The Office of the National Coordinator for Health Information Technology

Interoperability: Supporting Care Before, During and After a Disaster

November 30, 2017

ONC 2017 Annual Meeting

Agenda

- Brief Panel Introductions
- Panel Presentations (15 minutes each)
- Q&A/Interactive Discussion with Panel

Panel Introductions

- Panelists
  - Andy Gettinger, Chief Clinical Officer, Office of the National Coordinator for Health Information Technology
  - Kevin Horahan, Deputy Division Director, The Office of the Assistant Secretary for Preparedness and Response
  - Caecilia Blondiaux, Health Insurance Specialist, Centers for Medicare & Medicaid Services
  - Dan Smiley, Chief Deputy Director, State of California Emergency Medical Services Authority
  - Leslie Witten, Health Information Exchange Program Manager, State of California Emergency Medical Services Authority
  - Luis Belen, Chief Executive Officer, National Health IT Collaborative for the Underserved

The Office of the National Coordinator for Health Information Technology

Andrew Gettinger, M.D.

Chief Medical Information Officer

Office of the National Coordinator for Health IT

@ONC_HealthIT HHSONC HealthIT.gov

Health Information and Disaster Response

Kevin Horahan, JD, MPH, NRP
Deputy Division Director
Partner Readiness and Emergency Programs
Office of Emergency Management
Assistant Secretary for Preparedness and Response
U.S. Department of Health and Human Services

US Department of Health and Human Services

ASPR
ASSISTANT SECRETARY FOR PREPAREDNESS AND RESPONSE

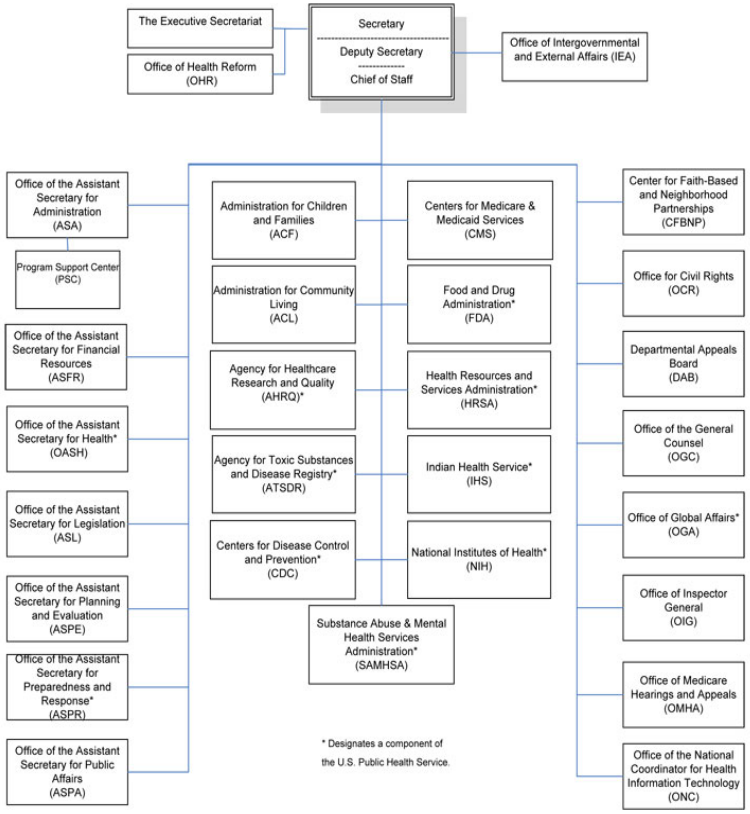
- Administers more grant dollars than all other federal agencies combined

- The Department's programs are administered by 11 operating divisions and 16 staff divisions

- HHS' Medicare program is the nation's largest health insurer, handling more than 1 billion claims per year. Medicare and Medicaid together provide health care insurance for one in four Americans.

- The department includes more than 300 programs, covering a wide spectrum of activities.

- HHS programs provide for equitable treatment of beneficiaries nationwide, and they enable the collection of national health and other data.



US. Department of Health and Human Services Organization Chart - text version

Resilient People. Healthy Communities. A Nation Prepared.

ASPR: Resilient People. Healthy Communities. A Nation Prepared.

Assistant Secretary for Preparedness and Response (ASPR)

- Created and reauthorized by the Pandemic and All-Hazards Preparedness Act.
- Lead the nation is preparing for and responding to the adverse health effects of public health emergencies and disasters (ESF8 of the NRF).
- ASPR Primary Focus Areas:
  - Preparedness planning and response
  - Building federal medical operational capabilities
  - Countermeasure research, advanced development, and procurement
  - Grants to strengthen the capacities of health systems
- Guided by the National Health Security Strategy.

Robert Kadlec MD
Assistant Secretary for Preparedness and Response
U.S. Department of Health and Human Services

ASPR: Resilient People. Healthy Communities. A Nation Prepared.

Partner Readiness and Emergency Programs (PREP)

ASPR
ASSISTANT SECRETARY FOR PREPAREDNESS AND RESPONSE

Mission

- The mission of the PREP Division is to support external engagement with our federal, local, state, tribal, territorial and international partners “outside the walls of HHS” in preparing for, mitigating against and responding to public health emergencies, terrorist incidents and natural disasters.

Vision

- A consolidated, integrated footprint led by highly qualified personnel capable of representing ESF8/ASPR/OEM as liaison officers (LNOs) across all phases of the emergency management cycle based on a common skillset augmented by specialized skillsets.

PREP Responses 2010-2016

2010 Public Health and Medical Incidents
- Haiti Earthquake - Haiti
- Chile Earthquake - Chile
- Red River Basin – ND
- Northeast Flooding – RI, MA, CT
- Montana Flooding - MT
- Hurricane Alex - TX
- Tropical Storm Bonnie – FL, LA
- Hurricane Earl – Puerto Rico, NC, VA, MD, NJ, CT, RI MA
- Haiti Cholera Outbreak – Haiti
- State of the Union Address – Washington D.C.
- Winter Olympics – Vancouver BC, Canada
- Cherry Blossom Festival – Washington D.C.
- Global Nuclear Security Summit – Washington D.C.
- Annual Peace Officers Memorial – Washington D.C.
- Central American and Caribbean Games – Puerto Rico
- World Equestrian Games - KY
- Super Bowl XLIV - TX
- Independence Day – Washington D.C.
- NLE: Eagle Horizon – Washington D.C.

2011 Public Health and Medical Incidents
- Asia-Pacific Economic Cooperation (APEC) – HI
- Pacific Basin Earthquake/Tsunami – Japan
- Red River Basing Flooding – ND, MN
- Mississippi River Flooding – MS
- Severe Weather – AL, GA, VA
- Winter Weather – NM, TX, OK, CO, KS, MO, AR, IL, IN, OH, KY, WV, PA, MD, DE, Washington D.C., NY MA, VT, NH, ME
- New England Severe Weather Tornado– MA
- Missouri River Flooding – SD
- Souris River Flooding – ND
- Northeast Flooding – NY
- Hurricane Irene – Puerto Rico, SC, NC, VA, MD, DE, NJ, NY
- Joplin Tornado - MO

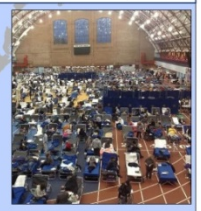
2012 Public Health and Medical Incidents
- Aurora Shootings – CO
- Sikh Temple Shootings – WI
- Sandy Hook Shootings – CT
- RNC – FL
- DNC – NC
- Severe Winter Storms – IA, WI, IL, MI, MO, MN
- NATO Summit – IL
- Peace Officers Memorial – DC
- State of the Union Address – DC
- Hurricane Isaac – USVI, PR, FL, LA, MS, AR, MO
- Hurricane Sandy – NJ, PA, NY
- Severe Weather – KS, MO, IL, KY, IN, TN, AL, GA
- Tropical Storm Debby – FL, GA
- EPA Medical Support – MA
- Texas ACF Support Mission – TX
- Mid Atlantic/Ohio Valley Storms – MD, OH, VA, WV
- Tropical Storm Evan – American Samoa
- Exercise Thunderbolt – DC
- Eagle Horizon – DC
- Noble Lifesaver Patient Movement Exercise – WI
- Pandemic Influenza Exercise – DC
- Multi-State Anthrax Exercise – DC
- Cherry Blossom Festival – DC
- Independence Day – DC
- UN General Assembly – NY, NJ

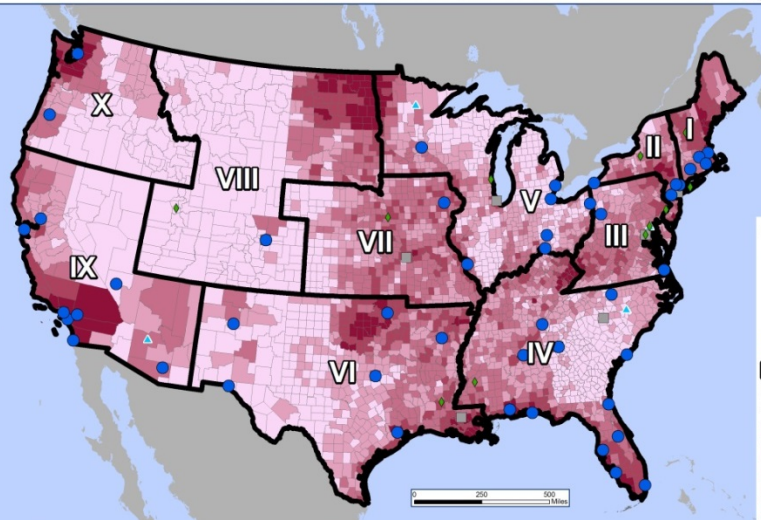
2013 Public Health and Medical Incidents
- Inauguration – DC
- Boston Marathon Bombing – MA
- Typhoon Haiyan/Yolanda – Philippines
- State of the Union – DC
- Peace Officer Memorial – DC
- Independence Day – DC
- Anniversary March on Washington – DC
- Sandy Hook Elementary – CT
- American Samoa Storm – American Samoa
- Influenza – Nationwide
- Northeast Winter Storm – ME, NH, MA, NY, NJ, PA, VT, CT, RI
- West Texas Fertilizer Plant Explosion – TX
- Tropical Storm Andrea – FL, GA, SC, NC, VA, MD, DE, NJ, CT, RI, MA, ME
- H7N9 – China
- Central and Midwest Flooding – MI, IN, IL, WI, MN, IA, MO, KY, TN, SD, ND
- Oklahoma City Tornado – OK
- MERS-CoV – Entire Middle East
- Arizona Wild Fires – AZ
- CO Flash Flooding – CO
- Tropical Storm Karen – LA
- Midwest Ice Storm – TX, AR, TN, KY, OH, MS
- Ardent Sentry – DC
- Period of Heightened Alert - DC

ASPR
ASSISTANT SECRETARY FOR PREPAREDNESS AND RESPONSE

Office of Emergency Management
Always Ready Always Responding

Map produced by HHS Division of Fusion GIS Team
Data sources: ESRI, HHS
Map date: 9/15/2016





ASPR Assets
- DMAT
- DMAT Developmental
- DMORT
- IMSuRT
- NVRT
- Support Centers
- HHS Regions

Presidential Disaster Declarations
1964 - 2014
- 0 - 6
- 7 - 10
- 11 - 14
- 15 - 19
- 20 - 29

2014 Public Health and Medical Incidents
- UC Mission
- California Drought
- Chemical Release – WV
- Winter Storms – NY, PN, MD, DEL, NJ, CT, MA
- Propane Shortage – the US (36 STATES)
- Saline Shortage – the entire US
- Southern Plains to Mid-Atlantic Winter Storms
- Arthur – entire East Coast
- Boston Marathan – MA
- Ebola – West Africa
- Flooding – FARGO, ND/MICHIGAN/MINOT, ND
- MERS-CoV – Entire Middle East
- Severe Weather – Central US
- UC Mission – TX, AZ
- UNGA Support – NY, NJ
- African Leaders Summit – DC
- Independence Day – DC
- Peace officers memorial – DC
- State of the Union Address – DC
- Super Bowl – NJ
- Ardent Sentry – DC
- Capstone – Anchorage, AK/Washington,DC
- Mudslides – WA
- Wildfires – CA, WA

2015 Public Health and Medical Incidents Monitored
- 2014/15 Ebola
- 2014/15 Concert for Valor
- 2014/15 MERS-COV
- 2014 Severe Weather, Central U.S.
- 2014-2015 Unaccompanied Children Support
- 2014 Vongfong
- 2015 Measles
- 2015 Severe Winter Weather, Region 1/2/3 27Jan15
- 2015 Yellowstone River Crude Oil Spill, MT 20Jan15
- 2015 SOTUA
- 2015 Papal Visit
- 2015 Polio Response
- 2015 Chikungunya
- 2015 Bill
- 2015 Danny
- 2015 Erika
- 2015 Guillermo
- 2015 HIV Outbreak Scott County, IN
- 2015 Ignacio
- 2015 Kilo
- 2015 Soudelor
- 2015 Legionella Outreak, NYC
- 2015 Papal Visit
- 2015 Wildfires
- 2015 Amtrak Train Incident

2016 Public Health and Medical Incidents Monitored as of 13Sep16
- Water Contamination: Flint, MI
- Armed Protest Malheur National Wildlife Refuge, Oregon
- Zika Virus Outbreak Response: National
- Super Bowl: San Francisco, CA
- Terrorist Attack: Jakarta, Indonesia
- Major Winter Storm: Eastern U.S.
- Water Contamination: Sebring, OH
- Unaccompanied Children: U.S. Southern Border
- Nuclear Summit: Washington D.C.
- Friends of Ireland Luncheon: Washington D.C.
- Congressional Gold Medal Ceremony: Washington D.C.
- Winston, Pacific Ocean
- Republican National Convention (RNC): Cleveland, OH
- March Storms and Flooding Recovery: LA
- Flooding: Lower Mississippi Valley
- Multiple Explosions: Brussel, Belgium
- Heightened State of Vigilance: National
- Severe Weather and Tornados: OK/MS
- Amtrak Train Derailment: Chester, PA
- Peace Officer's Memorial: Washington D.C.
- Environmental Protection Agency (EPA) Support: Stowe, MA
- Elizabethkingia Outbreak: WI/IL/MI
- 7.8M Earthquake: Muisne, Ecuador
- Significant Weather and Flooding: Southcentral, US
- Amos, American Samoa
- Commemoration of the Days of Remembrance: D.C.
- Severe Weather Outbreak: OK
- Wildland urban fire: Alberta, Canada
- Severe Weather Season: National
- Eagle Horizon Exercise: National
- Storms and Flooding: TX
- Independence Day Celebration: Washington D.C.
- Bacillus anthracis: St. Paul, MN
- May Significant Weather and Flooding: TX
- Bonnie, Atlantic Ocean
- Office of the Attending Physician CAP Request
- Cascadia Rising Exercise
- Colin, Atlantic Ocean
- Shooting Incident: Orlando, FL
- IHS Support: National
- Severe Flooding: WV
- Explosion and Gunfire at Ataturk Airport: Istanbul, Turkey
- Agatha, Pacific Ocean
- Nepartak, Western Pacific
- Blas, Pacific Ocean
- Tornado Damages Hospital and Nursing Home: Eureka, KS
- Mass Shooting: Dallas, TX
- Celia, Pacific Ocean
- Salmonella Javiana Outbreak: Wagner, SD
- Darby, Pacific Ocean
- Mass Casualty Incident: Nice, France
- Civil Unrest: Turkey
- Estelle: Pacific Ocean
- Possible THC Contamination in Town Water Supply: Hugo, CO
- Shooting: Munich, Germany
- Georgette, Pacific Ocean
- Mass Shooting: Fort Myers, FL
- Severe Weather and Severe Flash Flooding: MD
- Howard, Eastern Pacific
- Earl, Atlantic Ocean
- Ivette, Pacific Ocean
- United Nations General Assembly: NYC,NY
- Javier, Pacific Ocean
- Major Flooding: Louisiana
- Fiona, Atlantic Ocean
- Gaston, Atlantic Ocean
- Multiple Tornados: IN
- Hermine, Atlantic Ocean
- Madeline/Lester, Pacific Ocean
- Tropical Depression Eight: Atlantic Ocean
- Newton, Eastern Pacific Ocean
- Orlene, Eastern Pacific Ocean

Resilient People. Healthy Communities. A Nation Prepared.

Preparedness Support

- Lead HHS support to local and state health departments preparedness efforts; co-chair the HHS Regional Advisory Committee (RAC)
- Coordinate Federal health and medical (ESF #8) regional preparedness and crisis management among federal agencies
- Serve as technical advisers for national and regional policy development; linkages to best practices and resources
- Participate in state, regional and cross-border planning, training, exercises and program evaluation for public health disasters, emergencies and mass gathering events

Response Operations

- Serve as the lead for HHS/Federal ESF #8 Health Official in affected region
- Work closely with state health departments to estimate requirements for federal support
- Identify, validate and execute federal ESF #8 response missions domestically and with international or cross-border partners
- Maintain regional readiness for additional missions during response

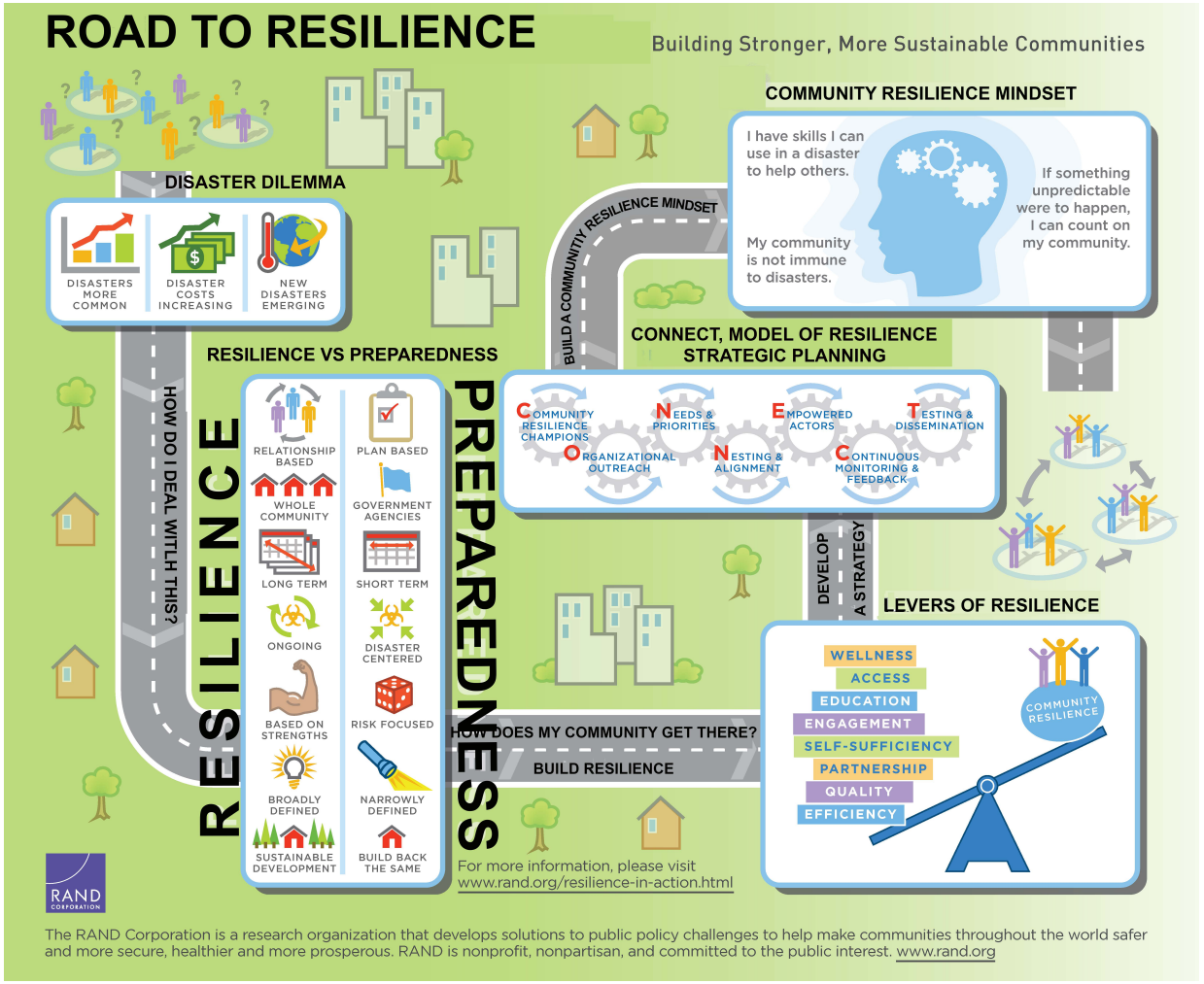
Recovery

- Ensure HHS Recovery Coordinator situational awareness and integration into response operations
- Assist with transition from response/short-term recovery to Long Term Recovery Operations
- Identify potential ongoing recovery missions such as vector control, behavioral health support

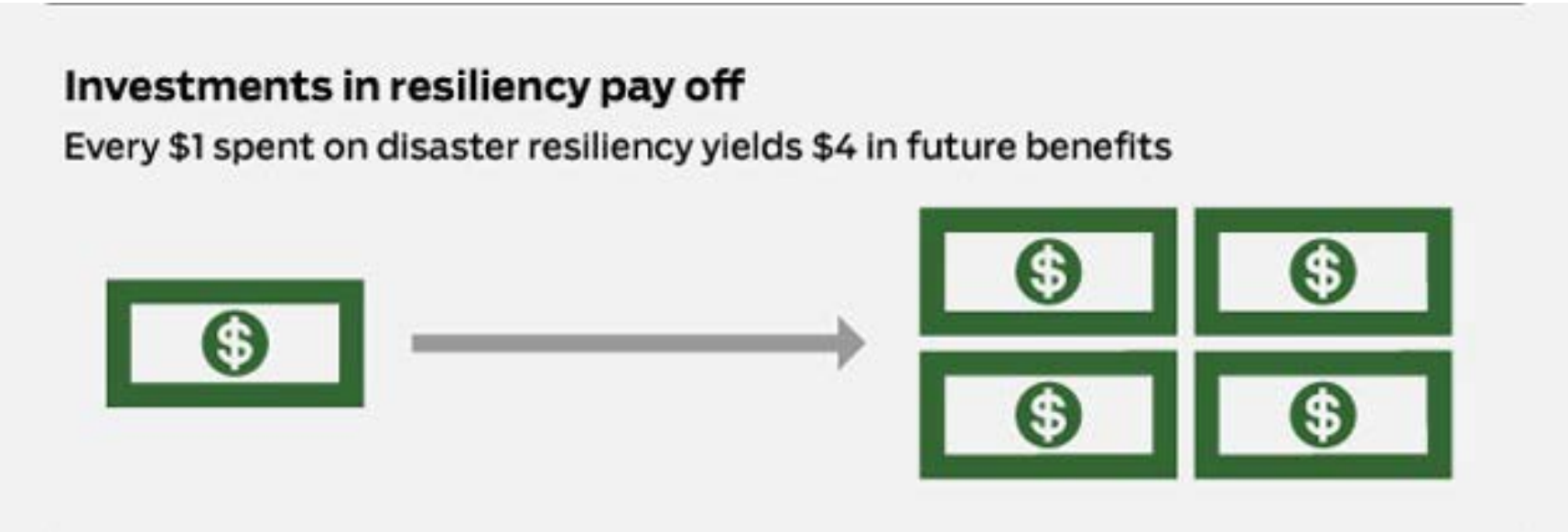
Mitigation

- Provide feedback and implement best practices/lesson learned in home region
- Work with partners on efforts related to disaster risk reduction – focusing on business continuity planning and critical infrastructure

How do we get there?



Why do we care?



Sources: Department budget reports (FY 2011-2014); appropriations bills (FY 2011-2013); National Oceanic and Atmospheric Administration's Climate Disasters Database.

Center for American Progress

Questions?

ASPR: Resilient People. Healthy Communities. A Nation Prepared.

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

CMS Emergency Preparedness Rule

Understanding the Emergency Preparedness Final Rule

Caecilia Blondiaux

Survey & Certification Group
Centers for Medicare & Medicaid Services

Final Rule

- *Medicare and Medicaid Programs; Emergency Preparedness Requirements for Medicare and Medicaid Participating Providers and Suppliers*
- Published September 16, 2016
- Applies to all 17 provider and supplier types
- Implementation date November 15, 2017
- Compliance required for participation in Medicare
- Emergency Preparedness is one new CoP/CfC of many already required

Background

- The Regulation was 10 years in the making
- Lessons Learned from disasters
    - Hurricane Katrina
    - Hurricane Sandy
    - 9/11 Terrorist Attacks
    - Anthrax attacks
    - H1N1 influenza pandemic
    - Ebola
- Previous plans or requirements did not go far enough to ensure that providers and suppliers are equipped and prepared to help protect those they serve during emergencies and disasters.

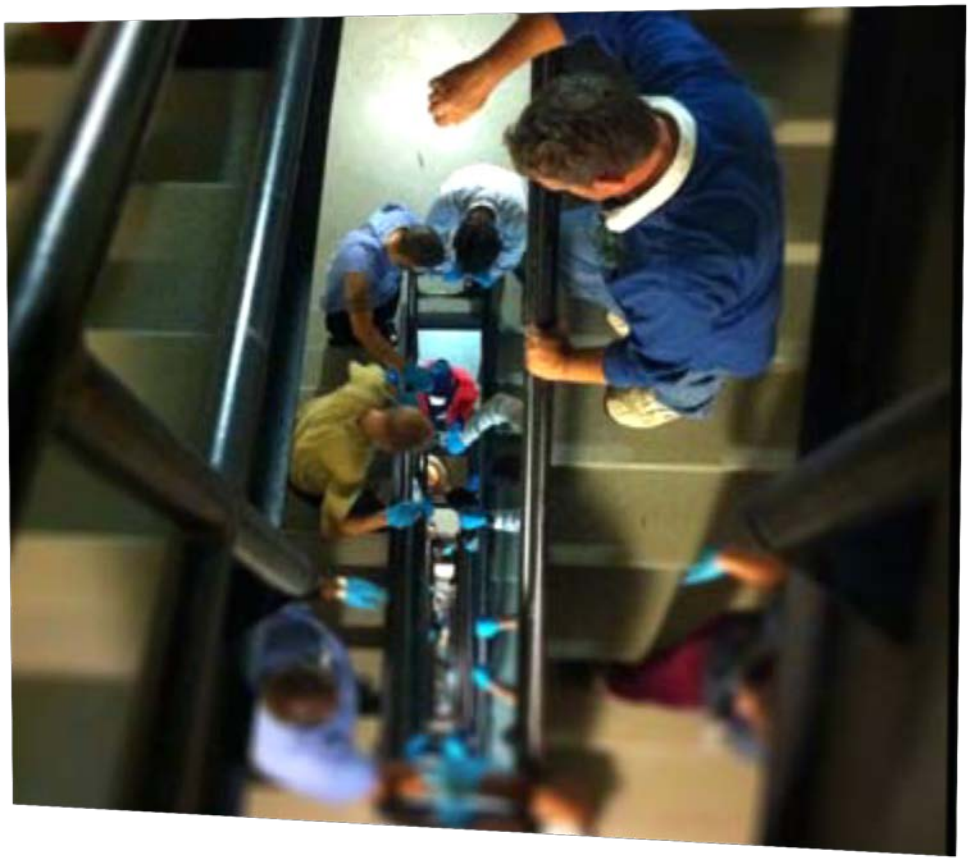
Lessons from SS Sandy

https://oig.hhs.gov/oei/reports/oei-06-13-00260.pdf

- 1” of water entered the hospital, which compromised the back-up generator, forcing evacuation when the hospital lost power.

Fuel Bucket Line

Back-up generators in 13th floor but fuel pumps located in the flooded basement, requiring a bucket line up 13 flights of stairs.



Lessons Learned

- Problems with community collaboration to secure fuel, transportation
- Loading order (acute/vent patients in back of buses, longer wait). Difference between planned evacuation (hospital) vs emergency evacuation (EMS).
- Poor bed tracking/availability.

Lessons Learned

- Staff Training: Newer nurses had little knowledge of alternative procedures, such as visually counting IV drips and performing manual suction of intubated patients.
- **Records, both electronic and paper were destroyed by basement flooding**. Many patients records communicated only through oral histories provided by caregivers.
- Compromised communications, including landlines, internet and cell phones.

Four Provisions for All Provider Types

Risk Assessment and Planning

- Develop an emergency plan based on a risk assessment.
- Perform risk assessment using an “all-hazards” approach, focusing on capacities and capabilities.
- Update emergency plan at least annually.

All-Hazards Approach:

- An all-hazards approach is an integrated approach to emergency preparedness planning that focuses on capacities and capabilities that are critical to preparedness for a full spectrum of emergencies or disasters, including internal emergencies and a man-made emergency (or both) or natural disaster. This approach is specific to the location of the provider or supplier and considers the particular type of hazards most likely to occur in their areas. **These may include, but are not limited to, care-related emergencies, equipment and power failures, interruptions in communications, including cyber-attacks, loss of a portion or all of a facility, and interruptions in the normal supply of essentials such as water and food.**

Policies and Procedures

- Develop and implement policies and procedures based on the emergency plan and risk assessment.
- Policies and procedures must address a range of issues including subsistence needs, evacuation plans, procedures for sheltering in place, tracking patients and staff during an emergency.
- A system to preserve medical documentation (ensures confidentiality in compliance with HIPAA)
- Review and update policies and procedures at least annually.

Communication Plan

- Develop a communication plan that complies with both Federal and State laws.
- Coordinate patient care within the facility, across health care providers, and with state and local public health departments and emergency management systems.
- Review and update plan annually.

Training and Testing Program

- Develop and maintain training and testing programs, including initial training in policies and procedures.
- Demonstrate knowledge of emergency procedures and provide training at least annually.
- Conduct drills and exercises to test the emergency plan.
- Participation in a full-scale exercise that is community-based or when a community-based exercise is not accessible, an individual, facility-based exercise.

Training & Testing Requirements

- Facilities are expected to have met all Training and Testing Requirements by the implementation date (11/15/17).

- Conduct an additional exercise that may include, but is not limited to the following:

  - A second full-scale exercise that is individual, facility-based.

  - A tabletop exercise that includes a group discussion led by a facilitator, using a narrated, clinically-relevant emergency scenario, and a set of problem statements, directed messages, or prepared questions designed to challenge an emergency plan.

Other Areas of Importance

- Final Rule is based off of the Hospital Conditions, with variations-
  - Outpatient providers are not required to have policies and procedures for the provision of subsistence needs
  - Home health agencies and hospices required to inform officials of patients in need of evacuation.
  - Long-term care and psychiatric residential treatment facilities must share information from the emergency plan with residents and family members or representatives.

Where are we now?

- In June, 2017, Appendix Z of State Operations Manual was released.
- In September, 2017, the surveyor training for emergency preparedness requirements was launched. Available at https://surveyortraining.cms.hhs.gov/
- Training through the Integrated Surveyor Training Website is available for providers/suppliers.
- Our Website https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertEmergPrep/index.html

Do not loose sight of the intent!

- The intent behind the emergency preparedness final rule is to collaborate and coordinate with emergency officials to improve patient access to care and continuing care during disasters.

- Facilities are encouraged to use one another, healthcare coalitions, public health departments, emergency preparedness experts to gain compliance, share lessons learned and best practices.

- Don’t recreate the wheel!

Thank you!

SCGEmergencyPrep@cms.hhs.gov

Acronyms in this Presentation

- CfCs- Conditions for Coverage
- CoPs- Conditions for Participation
- EP- Emergency Preparedness
- IGs- Interpretive Guidelines
- TTX- Table Top Exercise

PULSE +EMS INTEROPERABILITY:

SUPPORTING CARE BEFORE, DURING AND AFTER A DISASTER

Daniel Smiley
Chief Deputy Director

Leslie Witten-Rood
Project Manager,
HIE for EMS Project

California Emergency Medical Services Authority
State of California

Funded by Cooperative Agreement
Grant #90IX0006/01-00
Office of the National Coordinator,
U.S. Department of Health and Human Services

Vision for EMS

Emergency Medical Services (EMS) is a full participant in health information exchange with the ability to securely send, receive, find and use relevant patient information ***to improve transitions of care.***

"Connecting EMS to the broader healthcare system"

PULSE +EMS Grant from ONC

Funded Cooperative Agreement Grant #90IX0006/01-03

From the Office of the National Coordinator (ONC) for Health Information Technology,
U.S. Department of Health and Human Services

July 27, 2015 -- July 26, 2017

Total Project Budget: $3,668,904

Federal Share: $2,751,678 (disbursed at milestones)

Non-Federal Share: $917,226 (matching dollars)

Contractual: $2,281,522

ONC Grant Deliverables (2015-2017)

"Adoption, Exchange, and Interoperability"

+EMS Use Case

Implement SAF(R) Model in 2 Local EMS agencies

Get 10% Usage in 2 Local EMS agencies

PULSE Use Case

Build PULSE System

Connect to 4 HIOs/HIEs

Complete PULSE Drill

Patient Unified Look-up System for Emergencies

Use Case for Disaster Response:

Patient Unified Look-up System for Emergencies (PULSE)

Use in Disaster

By Disaster Healthcare Volunteers (Physicians, FNPs, PAs, Nurses, Pharmacists, Paramedics, EMT)

Working at an Alternate Care Facility

Why is PULSE necessary?

PULSE is "Activated" when a disaster strikes and patients are displaced from their normal area or outside their regular healthcare system

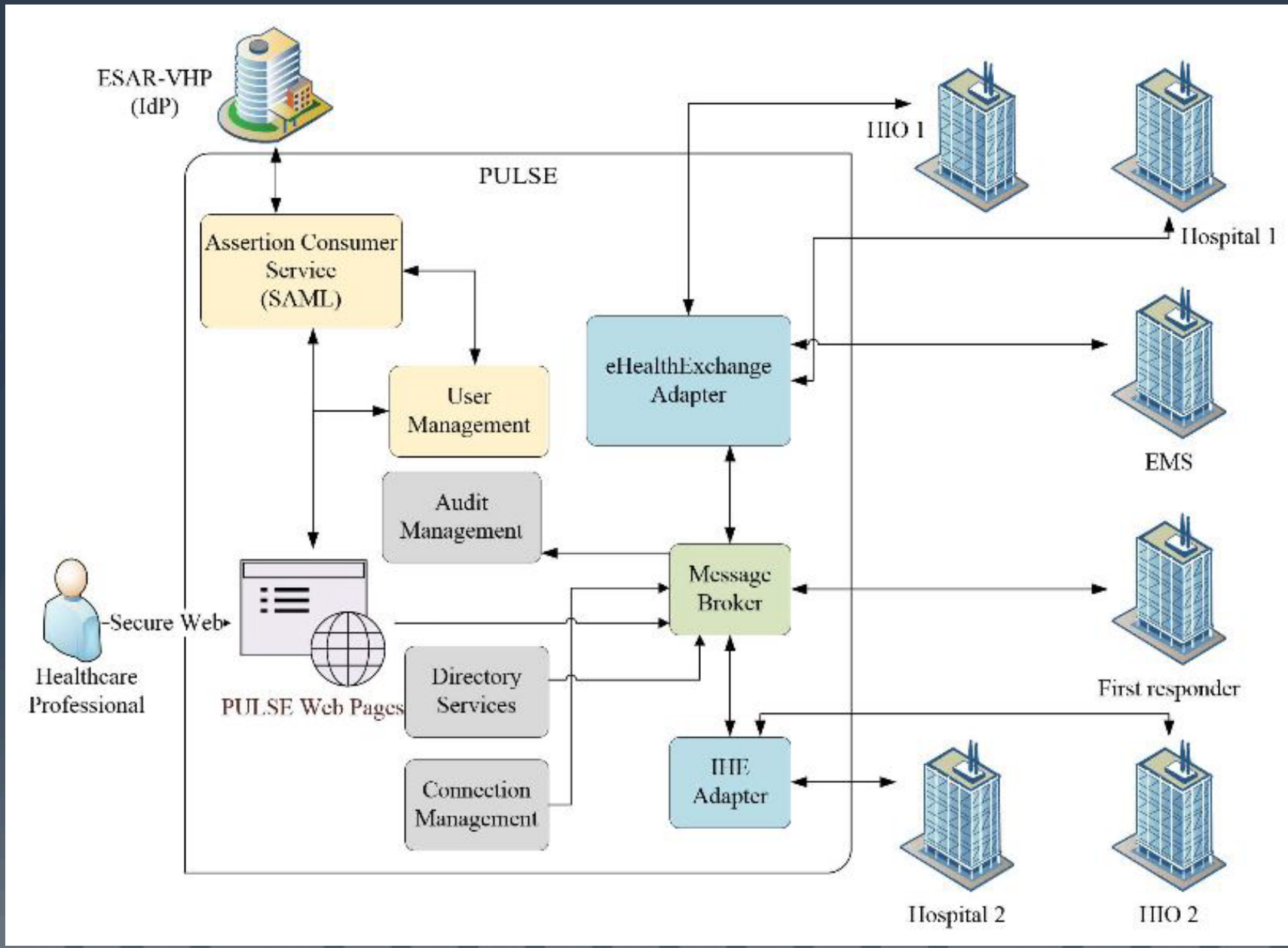
Northern California Wildfires (21 Major) October 8-31, 2017

- *Wine Country (Napa and Sonoma)*
- *43 Dead, 185 Hospitalized (est)*
- *245,000 Acres Burned*
- *8,900 Buildings Destroyed*
- *$3.3 Billion Estimated Damage/Cost*

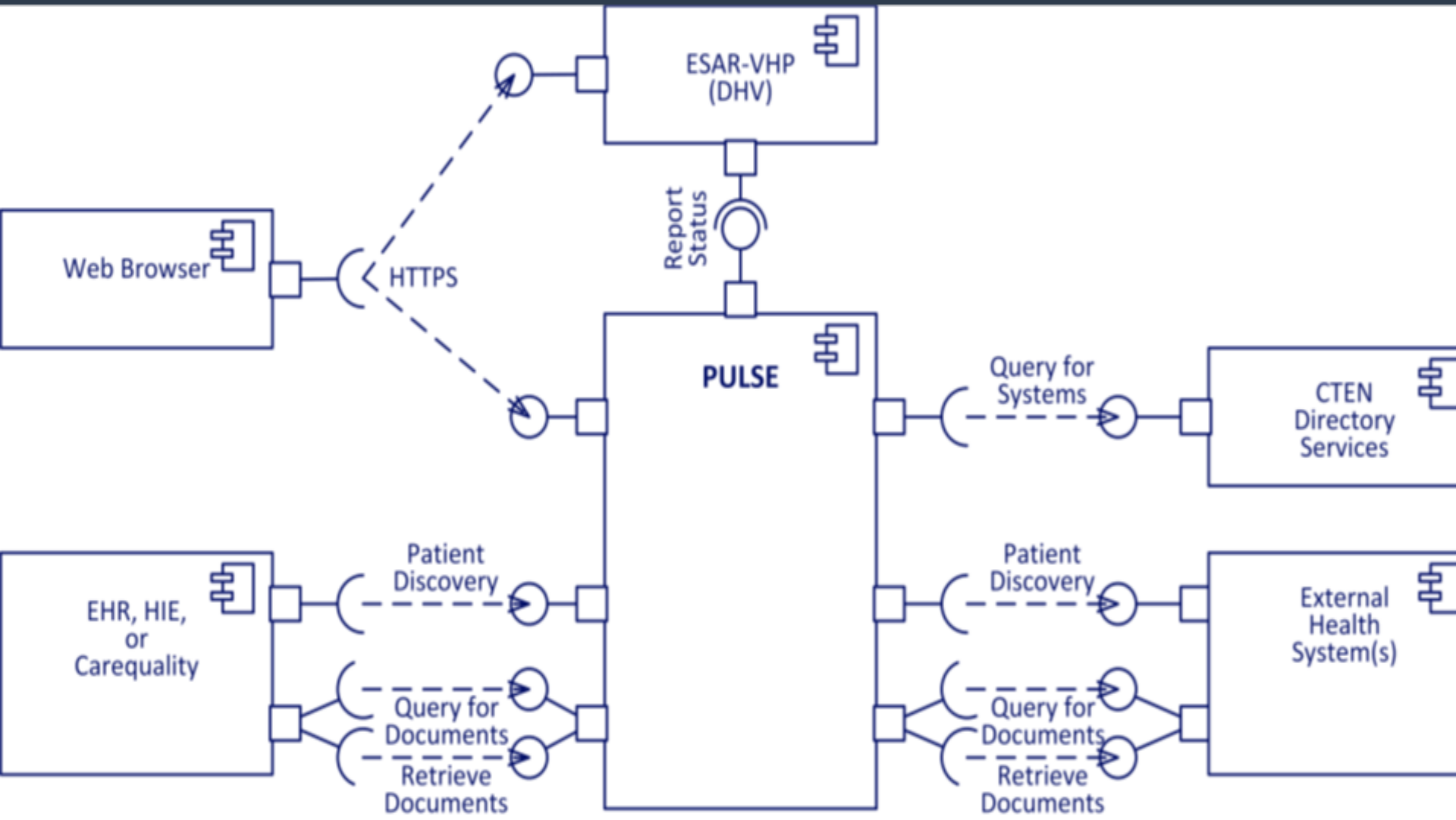
Northern California Fires Medical and Health

- *Evacuation of multiple hospitals (Kaiser, Sutter)*
- *Shelters established*
- *Sonoma Developmental Center relocated to Dixon Fairgrounds with 241 clients*
- *Yountville Veterans Home moved 131 patients to 22 locations*

PULSE Architecture



Major Subsystems that comprise PULSE Interconnections

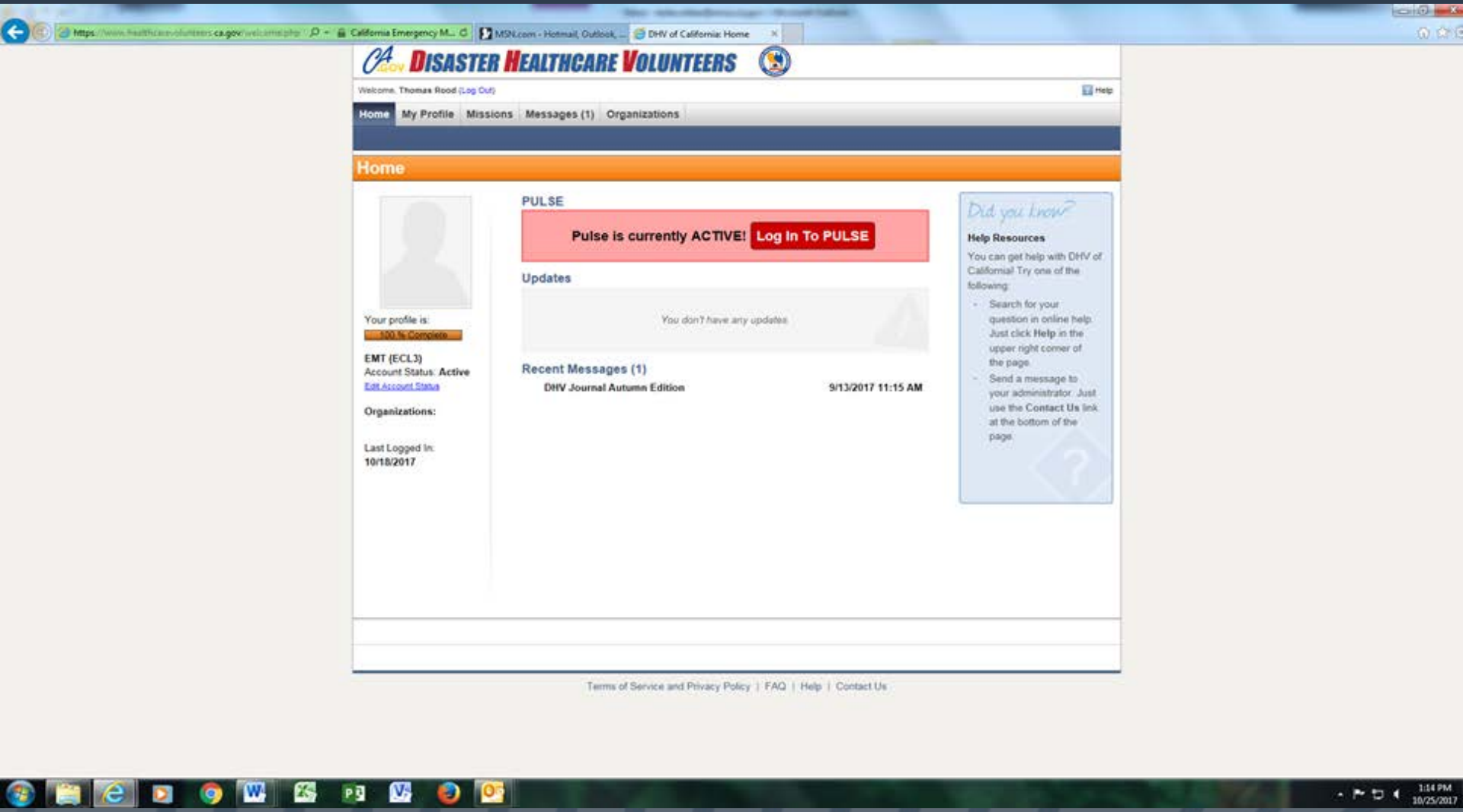


PULSE in California

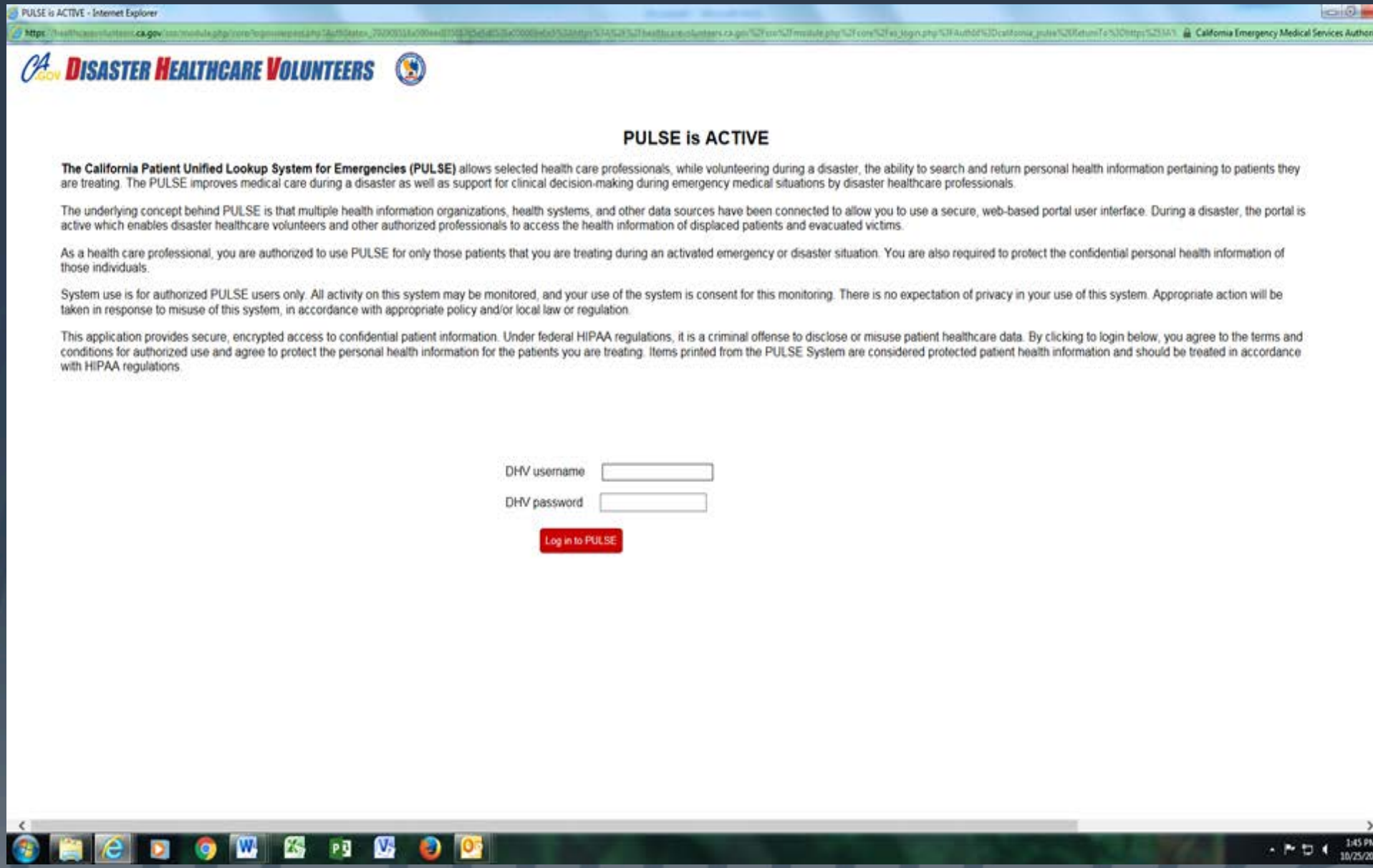
https://california.demo.collaborativefusion.com/index.php — DHV of California (demo)

Demo Site - Demo Site - Demo Site -

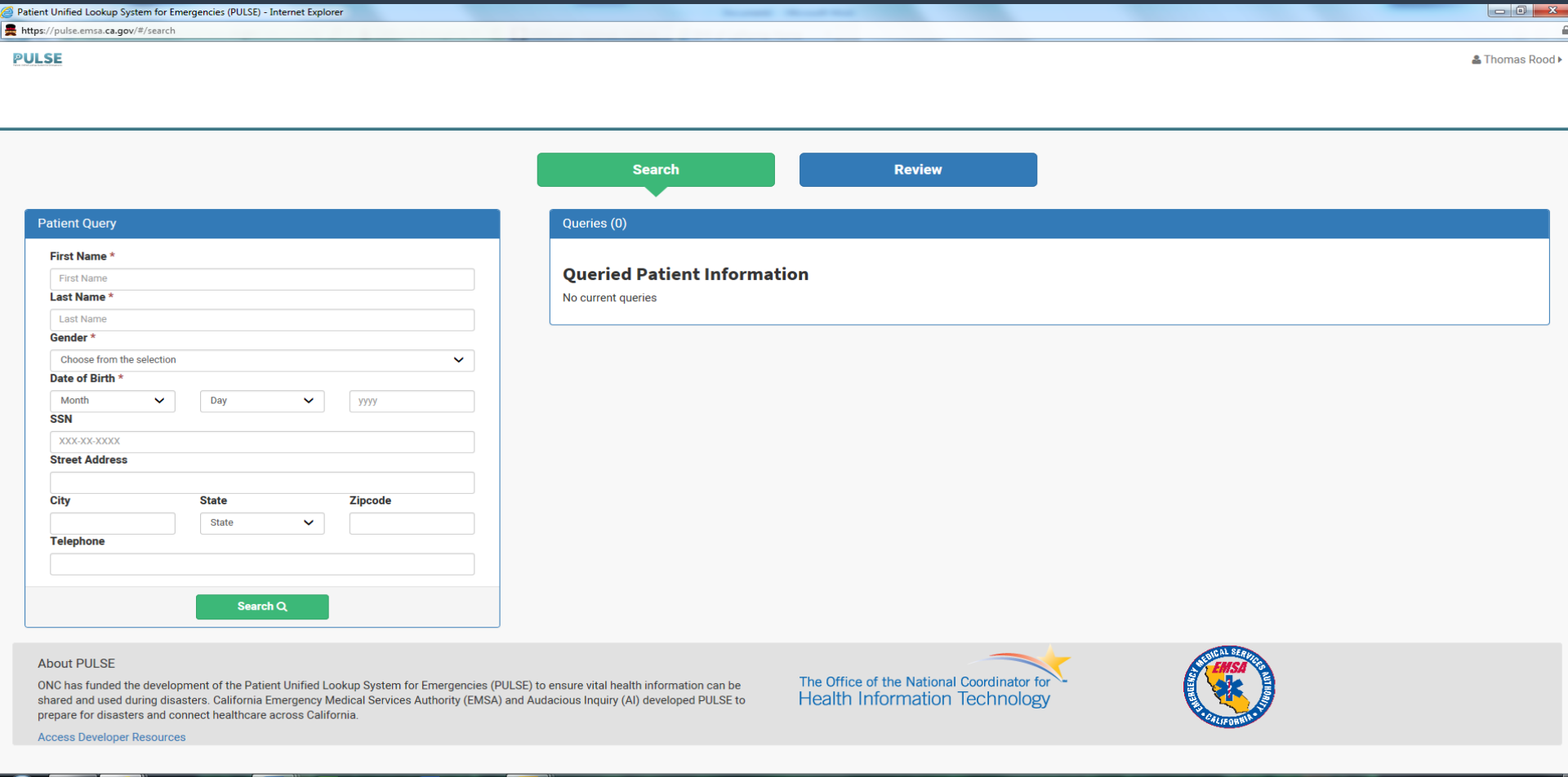
When PULSE is Activated



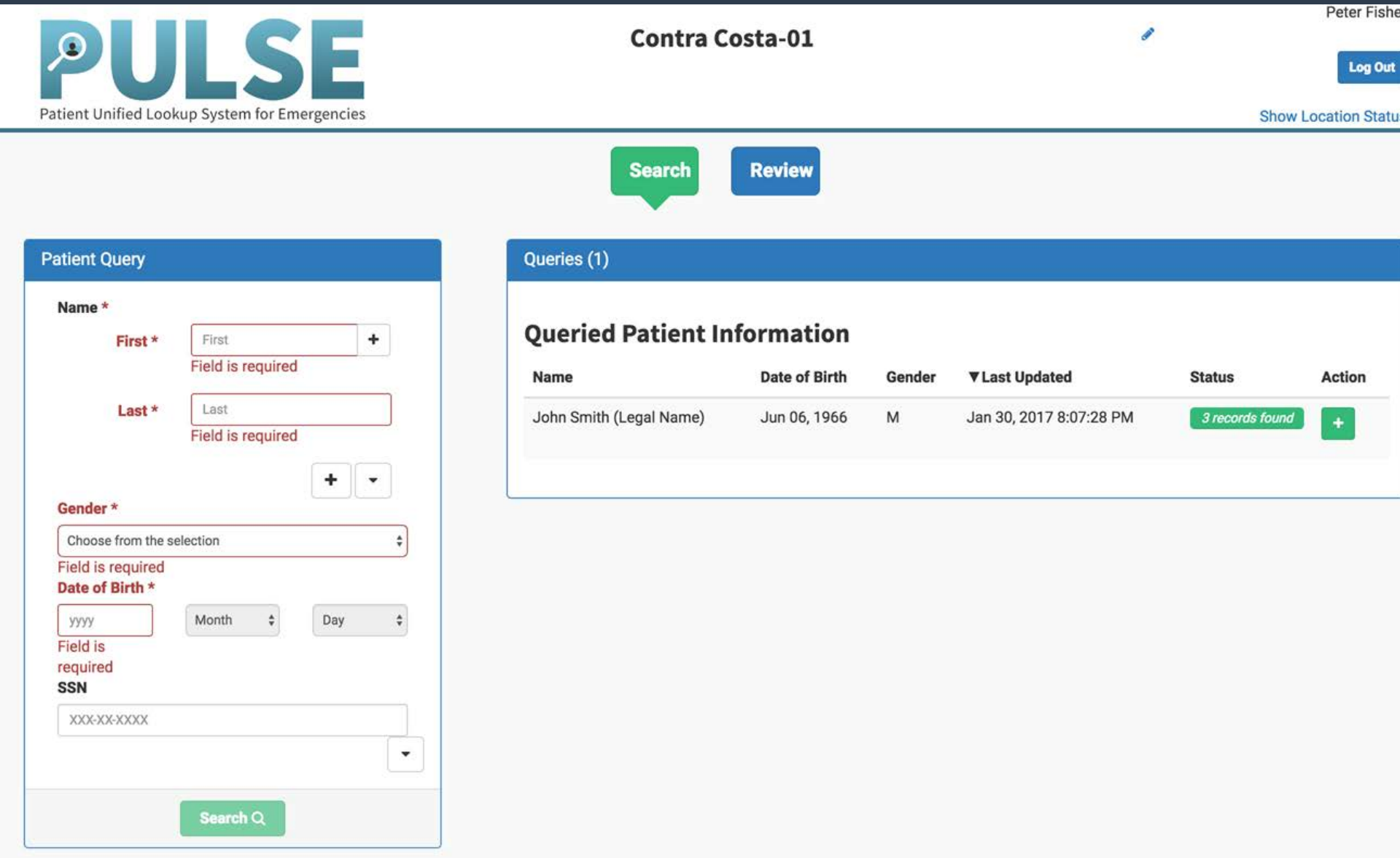
Accessing PULSE



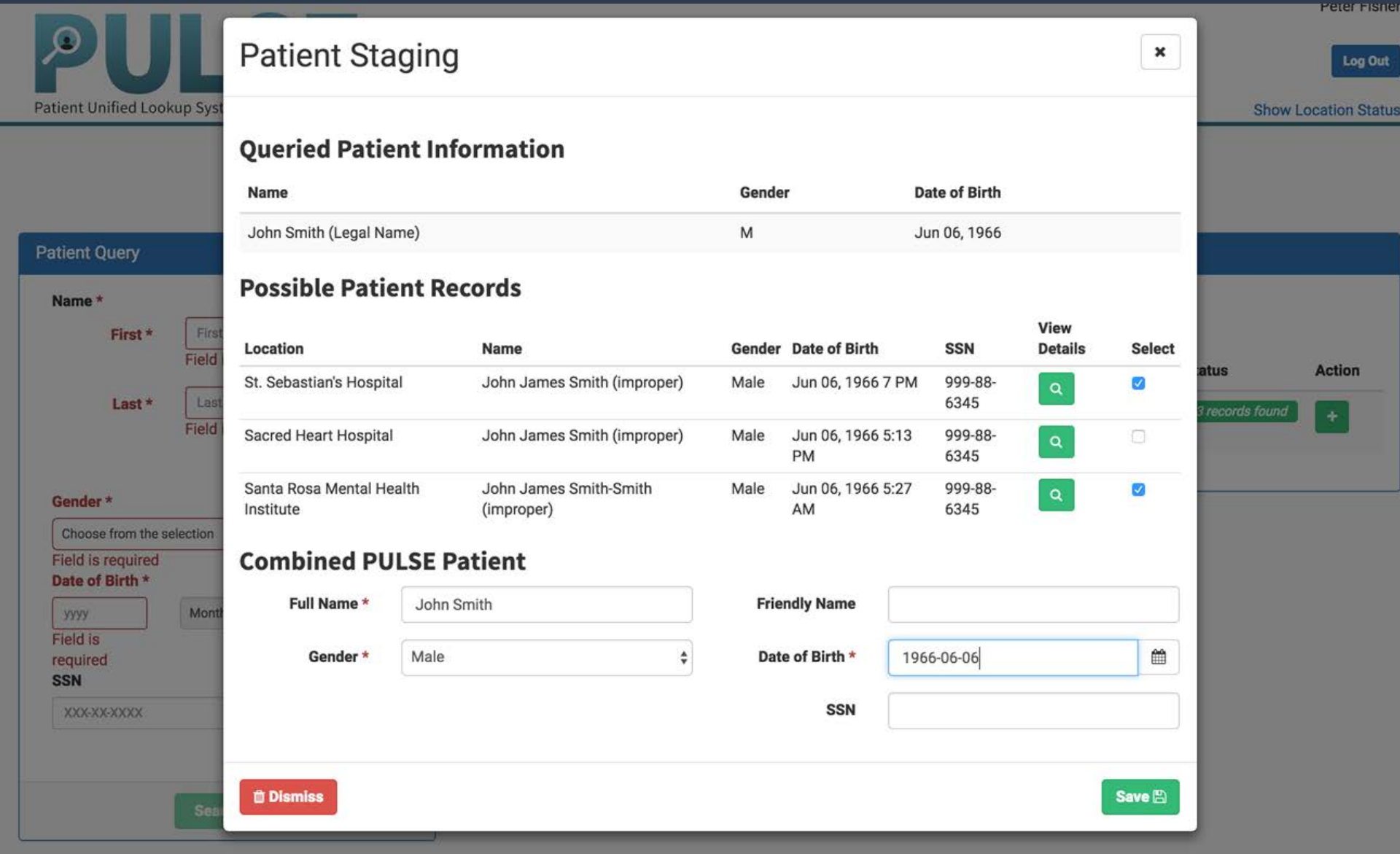
Patient Look-Up Screen for Designated Alternate Care Site



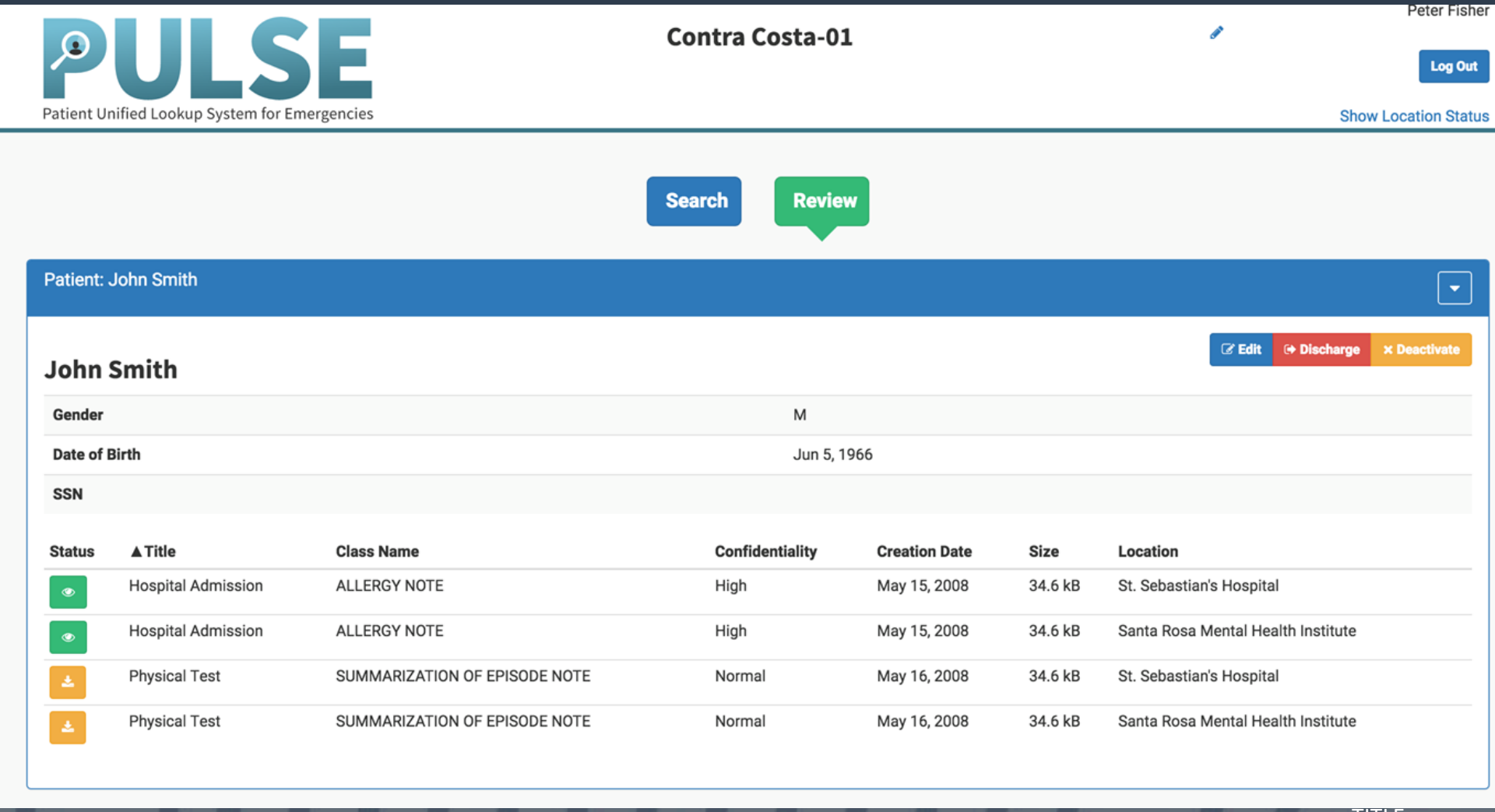
Need Name, Gender, and DOB



Return of Patient Match(s)



Return of Patient Encounters



Return of Patient Information

PULSE
Patient Unified Lookup System for Emergencies

Contra Costa-01

Peter Fisher

Log Out

Show Location Status

Document Review: ALLERGY NOTE

Showing transformed document information

2014 Consolidated CDA

Patient	Isabella Jones
Language	(eng)
Date of birth	February 1, 1988
Sex	Female
Race	WHITE
Ethnicity	NOT HISPANIC
Contact info	Work Place: SMALLSYS INC 795 E DRAGRAM TUCSON 72223, USA
Patient IDs	370 749267972
Confidentiality	Normal
Document Id	TT988
Document Created:	February 26, 2015, 00:40:09
Author	Essentia
Contact info	Work Place:

Specific Medical Information

PULSE
Patient Unified Lookup System for Emergencies

Contra Costa-01

Peter Fisher

Log Out

Show Location Status

ALLERGIES, ADVERSE REACTIONS, ALERTS

Type	Substance	Reaction	Status
ALLERGIES	morphine	rash	Active
ALLERGIES	amoxicillin	anaphylaxis	Active
ALLERGIES	metronidazole	difficulty breathing	Active
ALLERGIES	Macrolide Antibiotics Group	nausea	Active

MEDICATIONS

Medication	Start Date	Route	Dose	Status
Abilify, „[RxNorm:352309]	20150102000000			Active
Crestor, „[RxNorm:859749]	20150101000000			Active
Sucraid, „[RxNorm:213337]	20150217000000			Active
Dilantin, „[RxNorm:855871]	20150216000000			Active

PROBLEMS

1. Alteration in Mood[Status-Active]

SOCIAL HISTORY

Social History Element	Description	Effective Dates
Smoking Status	Current Light Tobacco Smoker.	-

+ Emergency Medical Services (+EMS)

Use Case for Daily EMS Care:

Will enable EMS providers on scene to exchange patient health information with local hospitals.

Local Area
Intended for use during daily EMS operations

Use by EMS Providers on a daily basis for EMS Calls

Used By Paramedics and EMTs

Working in ambulances or for first responders

33 Local EMS Agencies (LEMSA)

California Regional EMS Agencies

- **Central California:** Fresno, Kings, Madera, Tulare;
- **Coastal Valley:** Sonoma, Mendocino, Napa;
- **Inland Counties:** San Bernardino, Inyo, Mono;
- **Mountain Valley:** Alpine, Amador, Calaveras, Mariposa, Stanislaus;
- **North Coast:** Del Norte, Humboldt, Lake;
- **Northern California:** Lassen, Modoc, Plumas, Sierra, Trinity;
- **Sierra-Sacramento Valley:** Butte, Colusa, Glenn, Nevada, Placer, Shasta, Siskiyou, Sutter, Tehama, Yuba

Single Counties

Alameda, Contra Costa, El Dorado, Imperial, Kern, Los Angeles, Marin, Merced, Monterey, Napa, Orange, Riverside, Sacramento, San Benito, San Diego, City of San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Sierra-Sacramento Valley, Solano, Tuolumne, Ventura, and Yolo.

San Diego County

San Diego City/AMR

University of California, San Diego Medical Center

San Diego Health Connect Health Information Organization

San Diego EMS Agency

Orange County

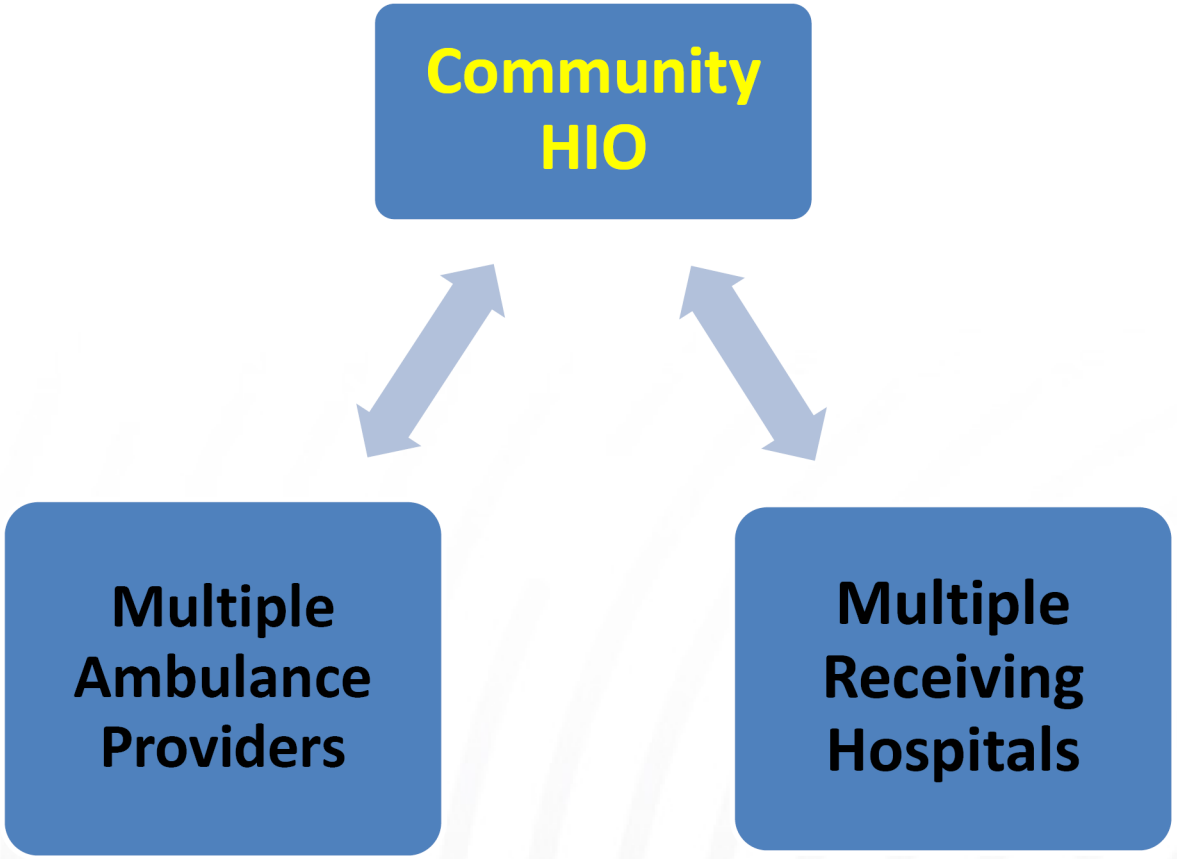
- Newport Beach Fire Department
- Hoag Hospital
- Orange County Partnership Regional Health Information Organization (OCPRHIO)
- Orange County EMS Agency

Electronic Health Record Required for EMS Providers (ePCR):

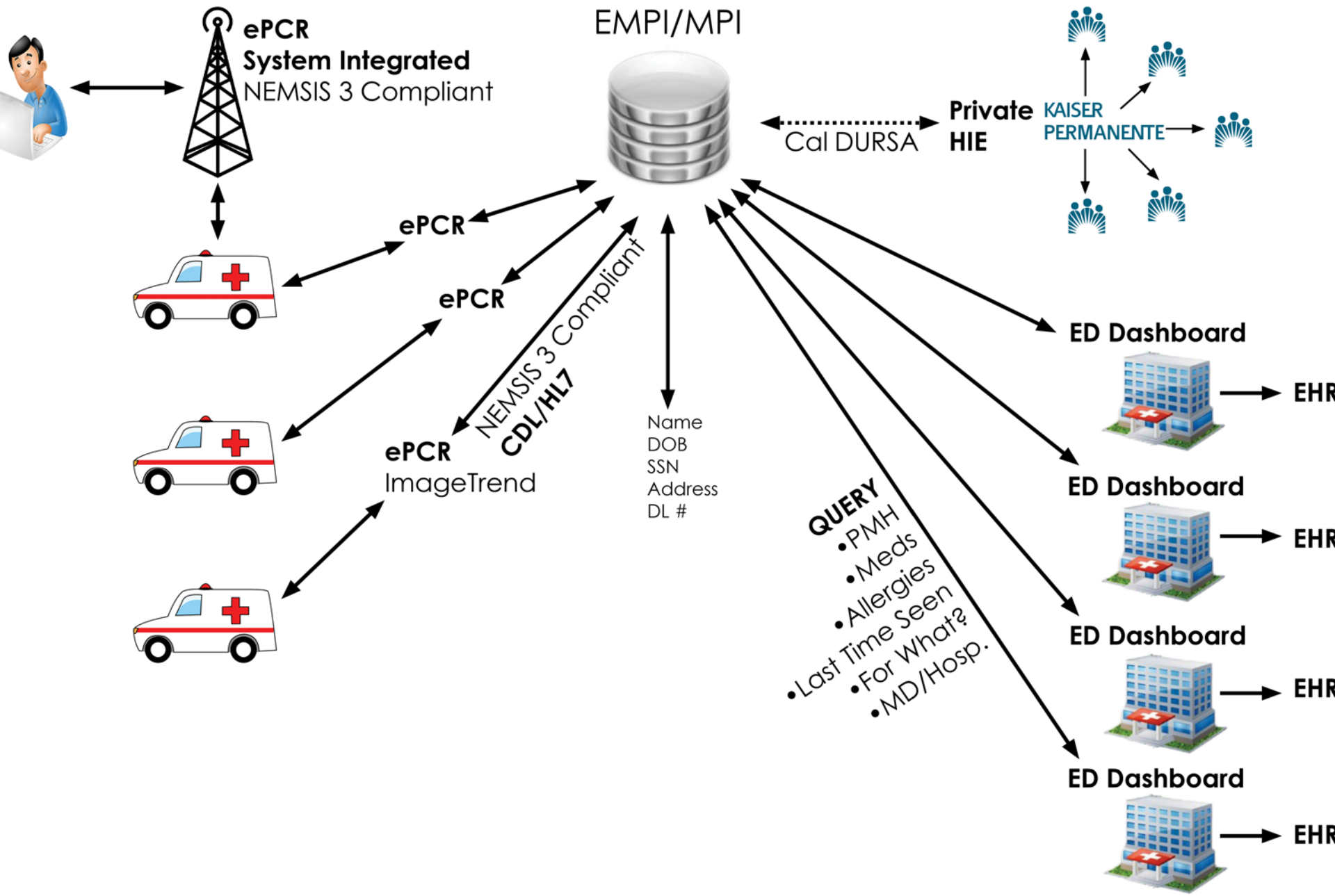
Device at Point-of-Service -- "Gurneyside"

Required by California Health and Safety Code 1797.227 (Effective January 1, 2016)

Model for Use of Community HIO to Achieve "Real-Time", bidirectional, Interoperable connectivity for EMS



Information Organization

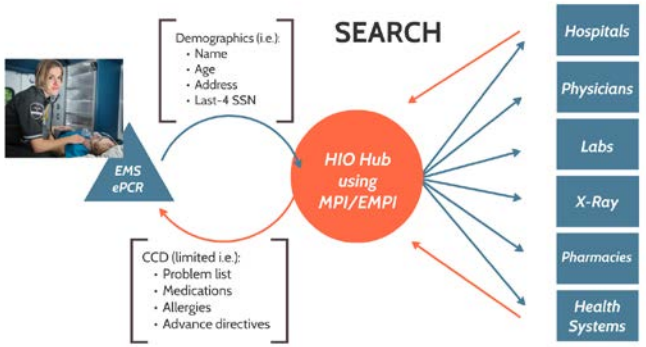


SAFR Model

+EMS

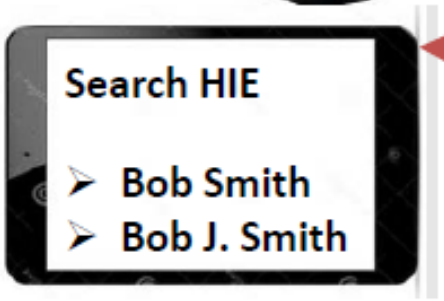
S	**SEARCH:**	PARAMEDICS and EMTs may look up and display patient problem list, medications, allergies, POLST and DNR in field on ePCR screen	Improve clinical decision making Improve patient care
A	**ALERT:**	Display patient Information on hospital dashboard at ED to alert and share incoming patient information to assist in time-sensitive therapies	Improve decision support Better transitions of care Improve patient care
F	**FILE:**	Incorporate ePCR data into hospital EHR in HL7 format (using NEMSIS 3.4 CDA standards)	Build better longitudinal patient record
R	**RECONCILE:**	Receive patient disposition information from hospital EHR to add to EMS provider patient record	Improve population health

SEARCH



Incident to Patient Matching

NEMSIS←→ HL7/CCD translator



EMS Hub

- Problems
- Allergies
- Meds
- Encounters

Patient Match

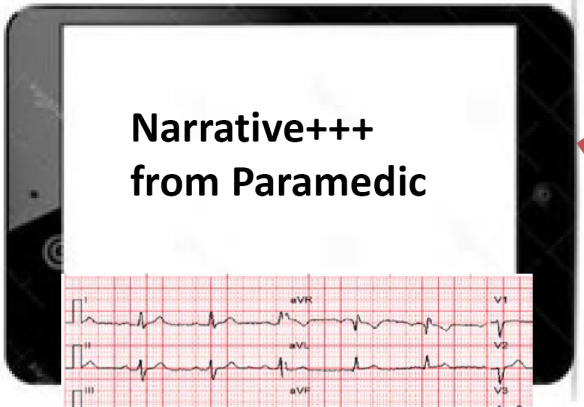
ALERT

EMS ePCR

ALERT

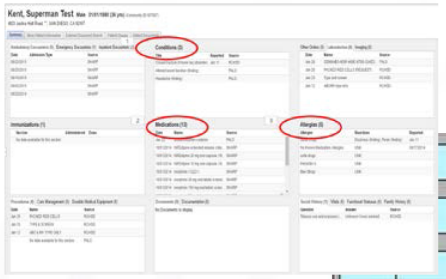
NEMSIS format CDA to ED dashboard

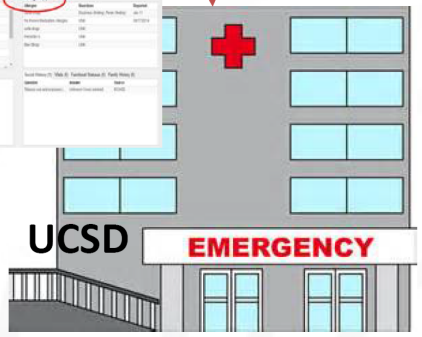
Emergency Department



EMS Hub

Scripps





FILE

EMS ePCR

FILE

NEMSIS 3 XML to HL7
Structured data, not PDF

Hospital EHR

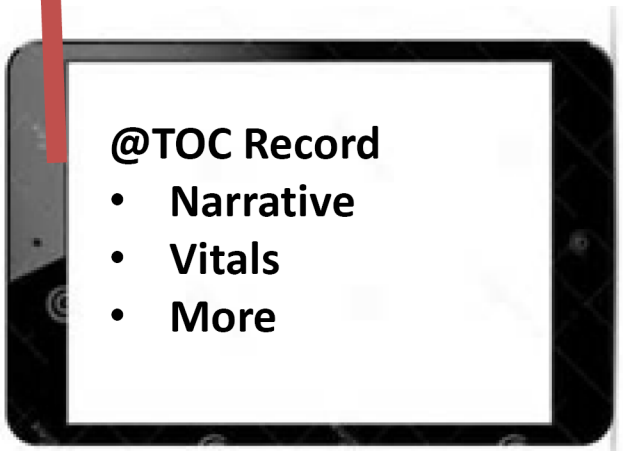
EMS Hub

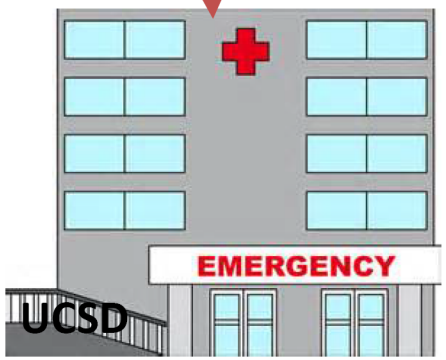
Sharp

Kaiser

Scripps

30 more





RECONCILE

EMS ePCR

RECONCILE

NEMSIS eOutcome Measures

Hospital EHR

ePCR

EMS Hub

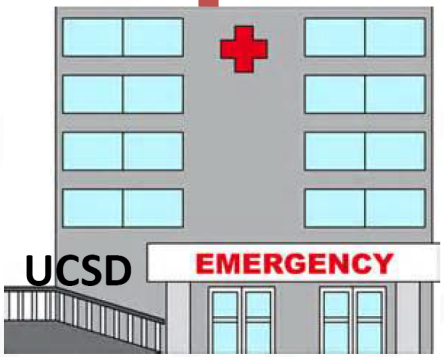
Kaiser

Sharp

30 more

Scripps

- Merge msg
- eOutcomes
- Billing



Ambulance/Agency/Other

- Billing
- eOutcomes

for quality analysis

eOutcomes

UCSD captures & HIE converts

PV1-36
PV1-36
ADT-DG1 segments (where PV2-12="E")
ADT - PV1-44
ADT - DG1 segments
PV1-36 - use for 4317013.
ADT - PV1-45
ADT - PV2-3
ADT-PID-18
MSH

to NEMSIS equivalent

eOutcome.01	Emergency Department Disposition
eOutcome.02	Hospital Disposition
eOutcome.09	Emergency Department Procedures
eOutcome.10	Emergency Department Diagnosis
eOutcome.11	Date/Time of Hospital Admission
eOutcome.12	Hospital Procedures
eOutcome.13	Hospital Diagnosis
eOutcome.14	Total ICU Length of Stay
eOutcome.15	Total Ventilator Days
eOutcome.17	Outcome at Hospital Discharge
eOutcome.16	Date/Time of Hospital Discharge
eOutcome.06	Emergency Department Chief Complaint
eOutcome.07	First ED Systolic Blood Pressure
eOutcome.08	Emergency Department Recorded Cause of Injury
eOutcome.05	Other Report Registry Type
eOutcome.04	External Report ID/Number
eOutcome.03	External Report ID/Number Type

Anecdotal Benefits

- **Ambulance**
- Better Patient Information
- Save Time in completing EHR (ePCR)
- Improved billing data

- **Hospital**
- Receive accurate patient information earlier
- Estimated cost savings to UCSD of $230,000/yr

NEXT STEPS for Disaster and EMS Interoperability

- ***PULSE***
  - *Expand Care Plan Exchange for Disaster response adding additional HIE/HIOs*
  - *On-board to Carequality*
  - *Explore PULSE use for Patient Tracking or family reunification during disasters*

- ***+EMS***
  - On-board additional EMS providers & Hospitals to HIO/HIEs or interoperability systems.
  - Expand the number of LEMSA using the SAFR Model from 4 to 33 by September 30, 2021.
  - Connect EMS providers to specialized registries relevant to emergency medical services ie End of Life Decisions (POLST) and include long term care facilities.
  - Expand information available to Community Paramedics and connect with public health/social service entities.

Sustainability and Growth of HIE for EMS

New Guidance From CMS

State Medicaid Director Letter (SMDL) #16-003, February 29, 2016

Supports "Connecting Health and Care for the Nation: A Shared Nationwide Interoperability Roadmap Version 1.0"

Potential for federal funding at 90% matching rate for state expenditures on activities promoting health information exchange (HIE) that supports *Eligible Providers* in the EHR Incentive Program meeting Meaningful Use

Contact Information

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Leslie.Witten@emsa.ca.gov

(916) 431-3723

Website: www.emsa.ca.gov/HIE

NATIONAL HEALTH IT COLLABORATIVE For the Underserved

"A Public/Private Partnership for a Healthier America"

NHIT Care Campaign: Rebuilding the Health Care Safety Net for Puerto Rico and USVI

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The Establishment of NHIT

The National HIT Collaborative for the Underserved (NHIT) was established in 2008 with a mission to engage underserved populations in the development and use of health information technology (HIT) as a means to support and sustain health equity and economic viability based on NHIT's five pillars: Workforce, Innovation, Policy, Research, and Community.

Supporting Organizations

NHIT public/private partnership launched with support from:

- Department of Health and Human Services (HHS)
- Office of Minority Health (OMH)
- National Institutes of Health (NIH)
- Health Information Management Systems Society (HIMSS)
- Summit Health Institute for Research and Education (SHIRE)

+ over 100 other organizations…

NATIONAL HEALTH IT COLLABORATIVE For the Underserved

Key Initiatives

Since its founding, NHIT has gone onto support the following initiatives:

- HIMSS18 – Leadership Conference
- CLAS Standards Dashboard
- Hepatitis Awareness Initiative
- Diversity Workforce: "HIT" Diversity Workforce Development Initiative
- Lifeline Roundtable

+ over half a dozen other major programs, conferences, and initiatives…

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NHIT's Capabilities

NHIT brings a proven set of approaches for meaningful engagement with underserved populations in the development and use of HIT for health-related outcomes.

Innovation

Addressing the needs of underserved populations in the development of HIT products and services

- Promote innovation and customization of HIT in underserved populations
- Promote entrepreneurship and connect investors to opportunities
- Serve as an incubator for HIT solutions with a focus on underserved populations and conduct pilot testing

Research

Advance basic and translational science on reducing health disparities and underserved populations

- Supporting research studies and clinical trials focused on HIT and underserved populations
- Engaging multiple stakeholders including underserved populations for research
- Analysing and disseminating population health statistics

Policy

Protecting the interests of underserved and at-risk communities to help them benefit from HIT

- Provide policy expertise on HIT and the reduction of health disparities
- Update and raise awareness around CLAS standards
- Provide HIT technical assistance to the underserved and build capacity within community organizations in order to reach the underserved and identify opportunity areas

Workforce

Advancing a responsive and inclusive HIT workforce

- Educate and train health care providers and administrators on CLAS standards and HIT
- Aid in the implementation and tracking of CLAS standards
- Create training courses for health care providers serving the underserved

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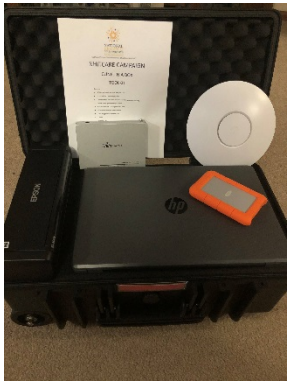
Preserving the Safety Net:

The NHIT Care Campaign to Restore, Rebuild and Transform the Health Care Safety Net for Puerto Rico and USVI



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A Dire Public Health Challenge

More than 450,000 Americans in Puerto Rico (PR) and the US Virgin Islands (USVI), are served by 24 Federally Qualified Health Centers (FQHCs) and approximately 100 affiliated health clinics distributed across the islands. The FQHCs provide essential primary and community care services for the most vulnerable communities, specifically those citizens who are at or below 200% of the federal poverty line. The FQHCs combined with local clinics and Individual Practice Associations (IPAs) serve 1.7 million patients, over half the total population of PR and USVI.

NATIONAL HEALTH IT COLLABORATIVE
For the Underserved

FQHCs in Puerto Rico and USVI

After making progress towards restoring power to more than 1 million residents in PR and USVI following Hurricane Irma on Sept. 6th, PR and USVI were struck by Hurricane Maria on Sept. 20th, causing severe, widespread damage to essential infrastructure. The National Health IT Collaborative for the Underserved (NHIT), with guidance from PricewaterhouseCoopers (PwC) and supporting partners, immediately launched the **NHIT Care Campaign to help rebuild the HIT and health care infrastructure by providing emergency medical response, healthcare supply chain, and technology-enabled care coordination** to help FQHCs and local primary care hubs for underserved communities.

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Current State of Health-Related Infrastructure

Hurricanes' Irma and Maria have caused severe, widespread damage to the infrastructure and built environment in Puerto Rico and USVI, leaving many without power, clean water, transportation, telecommunications services, and other essential resources.

Puerto Rico

58%	Power generation (generation ≠ consumption)
78%	People with telecommunications service
93%	People with water (boil advisory)
69%	Cell sites

U.S. Virgin Islands

45%	Approx. homes energized
80%	Approx. people with telecommunications service
100%	People with water (boil advisory)
24	Hot spots scattered amongst all three islands

Notes: East End Health Center is energized, however, both of Frederiksted Health C'sted, Inc sites are on unreliable generators. No land line phones are available in the USVI.

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NHIT Care Campaign: Key Objectives

The NHIT Care Campaign's focus and resources are designed for allocation on priority needs for rebuilding and enhancing Puerto Rico and USVI's HIT and health care infrastructure **aligned with current emergency response activities** for FQHC and primary care hub geographic locations. The Campaign **leverages existing federal investments for Puerto Rico and USVI** to pursue a strategic path forward, building upon current healthcare architecture and medical provider support activities in alignment with state and federal-funded initiatives. The Campaign partners respectfully request focused, impactful support from the Department of Health and Human Services (HHS) to enable:

1. Support the **establishment of a transparent public-private partnership oversight council** to help prioritize, guide, and approve activities as thoughtful stewards of federal resources;

2. **Create a future-proof, flexible health-related emergency response and recovery framework** to coordinate healthcare supply chain resource allocation while addressing critical and immediate issues such as access to reliable power, internet, clean water, and fuel supplies; and

3. **Implement leading technology-enabled care coordination in alignment with local public, private, and community stakeholders** to rebuild and extend Puerto Rico's and the USVI's healthcare and health data infrastructure, and scale public health reporting systems

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NHIT Care Campaign: Partners

The NHIT Care Campaign has elicited a strong groundswell of support and pro bono resources from public and private sector organizations.

Leading Partners

Luis Belen, CEO
Campaign co-lead; convening public/private stakeholders; identifying and communicating immediate and long-term needs of Puerto Rico; expertise in SDH analytics; workforce education and training

Chan Harjivan, Partner
Campaign co-lead; Project management, convening public, private, and non-profit stakeholders for coordination of emergency response/recovery/post-recovery; HIT strategic planning; emergency supply chain management

Community Partners

Javier Jimenez, Director
the Primary Care Association of Puerto Rico; providing key medical, technical, and humanitarian support across Puerto Rico's FQHCs and related primary care clinics

Tony Fernandez, Executive Director
Ponce Medical School Foundation; focused on strengthening service capabilities and enhancing care coordination for Puerto Rico's healthcare practitioners.

Christensen Institute; reshaping society's most pressing issues though rigorous research and public outreach

UVI Caribbean Exploratory Research Center; providing research, mentoring, and training to reduce health disparities

The Emerging Technology Consortium; bridging the gap between Federal Policy and State Economic Plans to transform Urban Centers

Technical Partners

Briljent LLC
CH-MRC
Health Gorilla
Impactivo
Williams Medical Technology (WMT)

Provider & Patient Support Partners

Uticorp/Utinet
Healthcare Ready
INSPIRA
ASPR

Resource Partners

Amazon

Sprint

Federal Advisory

HRSA	Education
DoD	NCDMPH
ASPR	USDA – WIC
ONC	CGHE
ACF	HHS

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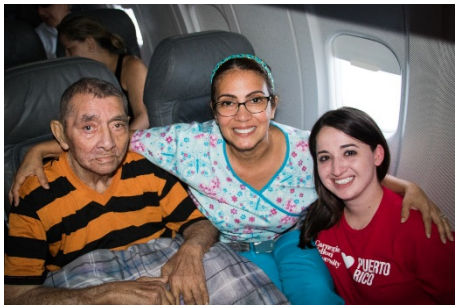
The Path Forward

Individuals and groups such as Rosana Elena Guernica, a Carnegie Mellon University student, have organized humanitarian missions to Puerto Rico, benefiting doctors and community leaders working with victims and patients.



- Raised over $200,000
- Delivered 46,500 lbs. of medical supplies, medicine, and relief aid
- Evacuated 211 patients to FL, NY, TX, NV, CA, MN, GA, CT, and PA

What we need now

- Real-time situation awareness on the ground
- Immediate inspection and remediation of health provider sites
- Rapid connectivity to the internet to enable communication and telemedicine
- Enhancement of coordination and alignment of federal, local, commercial, and NGO efforts
- Coordination of healthcare emergency/recovery supply chain
- Scalable clinical, community, and public health reporting systems in anticipation of regional outbreaks such as Zika
- HIT needs assessment, infrastructure roadmap, and strategic plan development
- HIT infrastructure implementation for data interoperability and care coordination

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The Office of the National Coordinator for Health Information Technology

Q&A/Discussion

@ONC_HealthIT HHSONC HealthIT.gov