# Healthier Communities Through Interoperability

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Dignity Health

# The Patient at the Center


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# Where Are We?

- 1 in 3 patients

- Average Medicare patient sees 7 providers annually

# Where Are We…PCPs and Specialists

- 229
- 117

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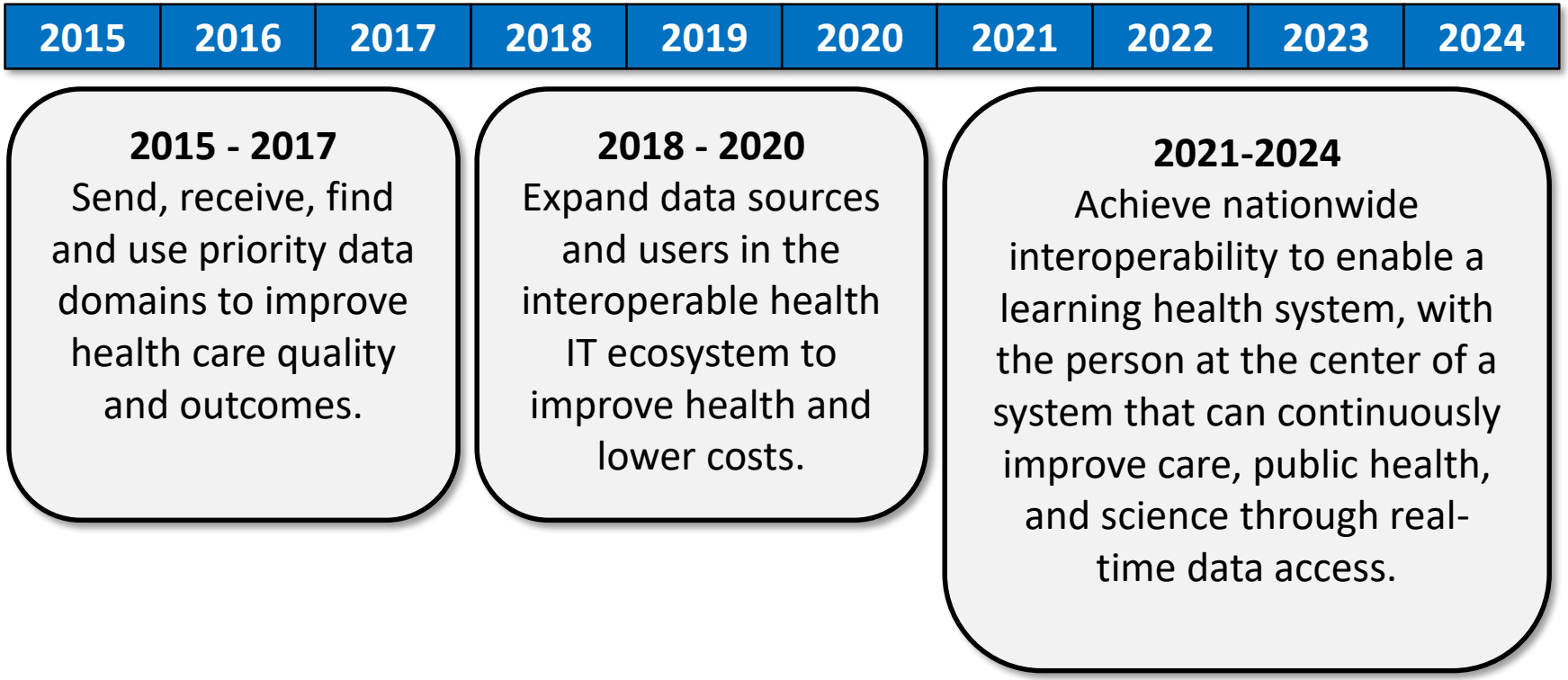
# Interoperability

- The ability of a system to exchange electronic health information with and use electronic health information from other systems without special effort on the part of the user.
- The ability for health systems to electronically send, receive, find, and use health information with other electronic systems outside their organization.

# Key Types and Methods of HIE

- Directed – send and receive electronically between care providers.  Generally push.
  - HISP
- Query Based – find and/or request.  Pull.
  - Local/Regional HIO/National Network
- Consumer Mediated -  patients aggregate and control use of information.
  - Portals, Apple Health Records

# ONC Interoperability Roadmap



# Nationwide HIE

| 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

The Office of the National Coordinator for Health Information Technology

NHIN Nationwide Health Information Network

HealtheWay

carequality

the sequoia project


eHealth Exchange

commonwell HEALTH ALLIANCE

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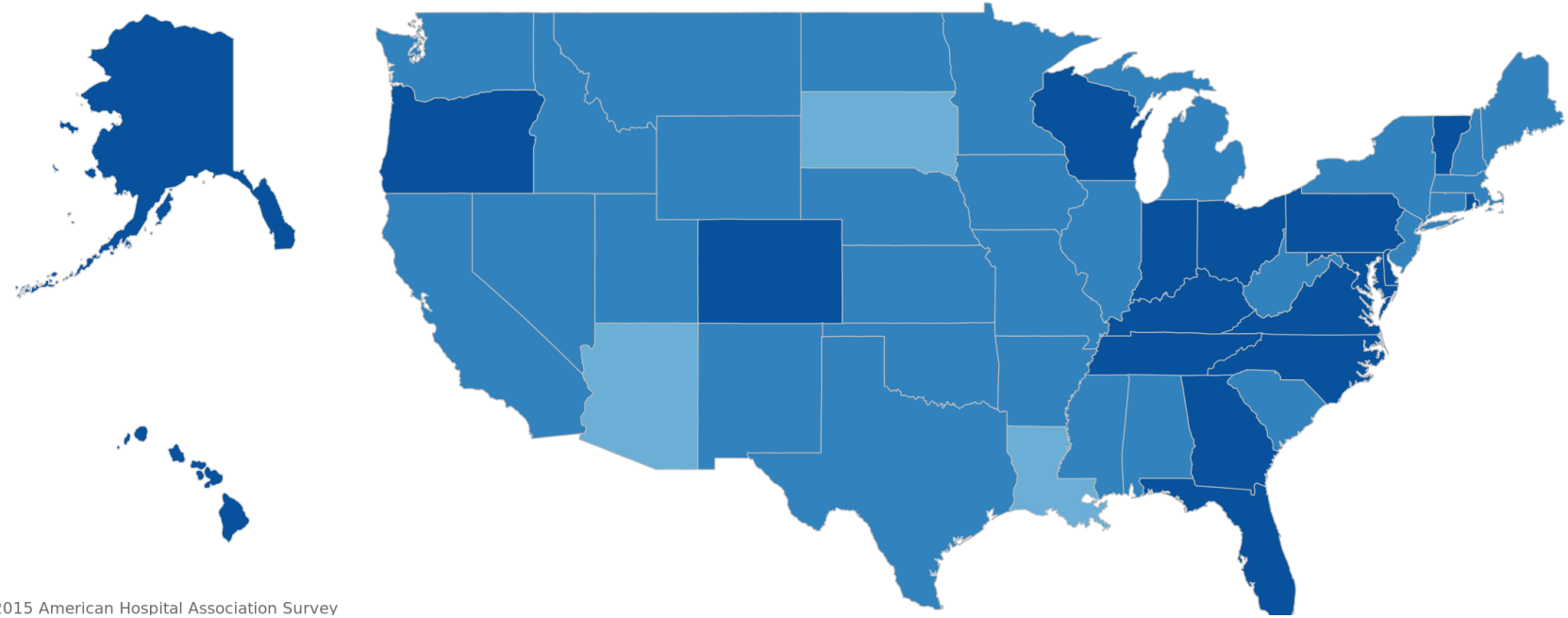
# Current HIE Capability

% of Hospitals with Capability to Exchange Summary of Care Record with Any Outside Providers | National Avg = 76%

0 - 20 % 21 - 40 % 41 - 60 % 61 - 80 % 81 - 100 %



2015 American Hospital Association Survey

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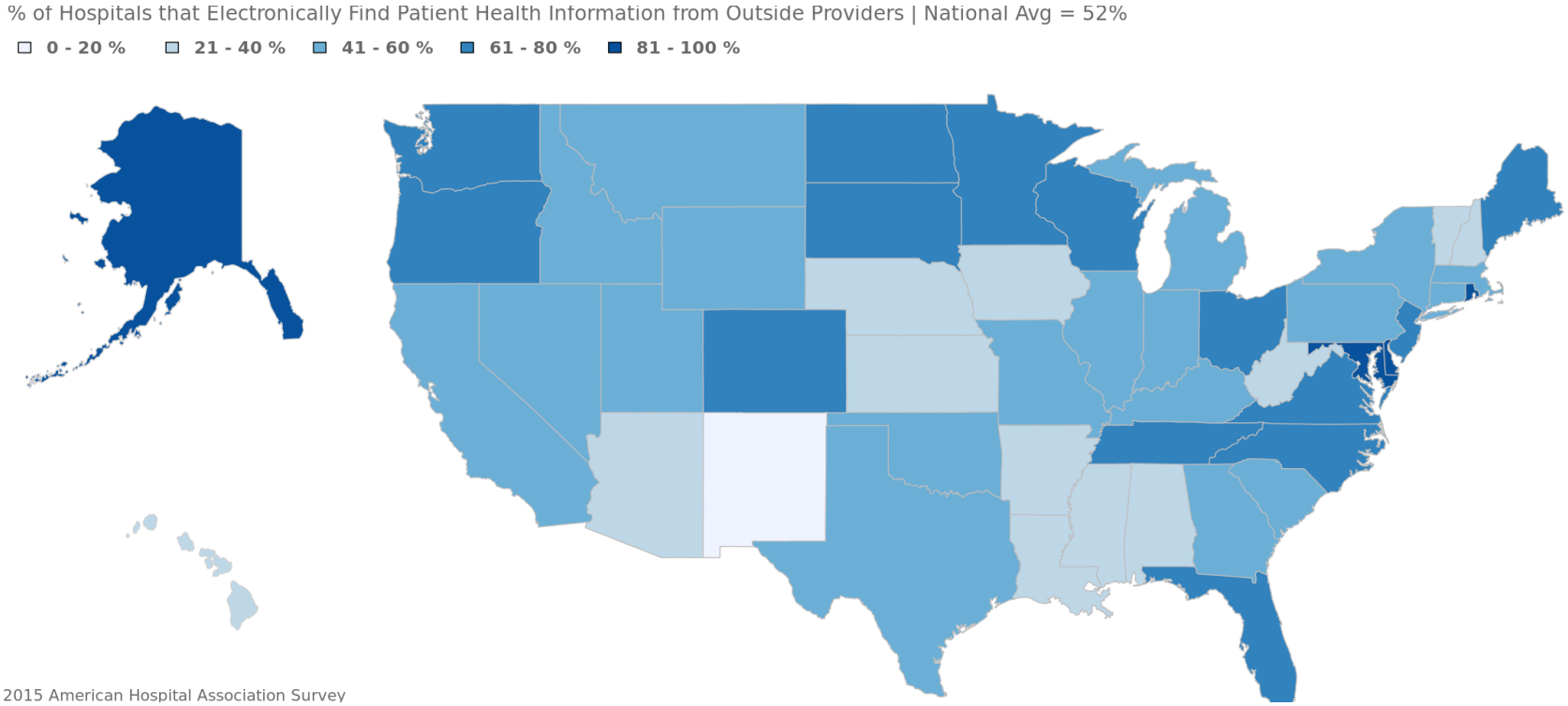
# Finding data




2015 American Hospital Association Survey

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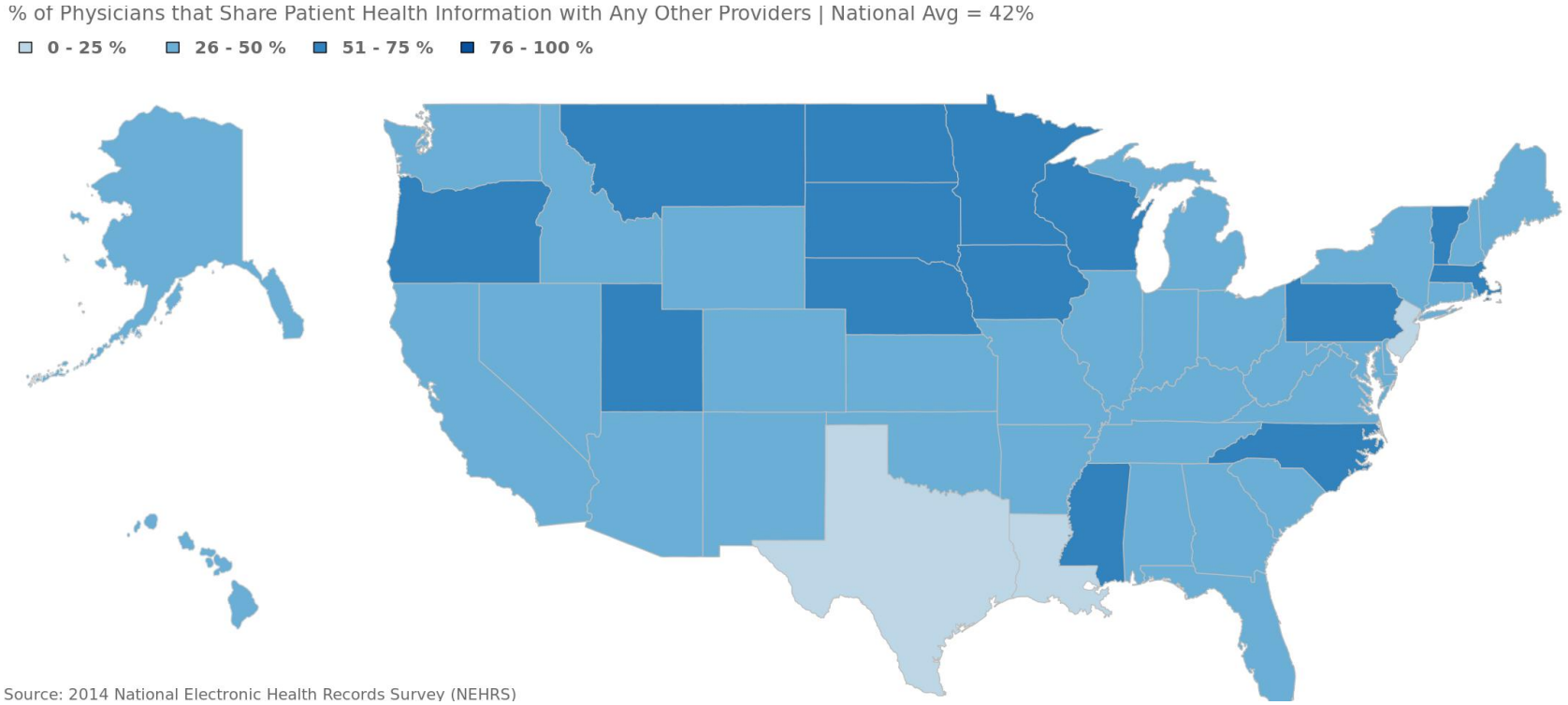
# Sharing




Source: 2014 National Electronic Health Records Survey (NEHRS)

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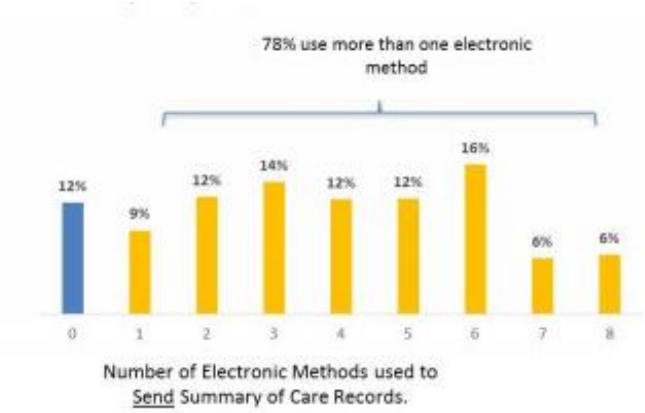
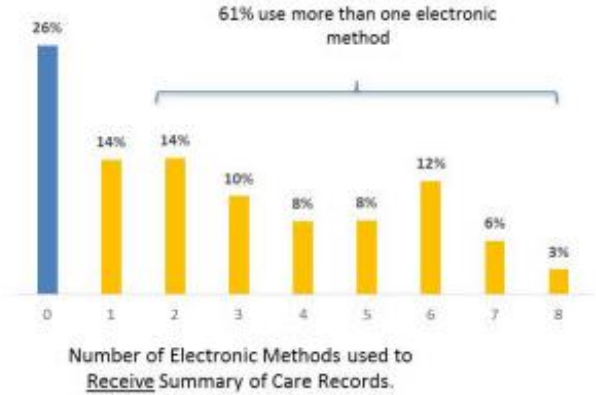
# Progress - Send and Receive Multiple Methods




Number of Electronic Methods used to Send Summary of Care Records.




Number of Electronic Methods used to Receive Summary of Care Records.

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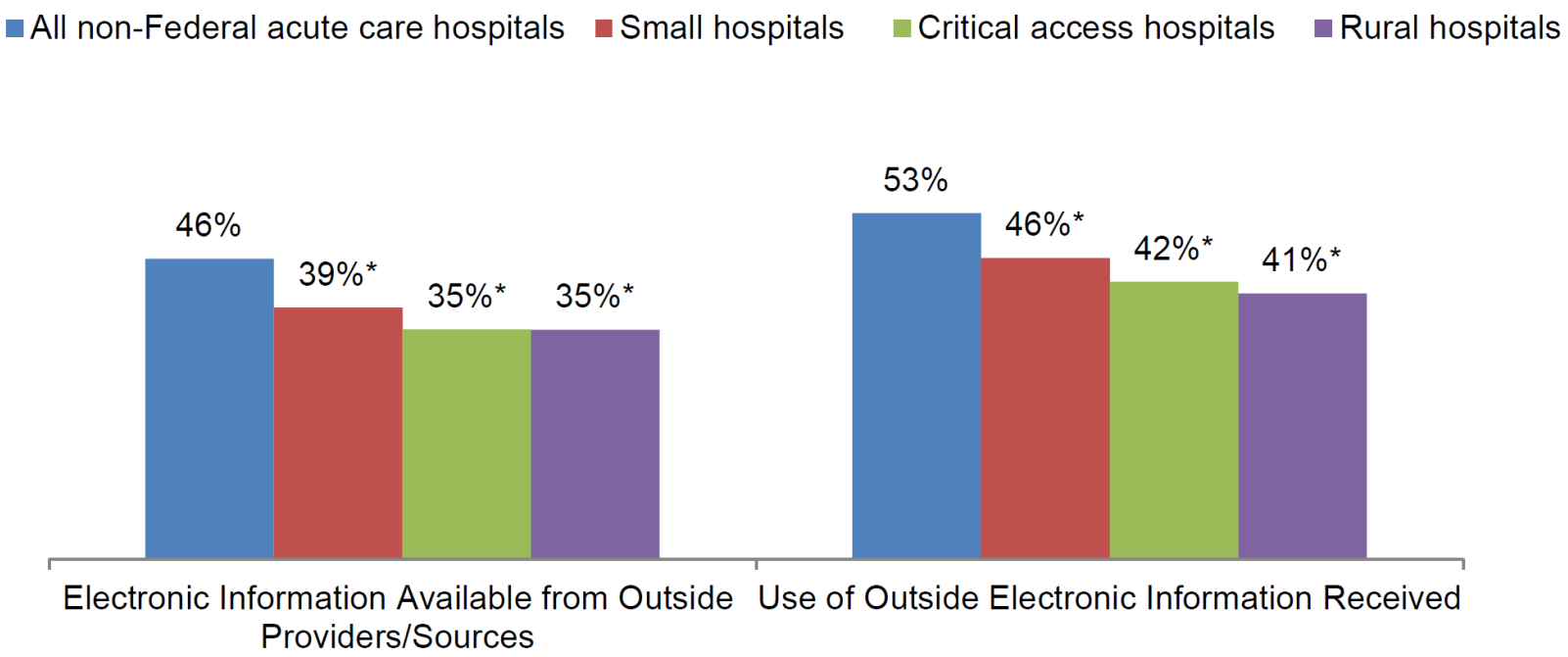
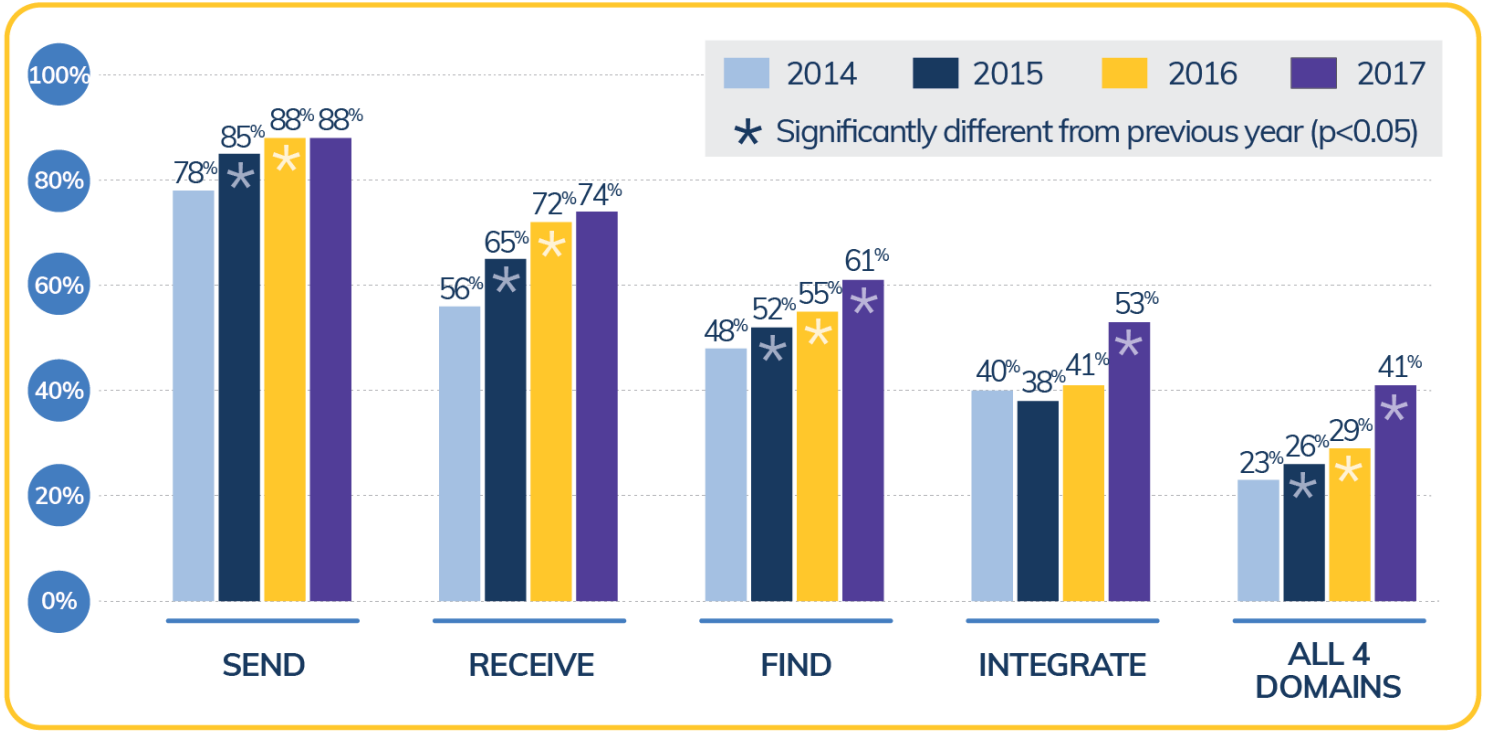

All non-Federal acute care hospitals
Small hospitals
Critical access hospitals
Rural hospitals
46%
39%*
35%*
35%*
53%
46%*
42%*
41%*
Electronic Information Available from Outside Providers/Sources
Use of Outside Electronic Information Received

# Hospital Usage

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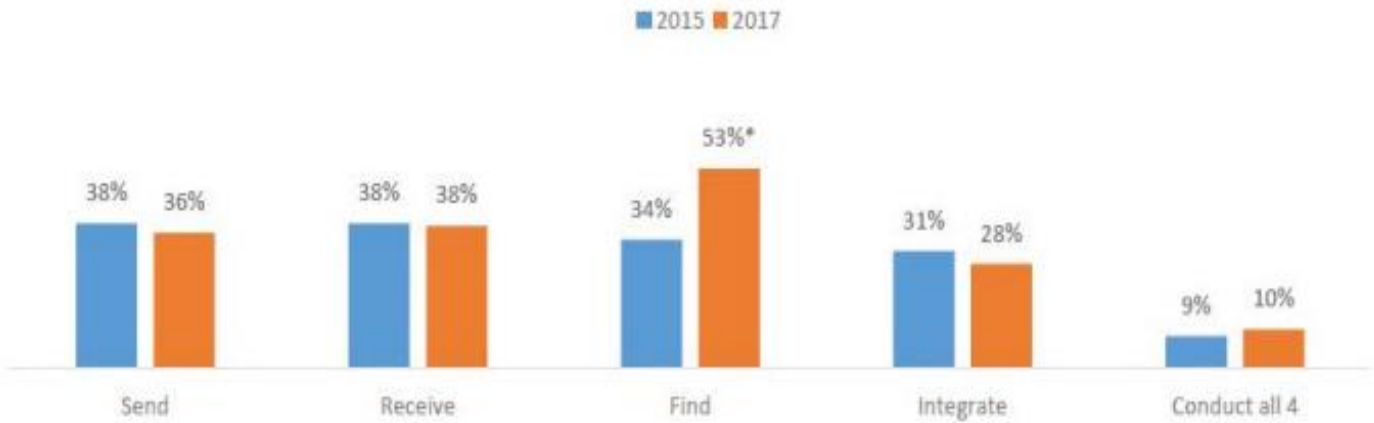
# Office Based Usage

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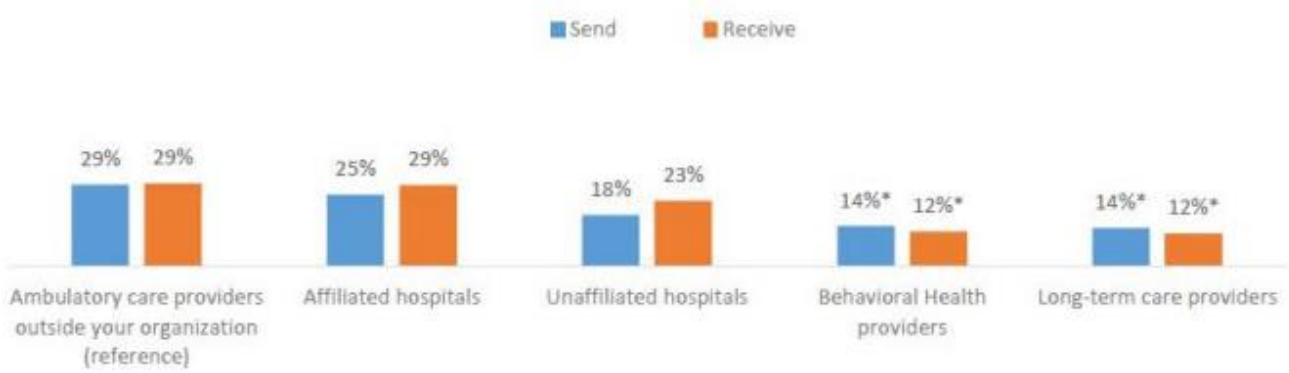
# Office Based Exchange

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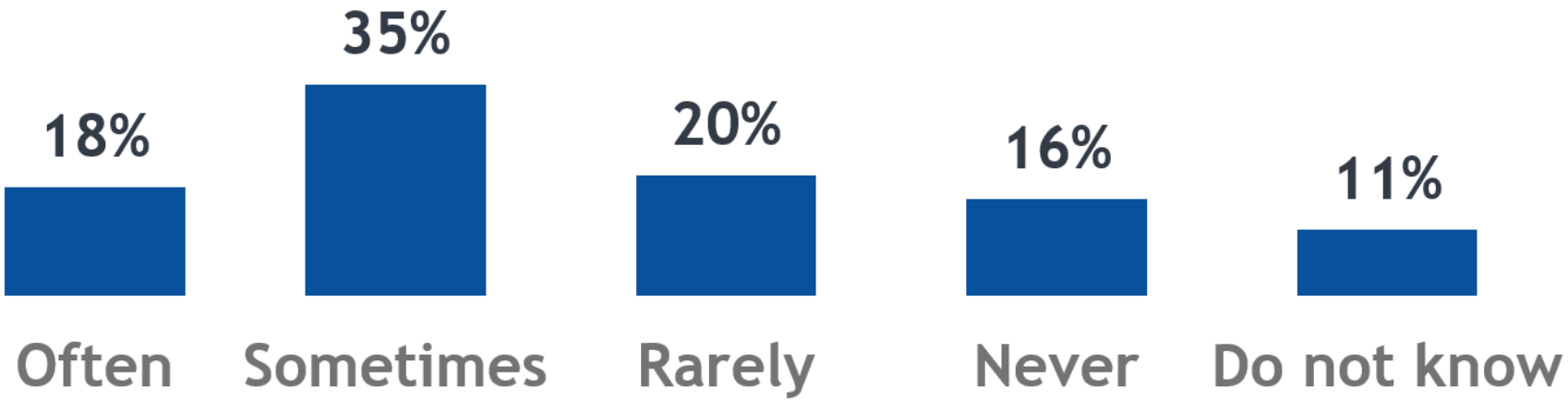
# How Often?

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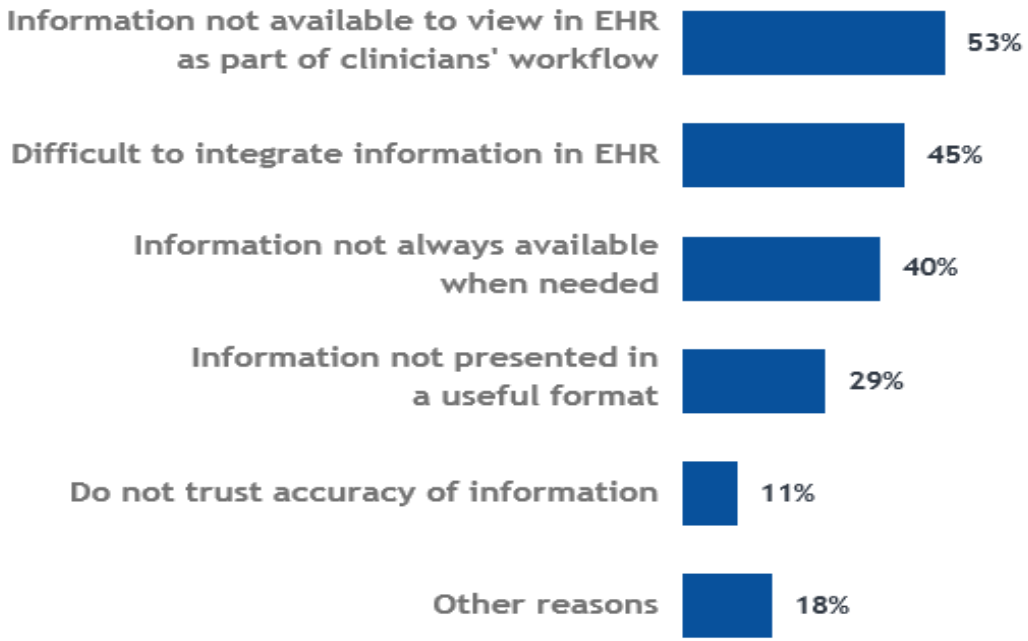
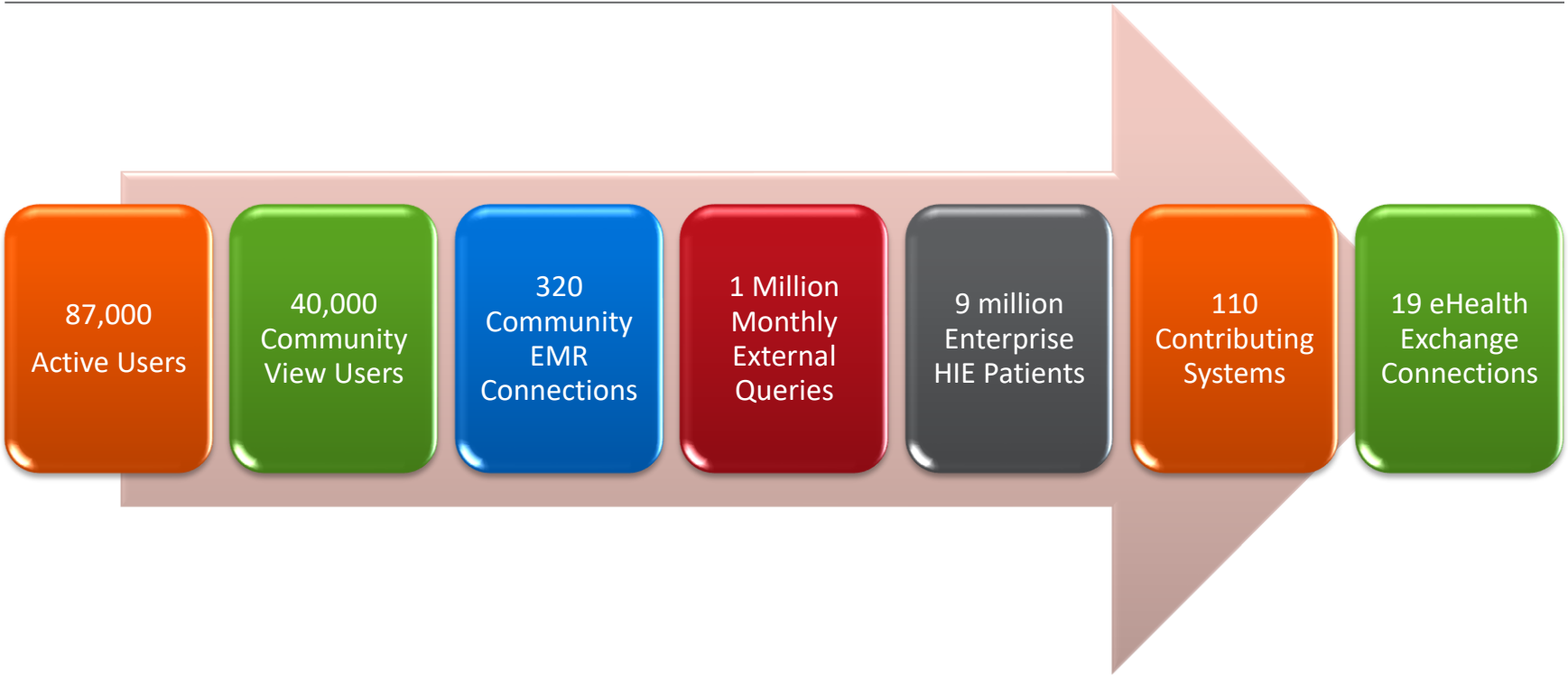
# Adoption


Information not available to view in EHR as part of clinicians' workflow
53%
Difficult to integrate information in EHR
45%
Information not always available when needed
40%
Information not presented in a useful format
29%
Do not trust accuracy of information
11%
Other reasons
18%

# Interoperability Landscape at Dignity Health

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# Community View

UC DAVIS HEALTH SYSTEM

Hill Physicians

healthcurrent

UCSF Benioff Children's Hospital San Francisco

Dignity Health Medical Foundation

SACVALLEY MEDSHARE

Santa Cruz Health Information Exchange

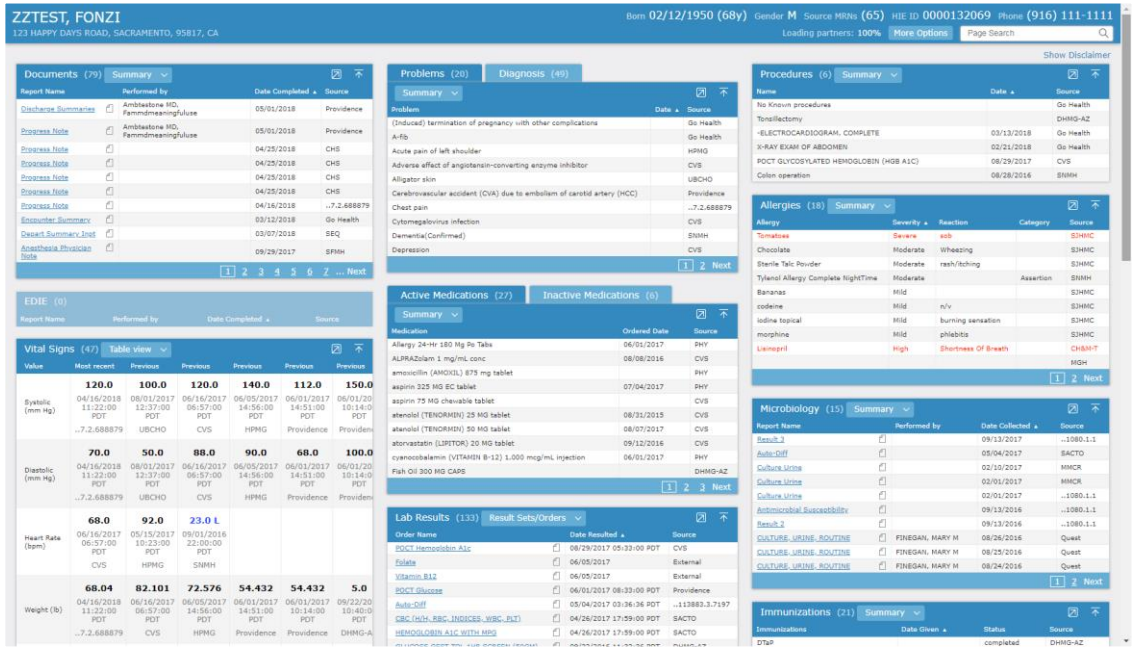
Sutter Health

PROVIDENCE Health & Services

CEDARS-SINAI

SimonMed See Tomorrow Today

Dignity Health | GoHealth URGENT CARE




UCSF MARSHALL MEDICAL CENTER

ARIZONA DEPARTMENT OF HEALTH SERVICES

KAISER PERMANENTE

INLAND Empire HIE LINKING DATA TOGETHER

minute clinic | the medical clinic in CVS pharmacy

HealtHIE NEVADA YOUR HEALTH INFORMATION EXCHANGE

intel | Premise Health Keep your edge.

OC PRHIO

Stanford HEALTH CARE

U.S. Department of Veterans Affairs

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# More continuum….


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# EMS HIE

EMS ePCR

ALERT

NEMSIS format CDA to ED dashboard

Emergency Department

EMS ePCR

FILE

NEMSIS 3 XML to HL7 Structured data, not PDF

Hospital EHR

# PULSE


*Access to web portal with CCD information on patients being treated in an alternate care site, shelter or field hospital*


*Access to EHRs on relocated patients from within existing hospital EHR system*

***Statewide***

***Intended for use during disaster response***

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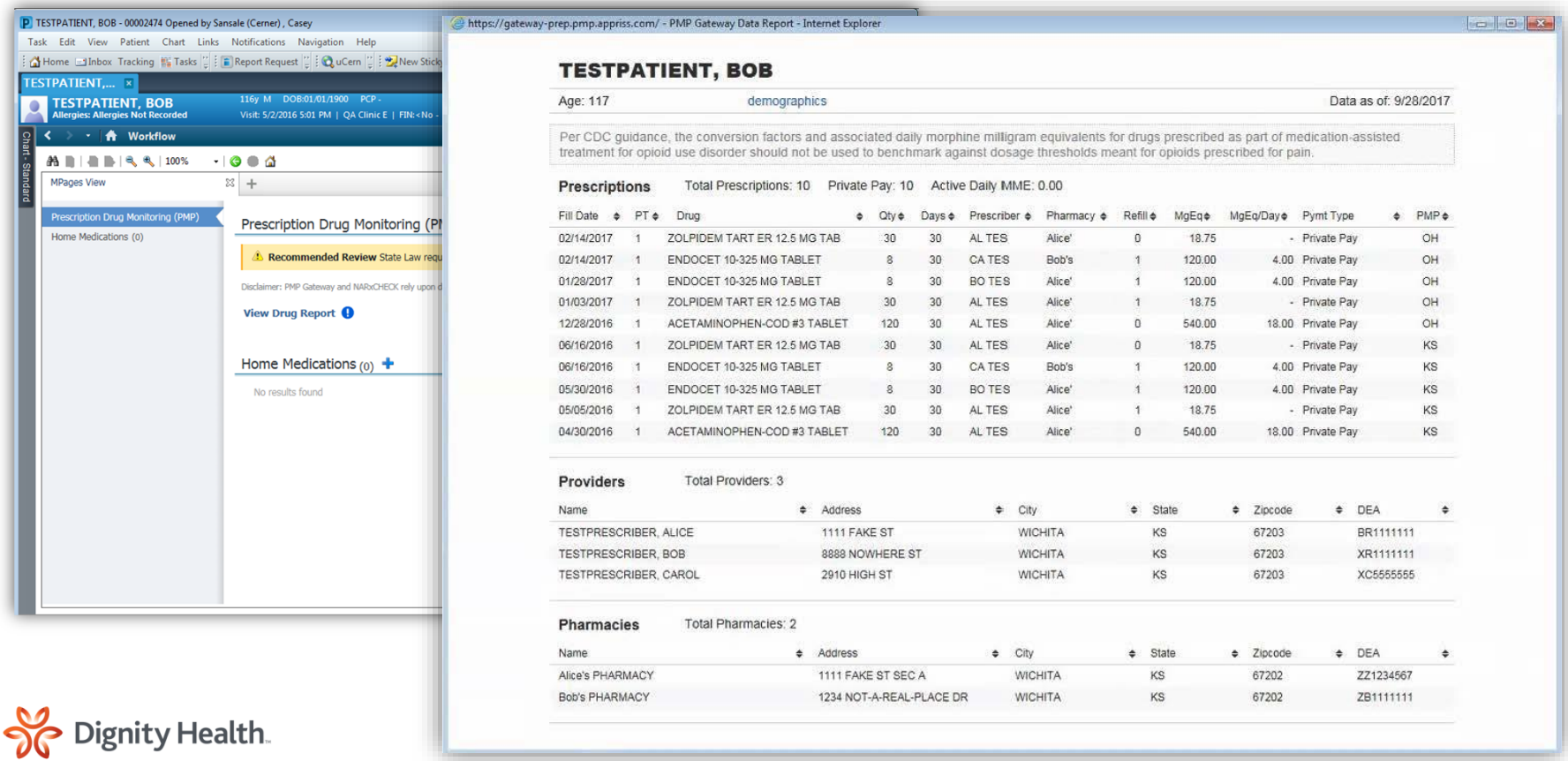
# Addressing opioid crisis

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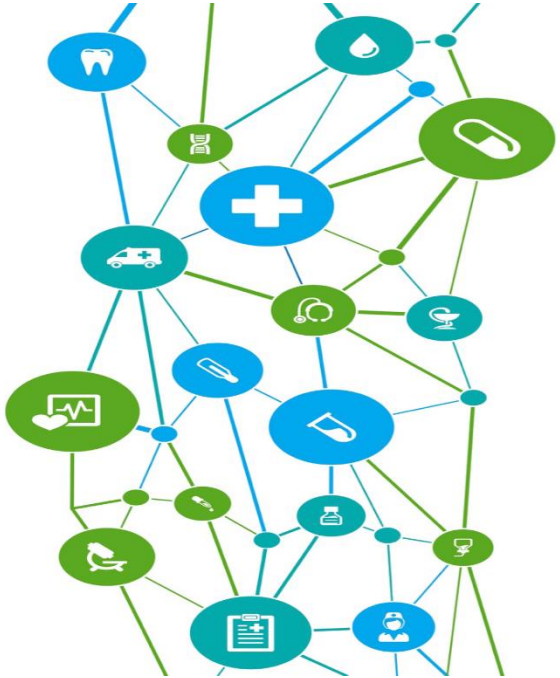
# But Wait - How Do We Get to…

**2021-2024**

Achieve nationwide interoperability to enable a learning health system, with the person at the center of a system that can continuously improve care, public health, and science through real-time data access.

# Framework of Networks



- How do you get nationwide connectivity?
- Data sharing networks increase connections exponentially.
- If you connect six clinics, you might reach a few dozen physicians.
- If you connect six networks, you can reach thousands of physicians.

# California HIE Coverage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- Mercy Medical Center Mt. Shasta
- Mercy Medical Center Redding
- St. Elizabeth Community Hospital
- Sierra Nevada Memorial Hospital
- Mercy Hospital of Folsom
- Mercy San Juan Medical Center
- Methodist Hospital of Sacramento
- Mercy General Hospital
- Woodland Healthcare
- St Joseph's Behavioral Health Center
- St Joseph's Medical Center
- Mark Twain Medical Center
- Mercy Medical Center
- Bakersfield Memorial Hospital
- Mercy Hospital Downtown
- Mercy Hospital Southwest
- St. Francis Memorial Hospital
- St. Mary's Memorial Hospital
- Sequoia Hospital
- Dominican Hospital
- French Hospital Medical Center
- Arroyo Grande Community Hospital
- Marian Regional Medical Center
- St. John's Pleasant Valley Hospital
- St. John's Regional Medical Center
- Northridge Hospital Medical Center
- Glendale Memorial Hospital
- California Hospital Medical Center
- St. Mary's Medical Center
- Community Hospital of San Bernardino
- St. Bernadine Medical Center

**External Federated Sources**

- Cedars-Sinai
- CVS Minute Clinic
- DaVita Kidney Care
- Department of Defense
- Hill Physicians Medical Group
- California Immunization Registry
- Kaiser Permanente
- Manifest MedEx
- MemorialCare
- Premise Health
- Providence (SoCal)
- SacValley MedShare
- SCHIE OCPRHIO
- Stanford
- Sutter
- UC Davis
- UCSF Benioff Children's
- UCSF
- Veterans Affairs

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# WHO Community Health

- “Environmental, social, and economic resources to sustain emotional and physical well being among people in ways that advance their aspirations and satisfy their needs in their unique environment.”
- Focus on a defined geographical community.
- The health characteristics of a community are often examined using geographic information system (GIS) software and public health datasets.

# The Real Continuum….






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# It’s All About Information…

EVOLUTION OF PUBLIC HEALTH DATA AND INFORMATICS NEEDS IN THE PUBLIC 1.0, 2.0, AND 3.0 ERAS

| Public Health 1.0 | Public Health 2.0 | Public Health 3.0 |
|---|---|---|
| **Characteristics of Essential Data and Informatics Infrastructure** | | |
| ▫ Counts and trends | ▫ Exposure-outcome cohort studies and causal inferences | ▫ Geospatial inferences and trend |
| ▫ Vital statistics and registration | ▫ Relative risks and attributable risk estimates | ▫ Layering of data and multilevel-systems thinking |
| ▫ Registry systems of tracking mortality and diseases | ▫ Methods to control for confounding and sampling bias | ▫ Nontraditional data sources |
| ▫ Identify pathogens and mode of transmission | ▫ Continuous outcomes and exposure | ▫ Digital bridges that interface with other sources |
| ▫ Binary exposure and binary outcomes | ▫ Longer time frame | ▫ Community-level indicators |
| ▫ Population statistics based on sum of individuals | ▫ Measures of disparities, quality of life, and well-being | ▫ Capacity to leverage big data |
| | ▫ Health services research | |
| **Public Health Actions Driven by Data Insight** | | |
| ▫ Developing diagnostic and therapeutic means to identify and remove pathogens | ▫ Managing chronic disease risks through screening and behavioural change | ▫ Coordinated multisectoral monitoring and action plan |
| ▫ Coordinating actions to disrupt disease transmission such as quarantine, vaccination, and treatment | ▫ Consistent surveillance and survey infrastructure | ▫ Prediction modeling based on complex set of risk drivers |
| | ▫ Professionalized functions and performance standards of governmental public health agencies | ▫ Data and evidence as communication and policy tools rather than as the endpoint |
| | | ▫ Wellness promotion through changing the environmental, social, and economical contexts |

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# Whole Person Care

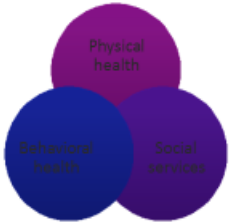
## Whole Person Care Overview

**Overarching goal for Whole Person Care (WPC)**

- Coordination of health, behavioral health, and social services
- Comprehensive coordinated care for the beneficiary resulting in better health outcomes

**WPC Pilot entities collaboratively to:**

- Identify target populations
- Share data between systems
- Coordinate care real time
- Evaluate individual and population progress






## Goals and Strategies

**Increase, improve, and achieve:**

- Integration among county agencies, health plans, providers, and other participating entities
- Coordination and appropriate access to care
- Access to housing and supportive services
- Health outcomes for the WPC population
- Data collection and sharing among local entities
- Targeted quality and administrative improvement benchmarks
- Infrastructure that will ensure local collaboration over the long term

**Reduce:**

- Inappropriate emergency department and inpatient utilization

# Bloomberg Healthy Cities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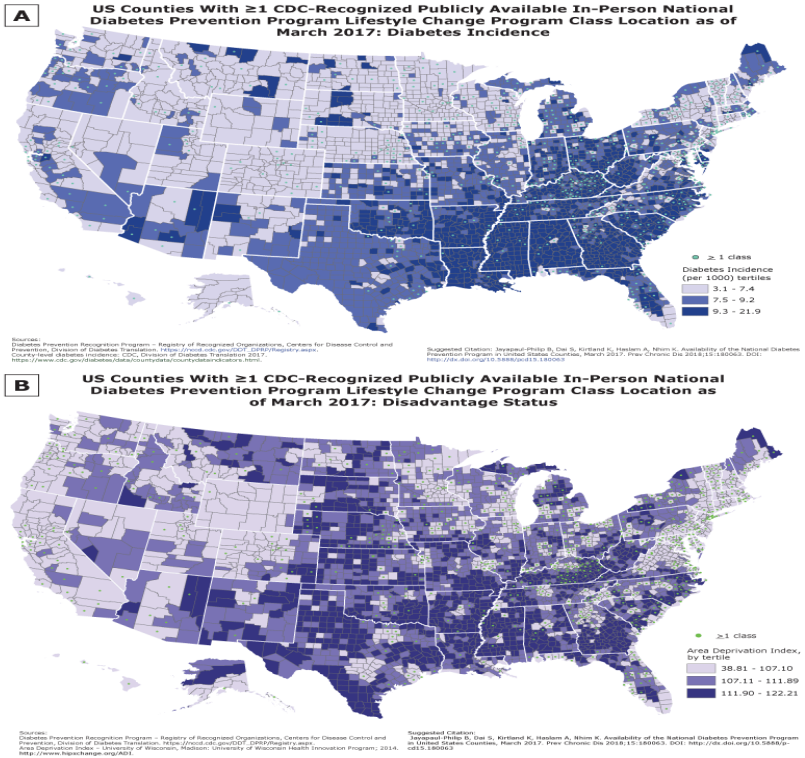
# Partnership in Our Communities

- **San Francisco Department of Public Health Partnership for Healthy Cities EHR Chronic Disease Initiative:** Bridging the Divide Between Clinical Health System Data and Public Health
- San Francisco Department of Public Health (SFDPH) initiative for all major health systems across San Francisco to share electronic health record (EHR) data to better characterize, monitor, and respond to chronic diseases in San Francisco.

# Use Case - Diabetes

- **Diabetes**
  - Data to be collected: HbA1C, age, ethnicity, gender, zip code, address (if possible), etc.
  - Application of data: SFDPH currently funds healthy produce vouchers to encourage healthy eating.
  - Mechanisms can be devised to promote food voucher distribution to a specified registry of patients at health systems. In addition, SFDPH is advising a city-wide roll out of a MediCal benefit that provides medically tailored home delivered meals to patients with diet

# Geomapping

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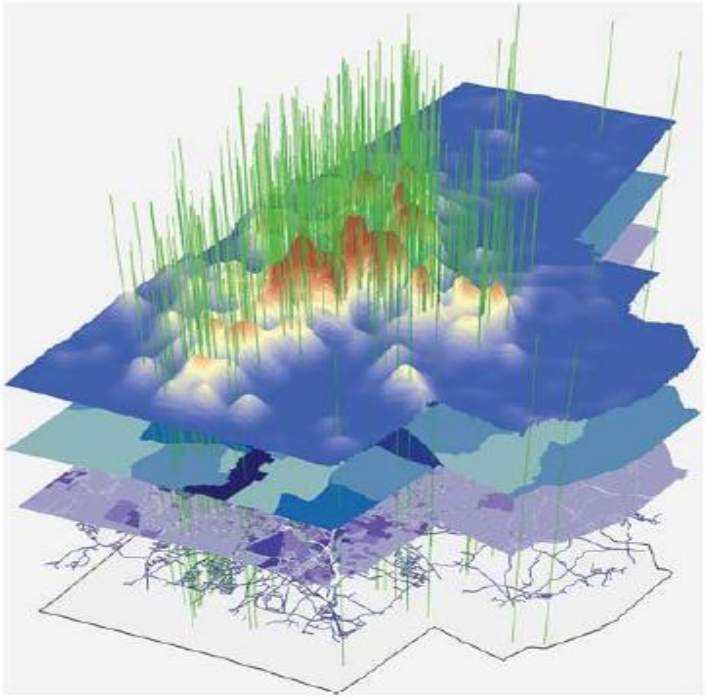
# Geomapping

**Example Of Geographic Health Information Systems (GHIS) For Mapping The Terrain Of Diabetes In Durham County, North Carolina**



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# Driving Data Liquidity for Care Model Transformation

- 21st Century Cures
- TEFCA
- Information Blocking

# Considerations for Health Plans

- Value based – quality/outcomes
- Interoperability foundational for data liquidity
- Coordination across continuum
- True population and community based
- Adopting and employing emerging standards
- Consumer/patient engagement

# Putting it Together!


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# Thank You

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