

Health Officers Association of California (HOAC)
Spring 2016 Semiannual Meeting
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Disease Reporting and the Health Information Exchange

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Public Health Reportable

How do we get [^]data?



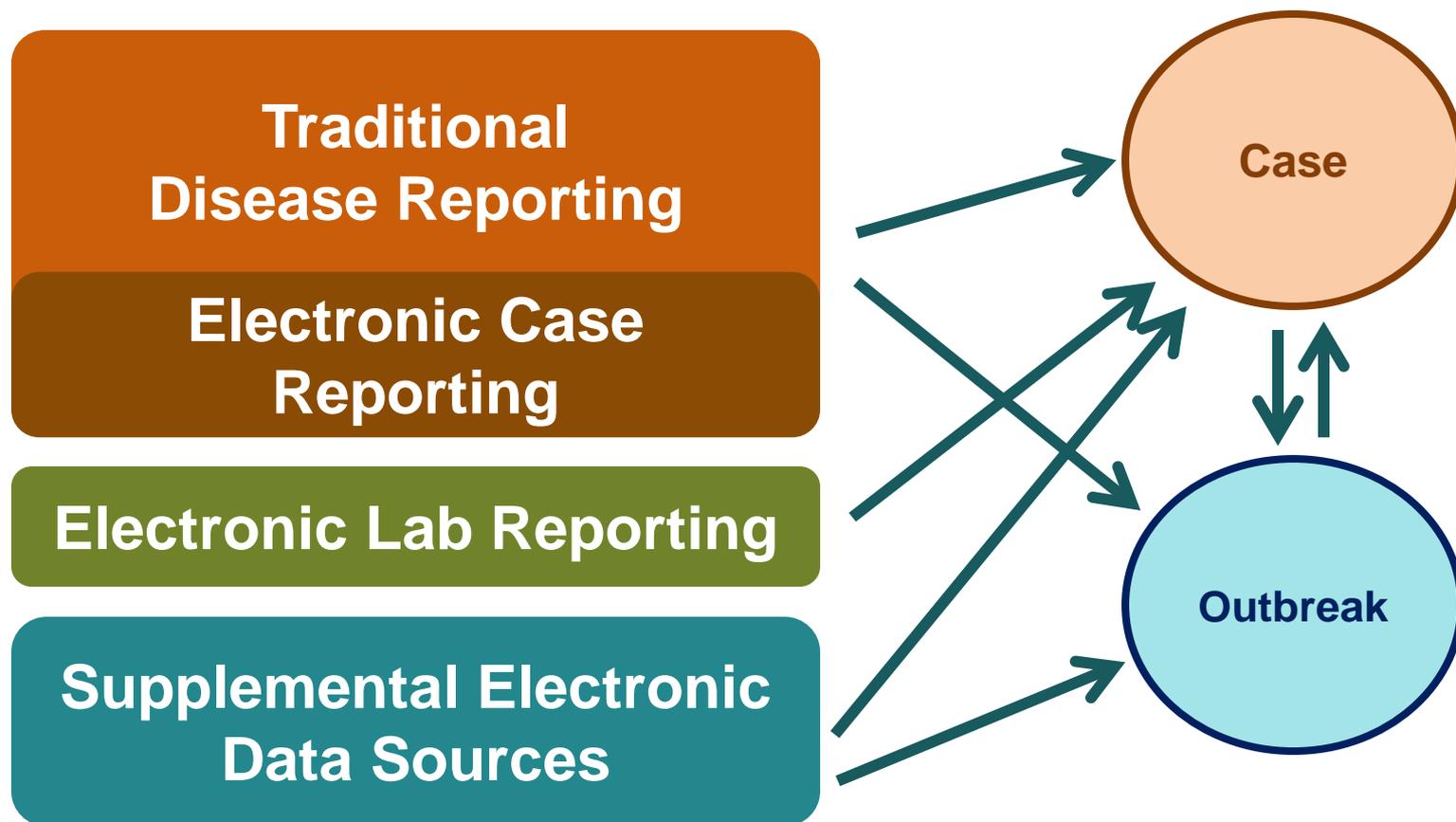
timely, complete, electronic,
automated, standardized,
meaningful, interoperable,
supplemented,
Public Health Reportable

How do we get [^]data?

Public Health Reporting



Public Health Reporting



CONNECTING SAN DIEGO HEALTHCARE



LIVE WELL
SAN DIEGO



Lab
Companies

Home
Health

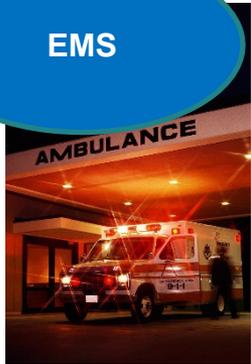


Nursing
Homes



Hospitals

EMS



Physician
Practices

Public
Health
Agencies



Pharmacies

Behavioral
Health
Providers

Community
Health
Centers

Patients
and
Caregivers

Schools



PUBLIC HEALTH & HIE INTEROPERABILITY



Hospitals



Medical Groups



Clinics



Labs

San Diego Health Connect

HIE
Cloud

Public
Health
Hub

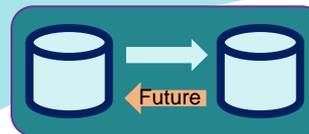
HIE User Portal



Medical record query

Public Health Reporting

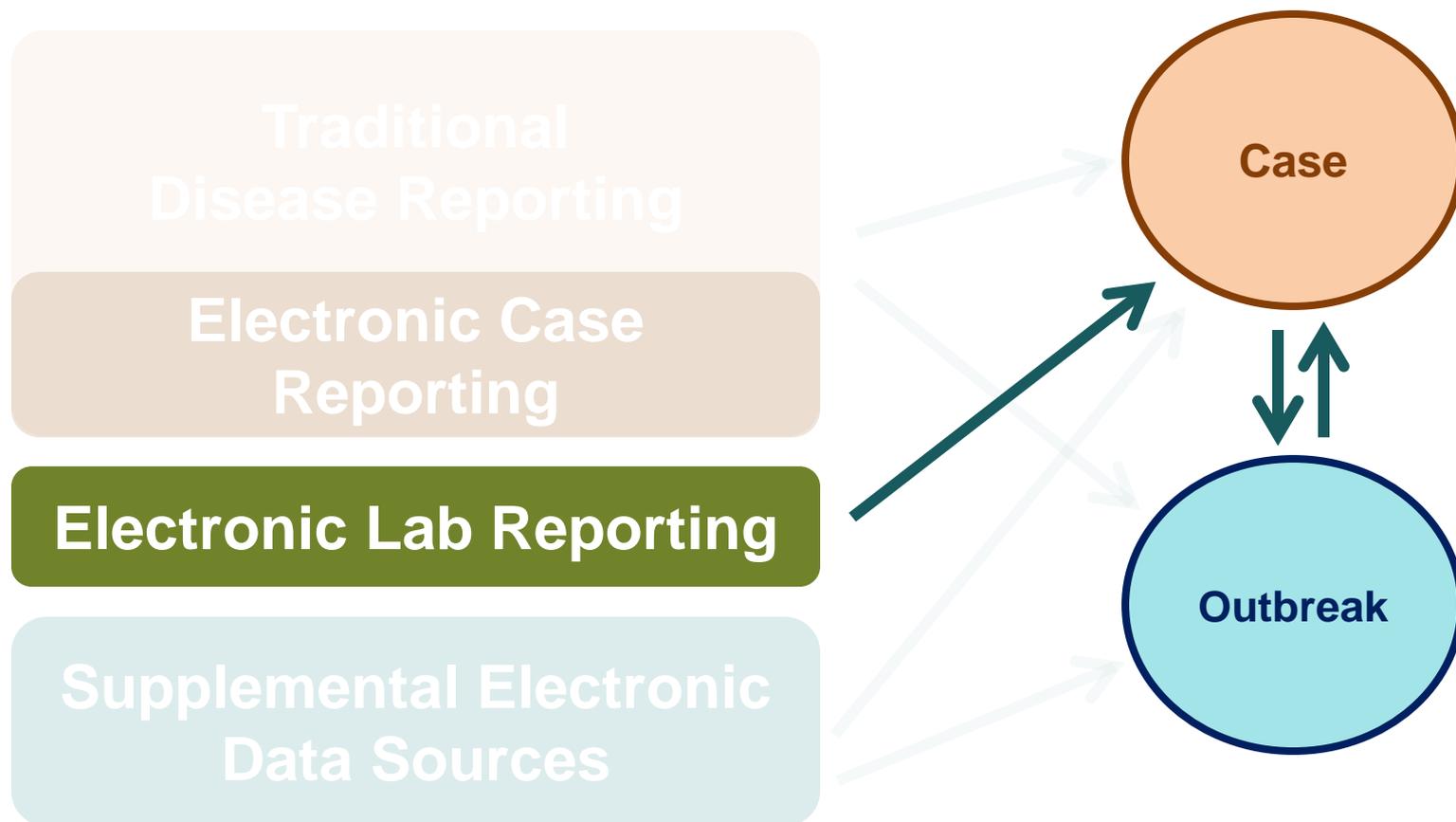
- Reportable diseases
- Electronic lab results
- Syndromic data
- Immunization results
- Meaningful Use



Electronic Exchange with PHS

- SDIR IZ Registry

Public Health Reporting

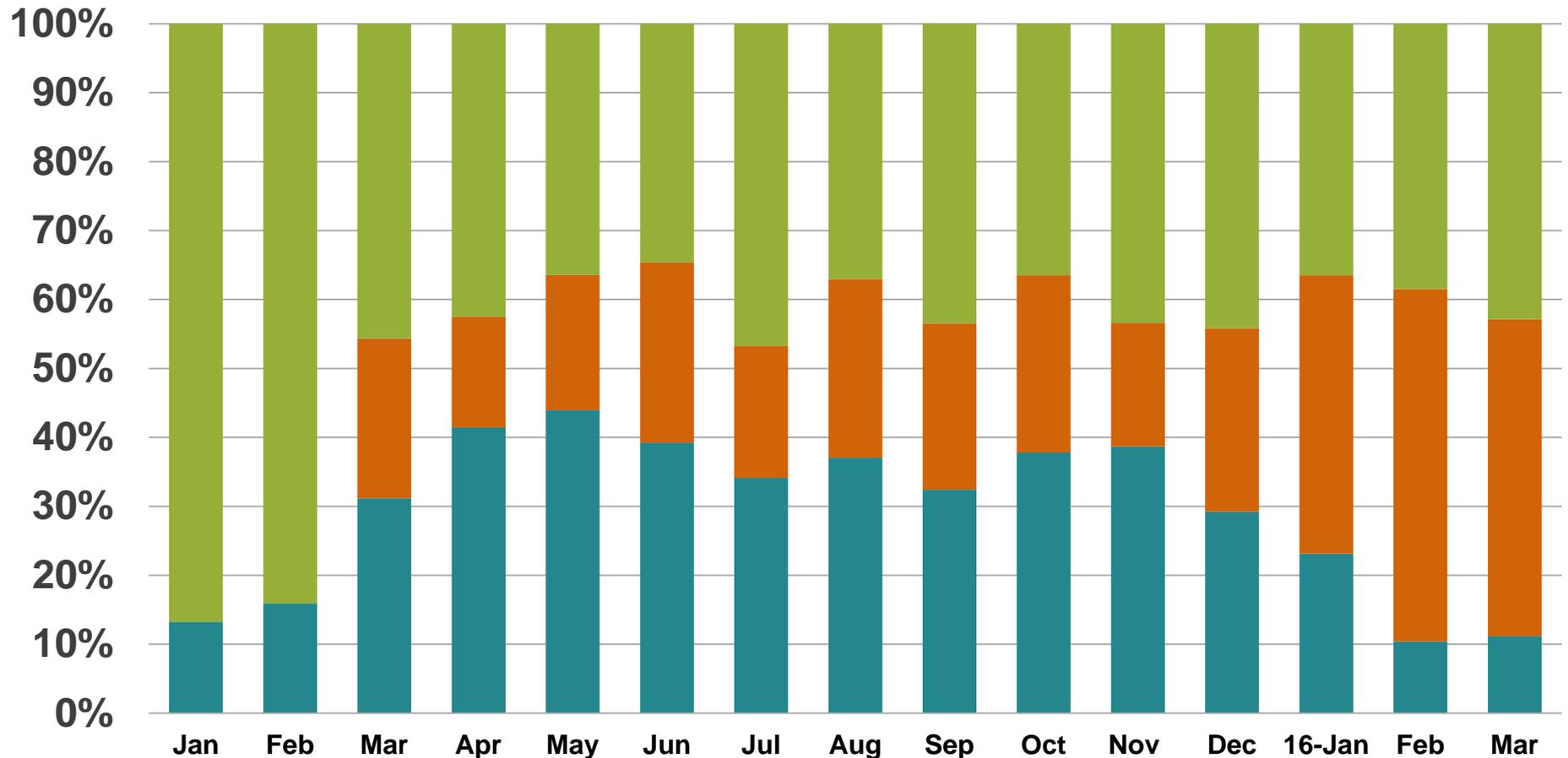


ELECTRONIC LAB REPORTING



New Disease Incidents – improvements in electronic reporting

■ ELR - Legacy ■ ELR - HIE ■ Manual Data Entry



1st Lab through HIE

STD and TB disease reports not reflected here



Completeness of Reporting

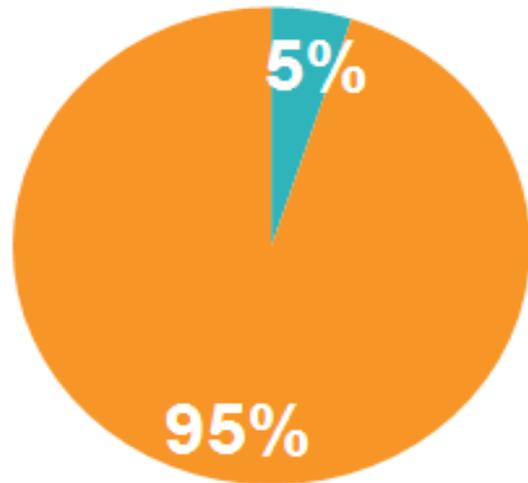


BENEFIT OF ELR



2014/2015 Flu Season

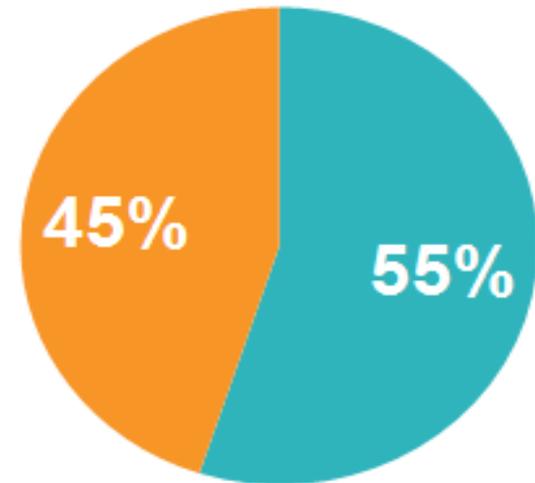
Full Season
N=7,395



■ ELR ■ Manual

2015/2016 Flu Season

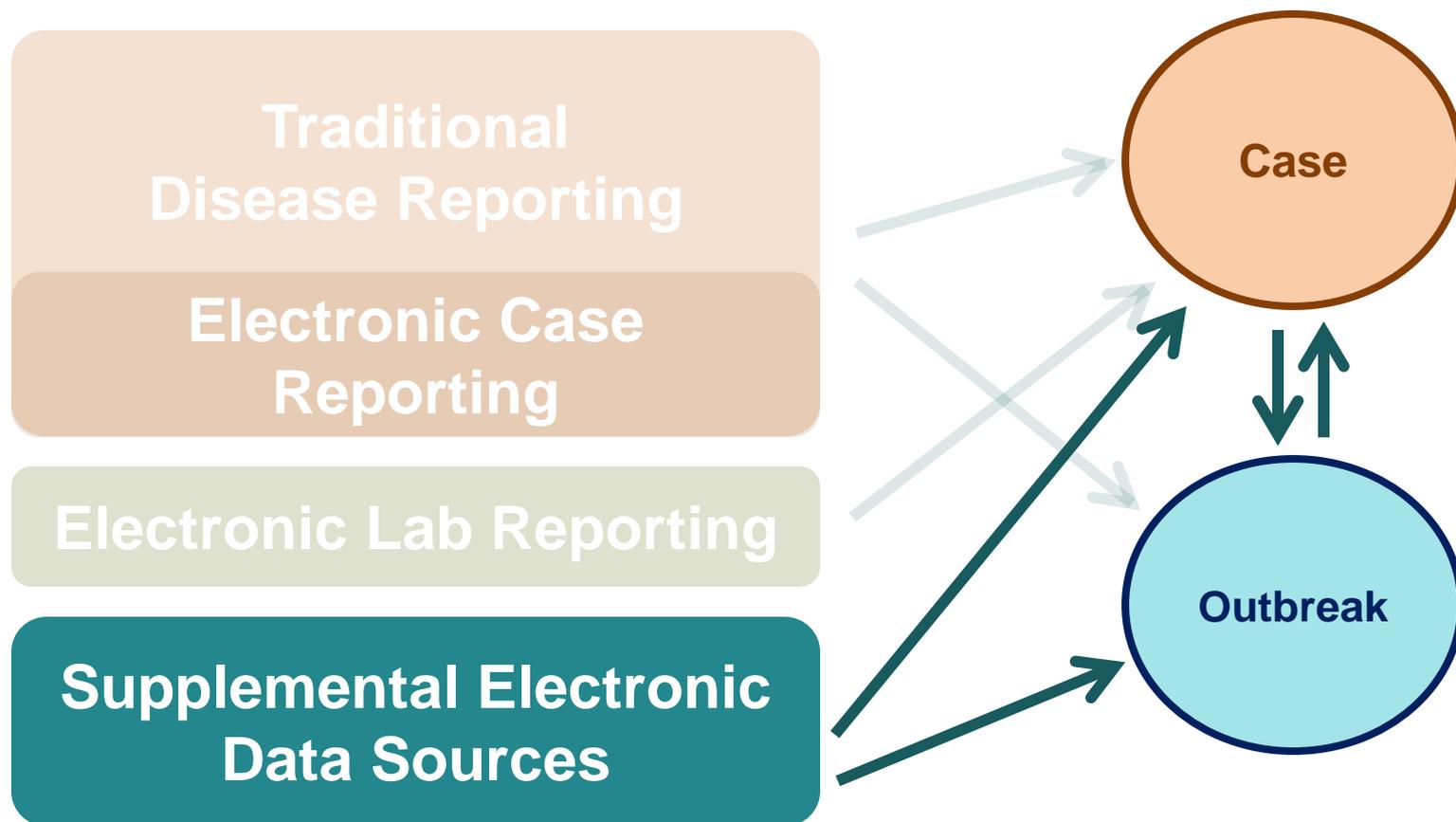
Season to date
N=5,761



■ ELR ■ Manual

Benefit of Flu ELR:
Estimated 250 hours of
staff time repurposed

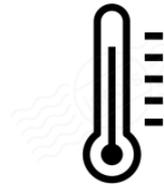
Public Health Reporting





Syndromic Surveillance

- Pre-diagnosis
- Chief complaints
- Early detection
- ED, IP, OP
- Key word detection



San Diego County has a rich history using syndromic surveillance. The data coming through our local HIE is improving capability and utility of the information.

SYNDROMIC DATA & CASE IDENTIFICATION *CURRENT*



Syndromic Meaningful Use Data

Location

Emergency
Department

Inpatient

Outpatient

Workflow

Registrations

Admits

Discharges

Elements

Chief Complaints

Reason for
Visit

Diagnoses

System text mining for key words



“Suspect case” identified for follow-up



Daily Syndromic Data mined for key words



HOSP	eventdt1	time	modear	disp	age	ccdix	zip
	4/3/2016	15:26	Ambulance	ADMITTED		BACTERIAL MENINGITIS	

**** Case detection ****



Public Health staff follow-up with hospital



Hospital reports the case



Epi Investigation proceeds

WHAT ABOUT BIOSENSE?



LIVE WELL
SAN DIEGO



CDC Home Search Health Topics A-Z

MMWR

Weekly

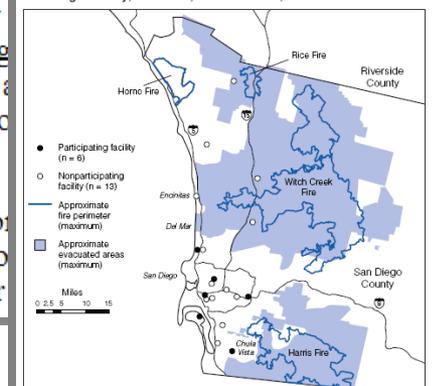
July 11, 2008 / 57(27);741-747

Monitoring Health Effects of Wildfires Using the BioSense System --- San Diego County, California, October 2007

During October 21--26, 2007, wildfires consumed hundreds of thousands of acres and forced the evacuation of more than 300,000 persons in San Diego County, California (1). During large-scale emergencies, data are needed to assess health effects, plan response, and evaluate response adequacy (2). This report describes some of the health effects of the wildfires based on data from the CDC BioSense system, which receives emergency department (ED) patient chief complaint information at codes from six hospitals in San Diego County. Analysis of these data indicated that ED visits for respiratory those associated with dyspnea and asthma, increased during a 5-day fire period compared with the preceding six hospitals combined, visits for dyspnea increased from 48.6 to 72.6 per day, and visits with diagnoses of a 21.7 to 40.4 per day. Local, state, and federal public health personnel should continue collaborative efforts to automated surveillance systems so that timely information is available during emergencies.

BioSense is a national system that enables receipt, analysis, and visualization of electronic health-care data for Data are available simultaneously to local, state, and federal public health officials and hospital personnel through can be accessed through the CDC Secure Data Network. Hospitals are included in the system based on their

FIGURE 1. Hospitals participating and not participating in BioSense,* approximate fire perimeters, and approximate evacuated areas --- San Diego County, California, October 20--29, 2007



* BioSense is a national automated surveillance system operated by CDC that enables receipt, analysis, and visualization of electronic health-care data for public health use.

OUR BIOSENSE MILESTONES

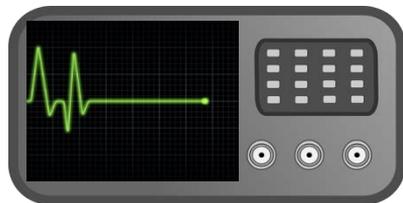


- **2004** Initial meetings CDC, County, Hospital CEOs
- **2006** Go-Live of 6 hospitals sending data to BioSense 1.0
- **2007** BioSense System used in response to San Diego Wildfires
- **2011** Transition BioSense 1.0 to 2.0
- **2012** San Diego County BioSense 2.0 Locker established
- **2014** Data flow stopped while hospitals upgrade for local HIE
- **2016** Target: County leverages HIE syndromic data and initiates data flow to BioSense 2.0 by 10/1/16

ELECTRONIC DEATH REGISTRATION CASE DETECTION



Death occurs



Physicians diagnose and staff initiates electronic record



Electronic registration process



Cause of death detector

“Disease X”



Deaths matched to communicable disease registry



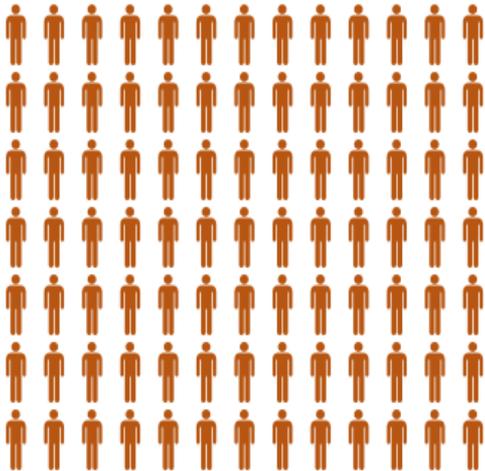
Detection

OUTBREAK DETECTION

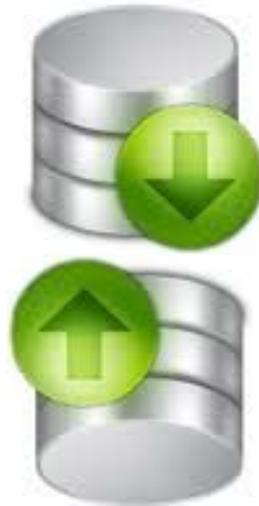
Expanded Approaches



**Individually
Reported &
Registered
Cases**



**Matching by
Disease &
Address**



**Potential
Outbreak
Detected**



**Public Health
Investigation
Initiated**





HIE User Portal



HIE
Cloud

Users

- EPI Case investigations
- STD Case investigations
- TB Case investigations

Benefit

- Medical record access
- Eliminates old request process
- More timely information
- Available 24/7

ROI

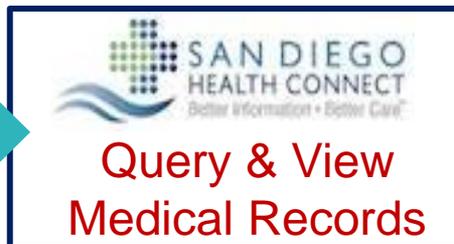
- Fax & paper reduction
- Decrease in redundant requests
- Staff time re-purposed

*Live Well
San Diego
Linkage*

- Operational Excellence
- Building a better service delivery system

HIE PORTAL RECORD LOOK-UP

Example: February 2016



F
E
B
R
U
A
R
Y

4,084 New disease incidents registered with Epi/IZ Program

465 (11.4%) Diseases requiring prompt investigation

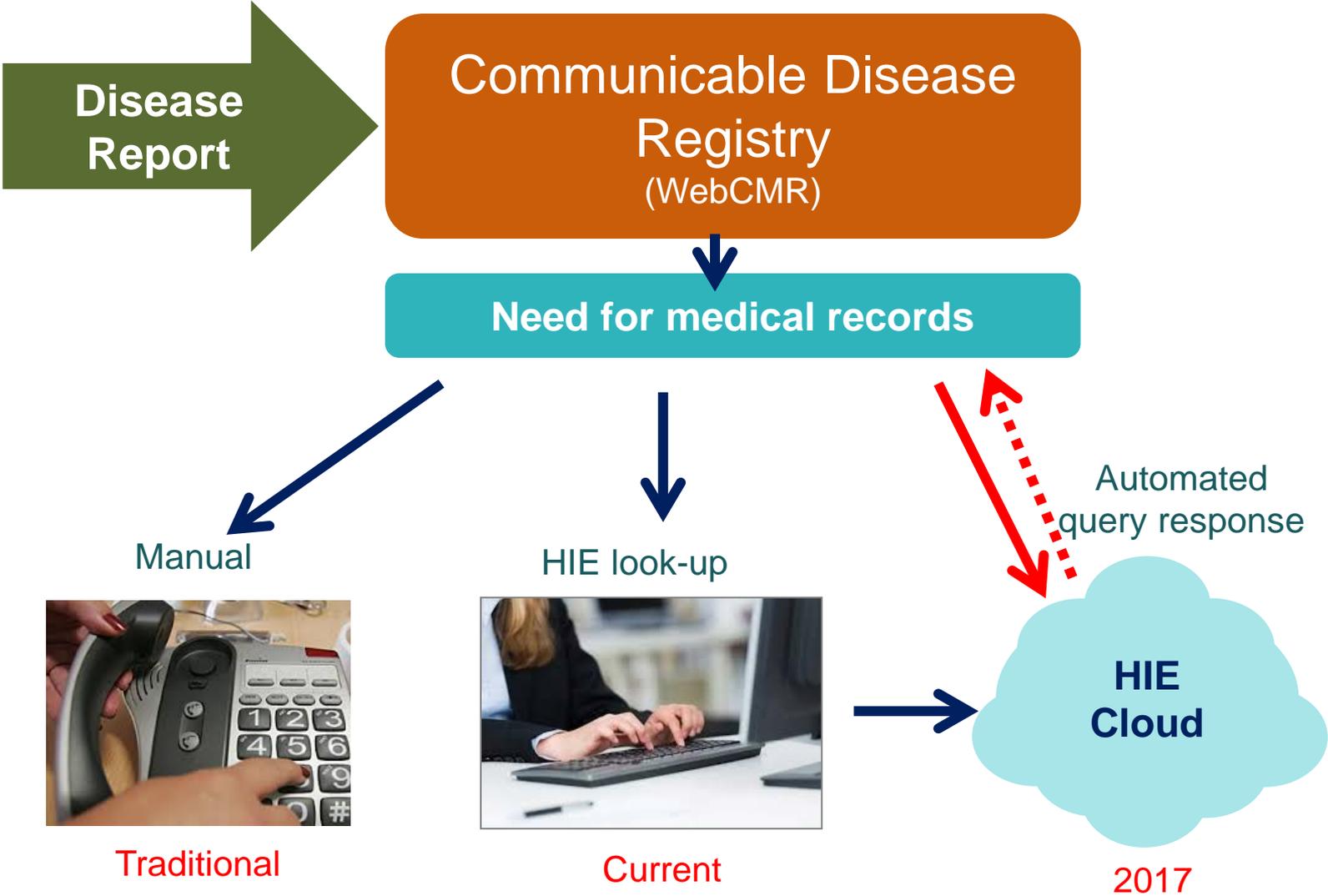
↳ **341 (73%)** Persons in the HIE

↳ **178 (52%)** Available medical records for viewing

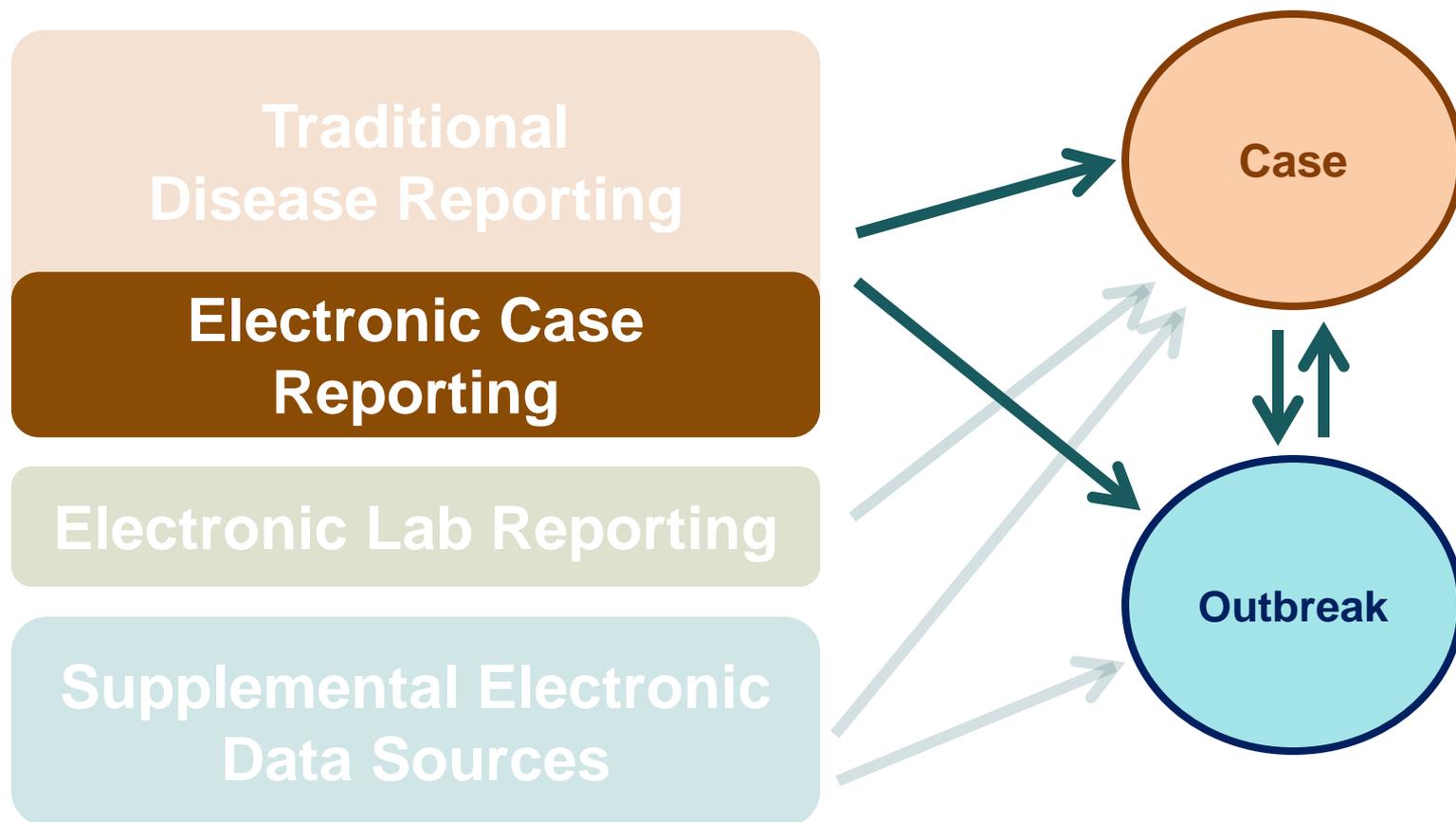
Value Added

- More timely records access - 24/7
- Reduction in "old style" medical record requests

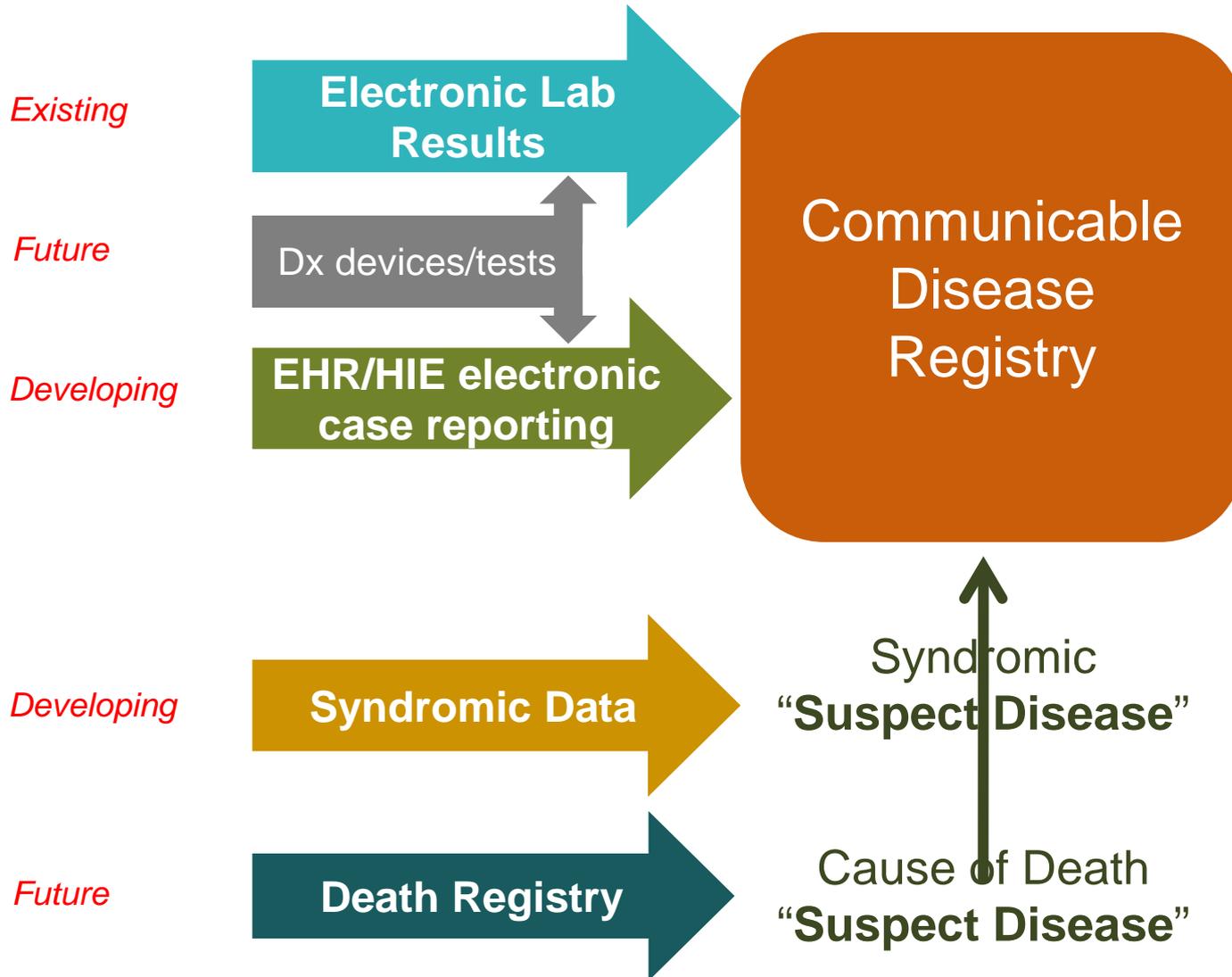
MEDICAL RECORD RETRIEVAL



Public Health Reporting



E-LINKAGES FOR EXPANDED REPORTING



THE FUTURE?



- **End to end case reporting**
- **Electronic results from point of care diagnostics, rapid and PCR tests**
- **Epidemiologic investigation initiated electronically at point of care**
- **Integrated electronic case contact tracking**
- **Communicable disease dashboard and outbreak tracking tools**



- **Opportunities**

- Technology exists for scalable linkages
- Shifting away from old manual approaches
- Areas for early adoption of novel solutions
- Collaboration – public, private, academic
- “Early wins” possible for Public Health

- **Challenges**

- Technology available before standards are set
- Interoperability will lead to some “noise”
- Balance between sensitivity and specificity of systems
- What and how is a “special registry”?
- Not all data is meaningful
- Greater appetite from information consumers



THANK YOU

For More Information

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COUNTY OF SAN DIEGO



HHSA

HEALTH AND HUMAN SERVICES AGENCY