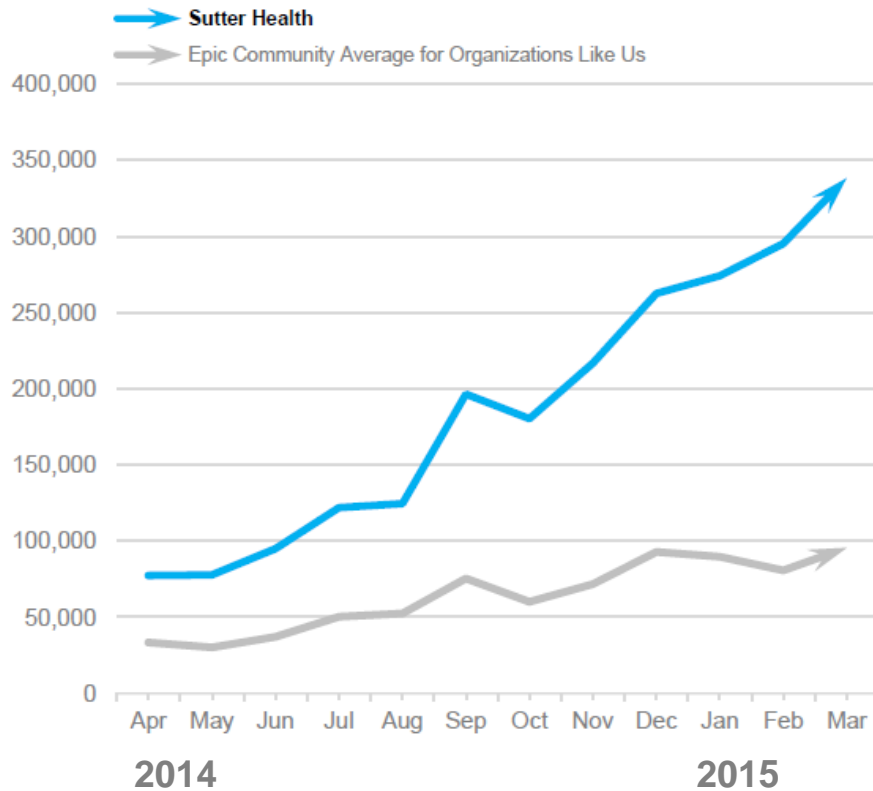
Top Patient Records Exchange Partners

(Year of 2014)

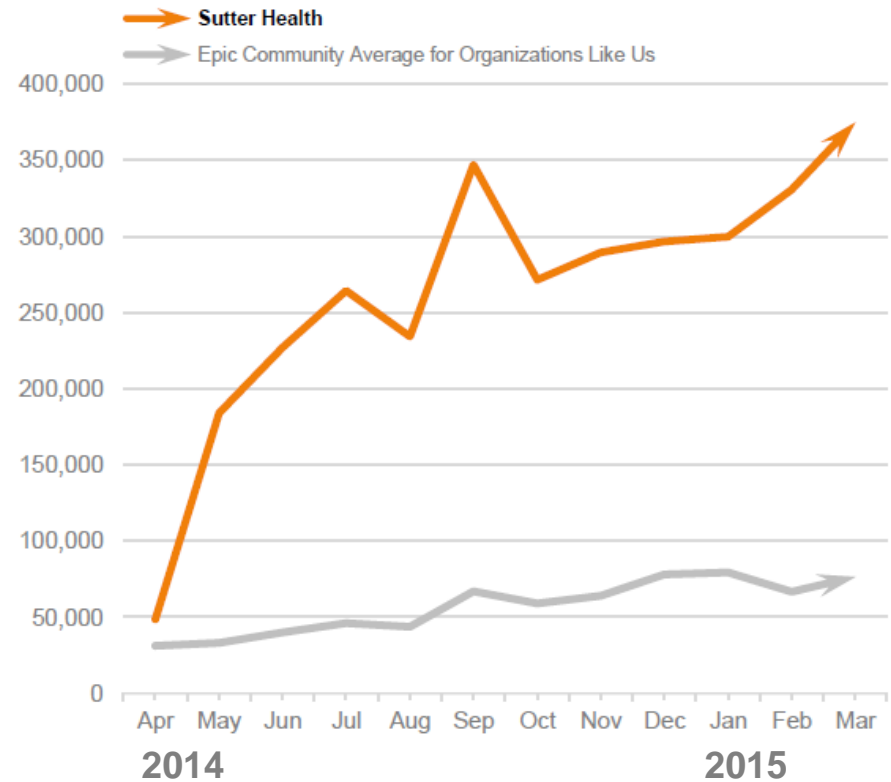


Care Everywhere Metrics

Patient Records Sent



Patient Records Received

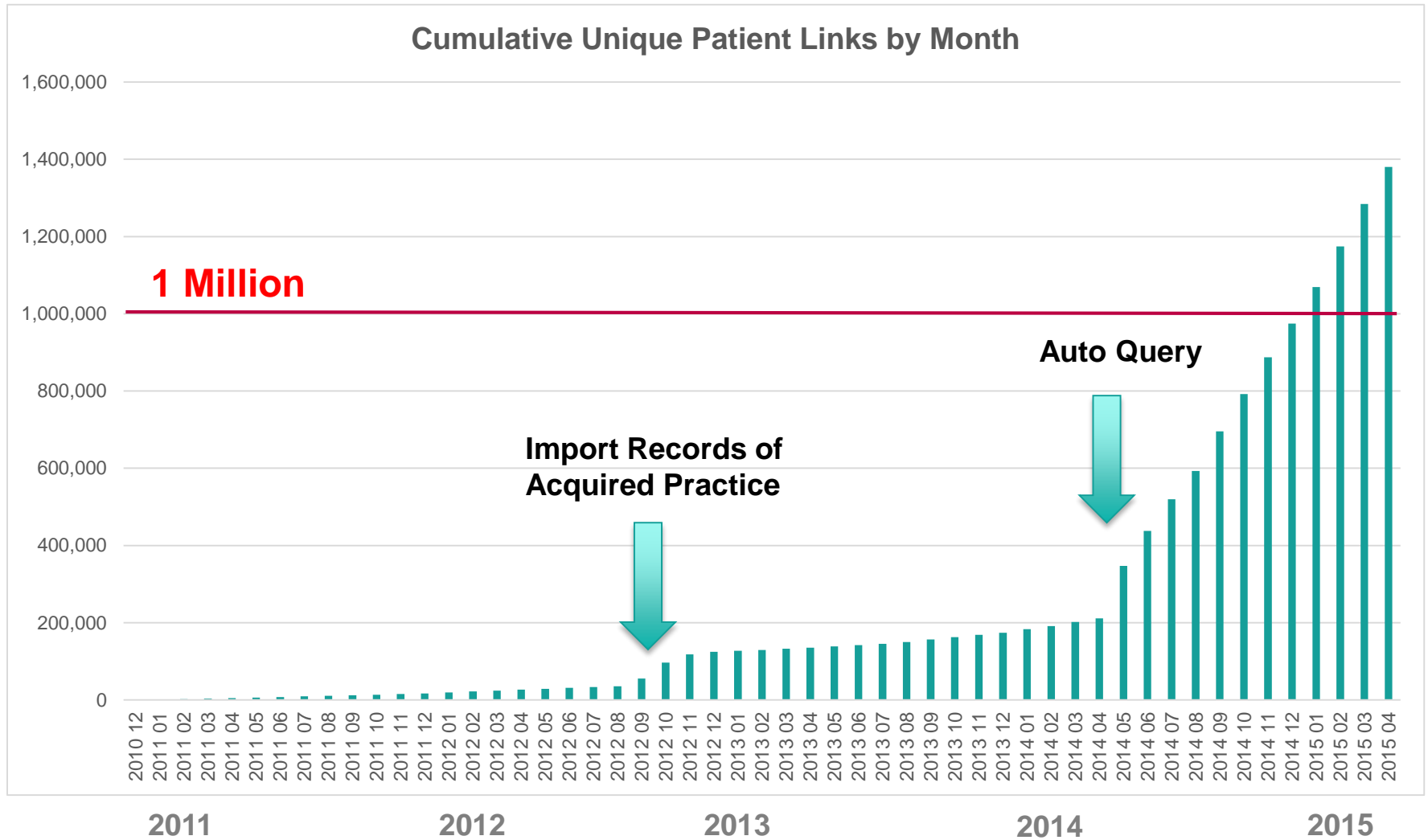


Care Everywhere Auto Query

- Checks all organizations within 50 miles of patient's home/work addresses + any organizations specified to routinely auto query
 - Overnight process for **pre-scheduled Ambulatory encounters**
 - At check-in for **all other encounters**
- Identifies available unique linkages
 - For organizations *not requiring* Authorization, Summary Clinical Information is downloaded automatically at patient arrival
 - For organizations *requiring* Authorization this must be collected from the patient, using the authorization form of the information source organization, before link is established and data is downloaded



Impact of Auto Query on Patient Linkages



Current Query Statistics

- 3,800,000 auto queries / month
~ 2% successful
- 20,000 manual queries / month
~ 12% successful
- 100,000 patients with new chart linkages / month



Care Everywhere Exchange in Northern California

Slide Deleted
Pending Publication



4. Direct Messaging

- Live since May, 2014 to support Transitions of Care requirements under Meaningful Use Stage 2
 - Summary of Care (SoC) Document sent automatically
 - At hospital discharge to designated follow-up provider
 - At the time of outpatient referral
 - if* the follow-up / referred to provider has a Direct address in Sutter EHR
- Providers may also manually send Direct messages with attached Continuity of Care Document from the EHR in basket

Direct Address Availability

- ~10,000 Sutter Health providers are currently able to send and receive Direct messages
- ~70,000 external providers and locations to which Sutter users can send Direct messages
 - Includes all organizations using the **Epic EHR** and/or the **Surescripts HISP**, plus downloaded directories from other regional information trading partners
- Onboarding with the California Trusted Exchange Network (CTEN) federated provider Directory Service to allow real time queries of directories for participating organizations

Available Directories for California Organizations

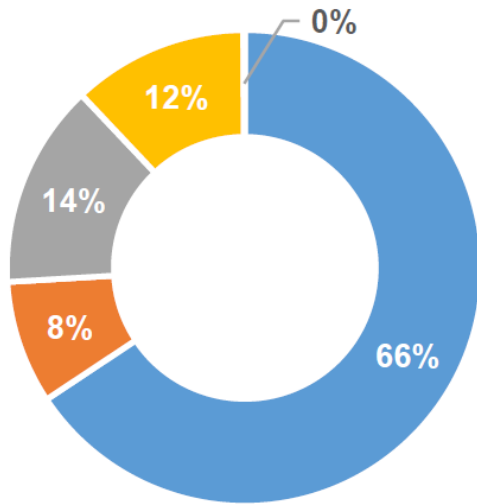
Alliance Medical Center	Providers Only	Healdsburg
Capitol GI	Both Providers and Places	Roseville
Cedars-Sinai Health System	Both Providers and Places	Los Angeles
John Muir Health	Providers Only	Walnut Creek
Davita (Falcon EHR)	Providers Only	Sacramento
Loma Linda University Medical Center	Providers Only	Loma Linda
Marin Medical Practice Concepts	Providers Only	Novato
MemorialCare Health System	Providers Only	Los Angeles
OCHIN	Both Providers and Places	Various
Rady Children's	Both Providers and Places	San Diego
Riverside Medical Clinic	Providers Only	Riverside
Sansum Clinic	Providers Only	Santa Barbara
Santa Clara Valley Medical Center	Both Providers and Places	Santa Clara
Santa Cruz HIE	Both Providers and Places	Santa Cruz
Stanford Hospital & Clinics	Both Providers and Places	Stanford
UC Davis Health System	Both Providers and Places	Davis
UCLA Medical Center	Providers Only	Los Angeles
UCSF Benioff Children's Hospital	Providers Only	Oakland
UCSF Medical Center	Places Only	San Francisco
Tahoe Forest Health System	Both Providers and Places	Truckee
Washington Hospital Health System	Providers Only	Fremont

Direct Messaging Exchange Statistics

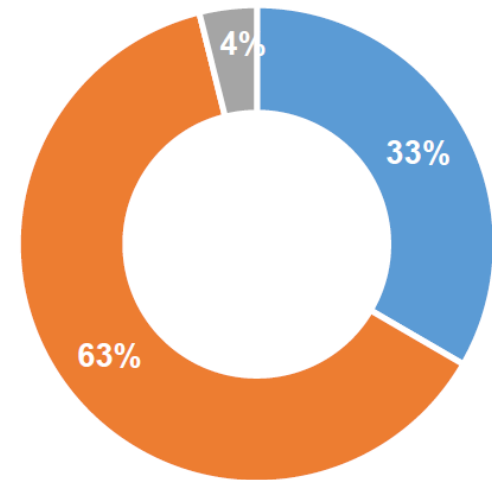
January 4, 2015 - April 4, 2015

Workflow Context

Incoming Messages
27,192



Outgoing Messages
7,624



■ IP Discharge ■ Referral ■ Unknown
■ ED Discharge ■ In Basket

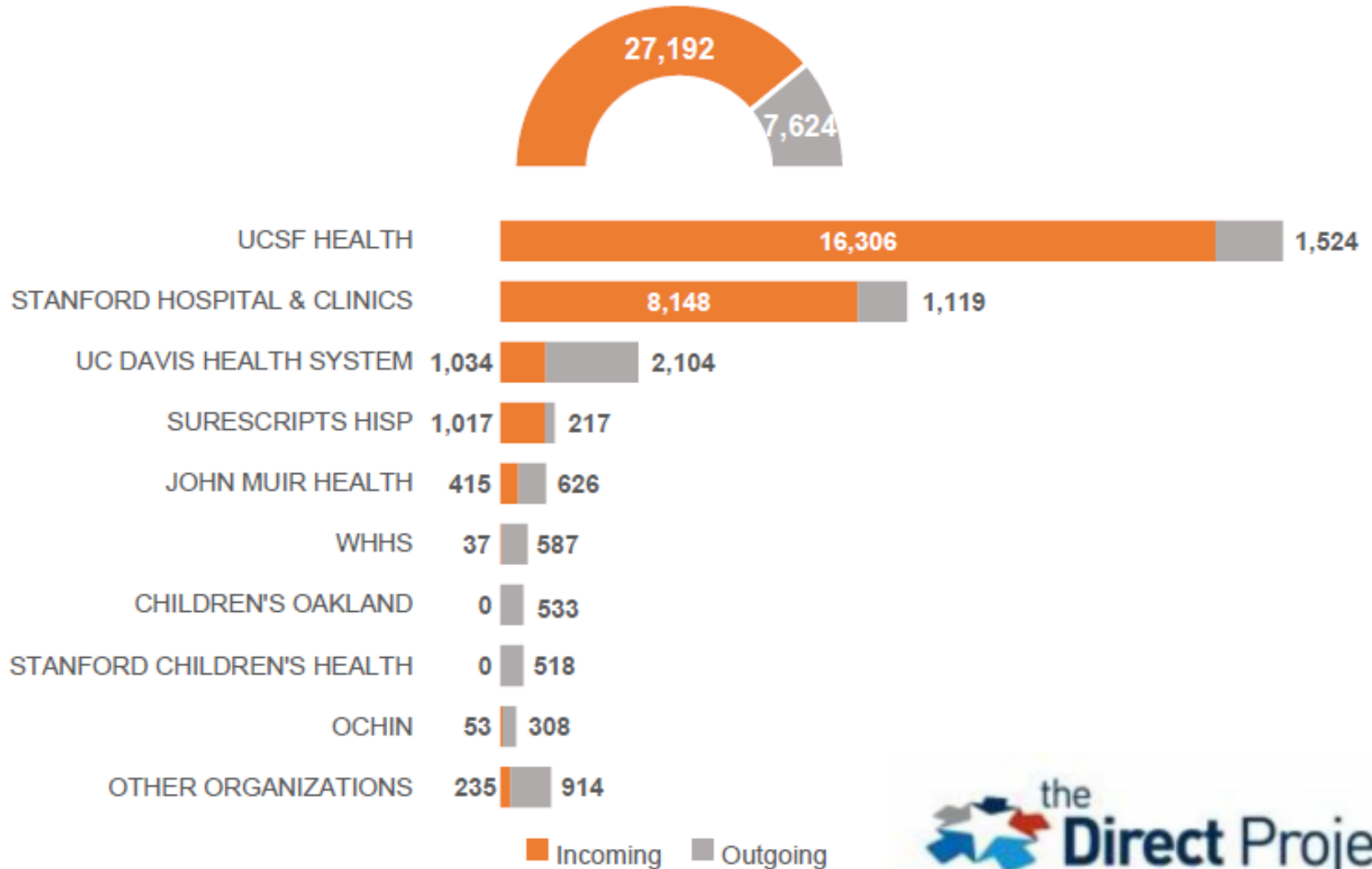
■ IP Discharge ■ Referral ■ Unknown

Unknown includes Event Notifications and Patient-generated messages

Direct Messaging Exchange Statistics

January 4, 2015 - April 4, 2015

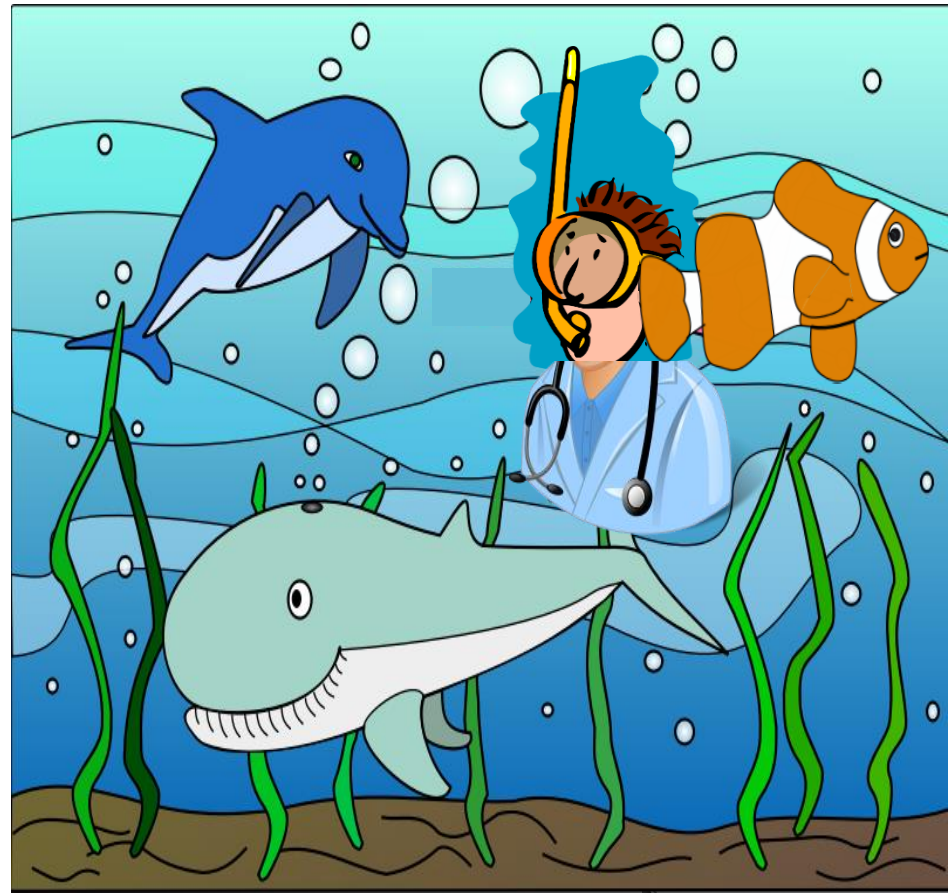
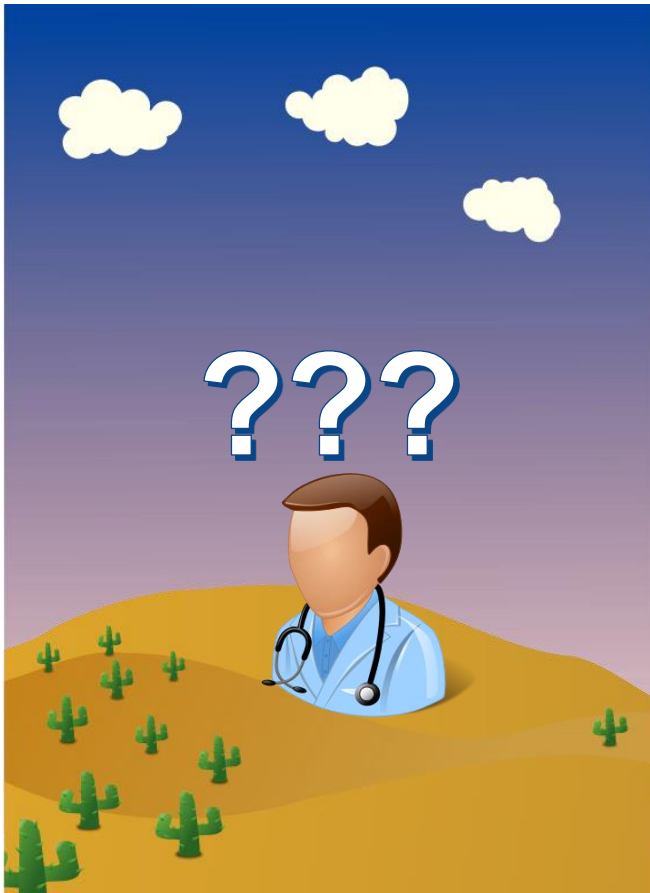
Incoming vs Outgoing Direct Messages



5. Sutter HIE

- Currently Live:
 - INbound
 - From Sutter EHR: Patient demographics, Radiology and ECG results, Transcription,
 - From external sources: Sierra Nevada Lab results
 - OUTbound
 - Syndromic Surveillance reporting to public health
 - Sierra Nevada Lab results to Sutter EHR
- Short term focus:
 - CCDs from Sutter Care at Home
 - Provide access to internal users from within Sutter EHR
 - Online access for external providers
 - Linkages with other HIEs
- Long term vision:
 - Repository for aggregated, normalized, discrete data from both internal and external sources

Dr. Steve's quest for data on his patients has evolved...



Drowning in Data

- Reconciliation of Discrete Data
 - Problems: Of 1,026,139 received, 1.4% reconciled
 - added to local EHR or discarded
 - Medications: Of 1,318,113 received, 2.3% reconciled
 - Allergies: Of 267,696 received, 1.8% reconciled
- Of 175K encounters in one week:
 - 66 K (38%) with outside data available
 - 33 K (19%) with new outside data
 - 2 K (6% of those with new data) document accessed

The Current Challenge

- Clinicians suddenly have tremendous ability to receive clinical data from and send data to external organizations
- Technical standards make some discrete data (problems, meds, allergies) available for manual reconciliation
- Tools and workflows need to evolve to leverage the available data at the point of care
- We need automated and cost effective means to retrieve, aggregate, normalize, and utilize more discrete data to
 - satisfy proposed Meaningful Use Stage 3 requirements
 - Support population management and new care models