

CALIFORNIA  
PULSE+EMS INITIATIVE  
TO ADVANCE HIE IN EMS



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

WELCOME

Dr. Howard Backer  
EMSA Director

*Technology  
is just a tool.*

*~ Bill Gates*

# INTRODUCTIONS

Dan Smiley  
Chief Deputy Director

*Other people's  
ideas are often better  
than your own.*

*~ Amy Poehler*

# COMMITTEE STRUCTURE

June Iljana  
Project Coordinator

*When we ask for advice,  
we are usually looking  
for an accomplice.*

*~ Saul Bellow*

WHERE WE ARE,  
WHERE WE'RE GOING,  
AND WHY

Dan Smiley  
Chief Deputy Director

*Change  
before you have to.*

*~ Jack Welch*



# Vision

EMS is a full participant in health information exchange with the ability to securely send, receive, find and use relevant patient information.

***Connecting EMS to the broader healthcare system***

# Purpose

- Better patient outcomes and experiences
- Improved transitions of care
- More complete longitudinal patient record
- Greater ability to aggregate and analyze system data
- Resilience in the face of disasters

# Strategy

Support technical and administrative infrastructure development to enable EMS providers and hospitals to securely share electronic patient information via health information organizations.

# HIE Readiness

- ePCR adoption
- Provider interest
- HIE availability
- Hospital support
- NEMESIS 3 implementation

2016 NEMESIS 3 and HIE status/readiness survey will

- Evaluate EACH 9-1-1 ground ambulance transport provider
- Weight by proportion of transports

# HIE-Related Legislation from 2015

- AB 503 (Rodriguez) permits a hospital to release patient-identifiable medical information to an EMS provider, to the LEMSA, or to EMSA.
- AB 1129 (Burke) requires an EMS provider, when submitting data to a LEMSA, to use an electronic health record system that is compliant with CEMISIS and NEMISIS standards.
- SB 19 (Wolk) requires EMSA to establish the California Physicians Order for Life Sustaining Treatment (POLST) eRegistry Pilot, if funding is available.

# ONC GRANT

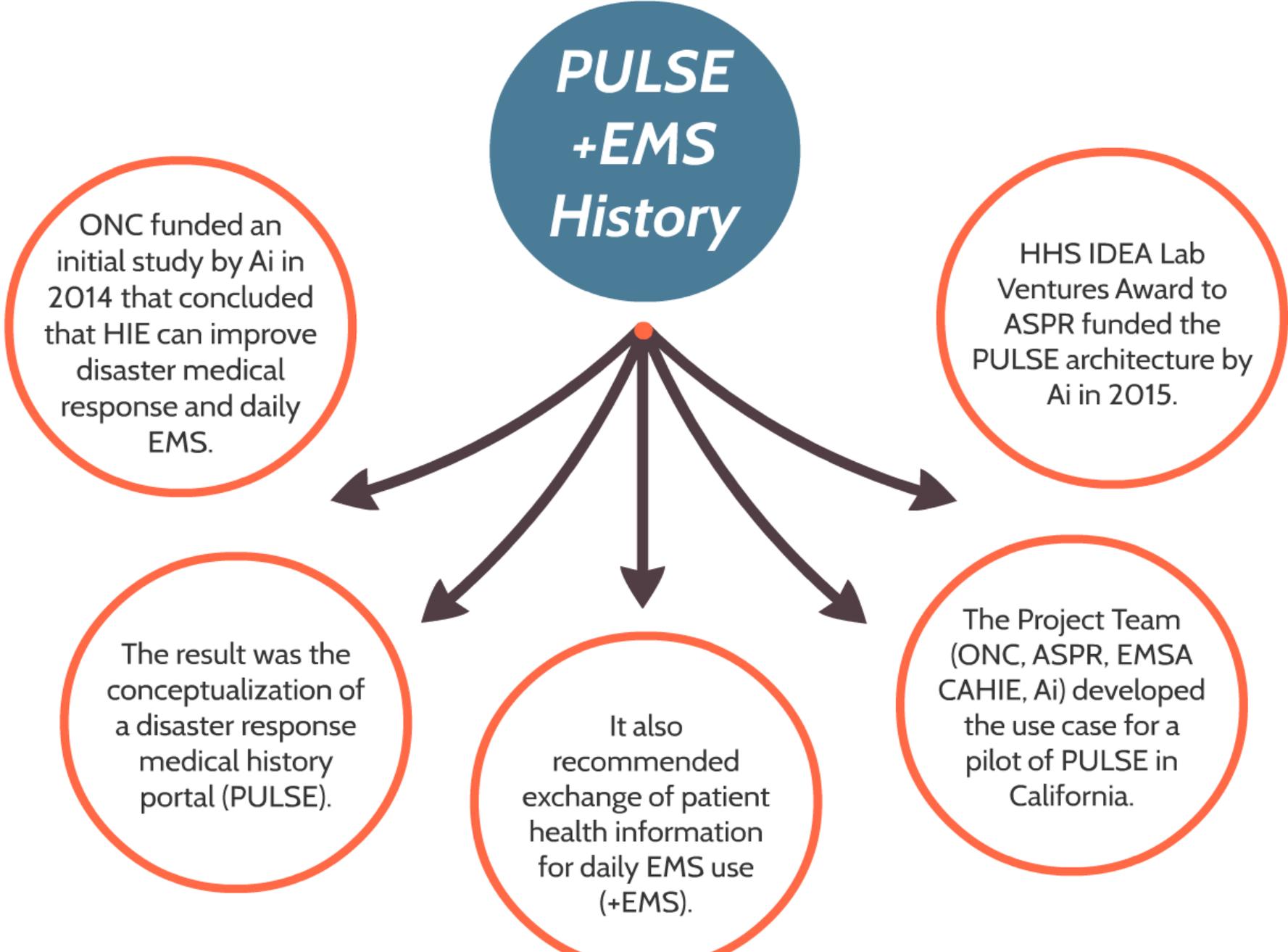
June Iljana

Project Coordinator

*Pick battles  
big enough to matter,  
small enough to win.*

*~Jonathan Kozol*

# PULSE +EMS History



ONC funded an initial study by Ai in 2014 that concluded that HIE can improve disaster medical response and daily EMS.

The result was the conceptualization of a disaster response medical history portal (PULSE).

It also recommended exchange of patient health information for daily EMS use (+EMS).

HHS IDEA Lab Ventures Award to ASPR funded the PULSE architecture by Ai in 2015.

The Project Team (ONC, ASPR, EMSA CAHIE, Ai) developed the use case for a pilot of PULSE in California.

# Advance Interoperable Health IT to Support HIE Program

- Expand HIE functionality and benefits to provider types that were not included in the meaningful use incentive program
- Promote access to external sources of health information to improve care delivery
- Develop interoperability to improve longitudinal patient records and QA/QI efforts

# PULSE+EMS Grant from ONC

Funded by Cooperative Agreement

Grant #90IX0006/01-00

Office of the National Coordinator,

U.S. Department of Health and Human Services

- 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

# PATIENT UNIFIED LOOKUP SYSTEM FOR EMERGENCIES

Jim Switzgable  
Project Manager

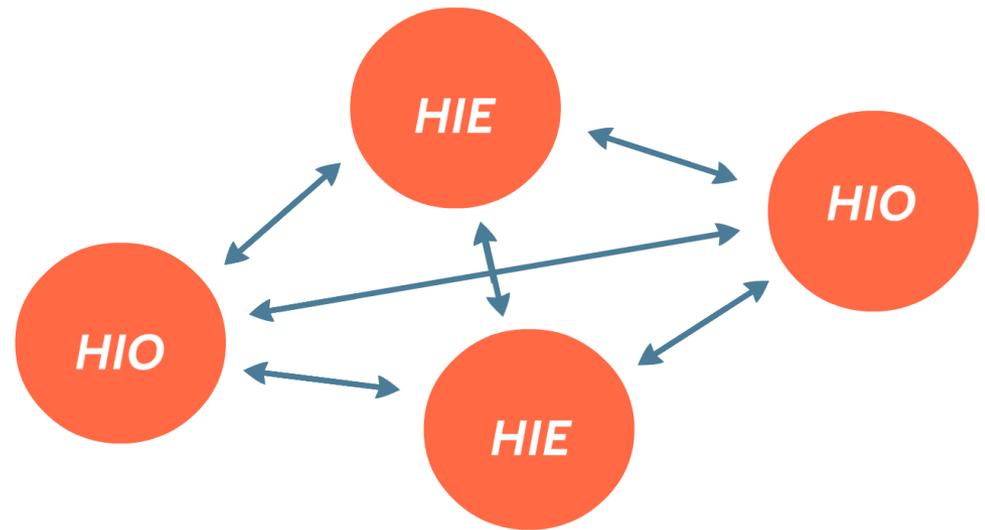
*Eventually  
everything connects –  
people, ideas, objects*

*~Charles Eames*

# PULSE +EMS is not a State IT Project

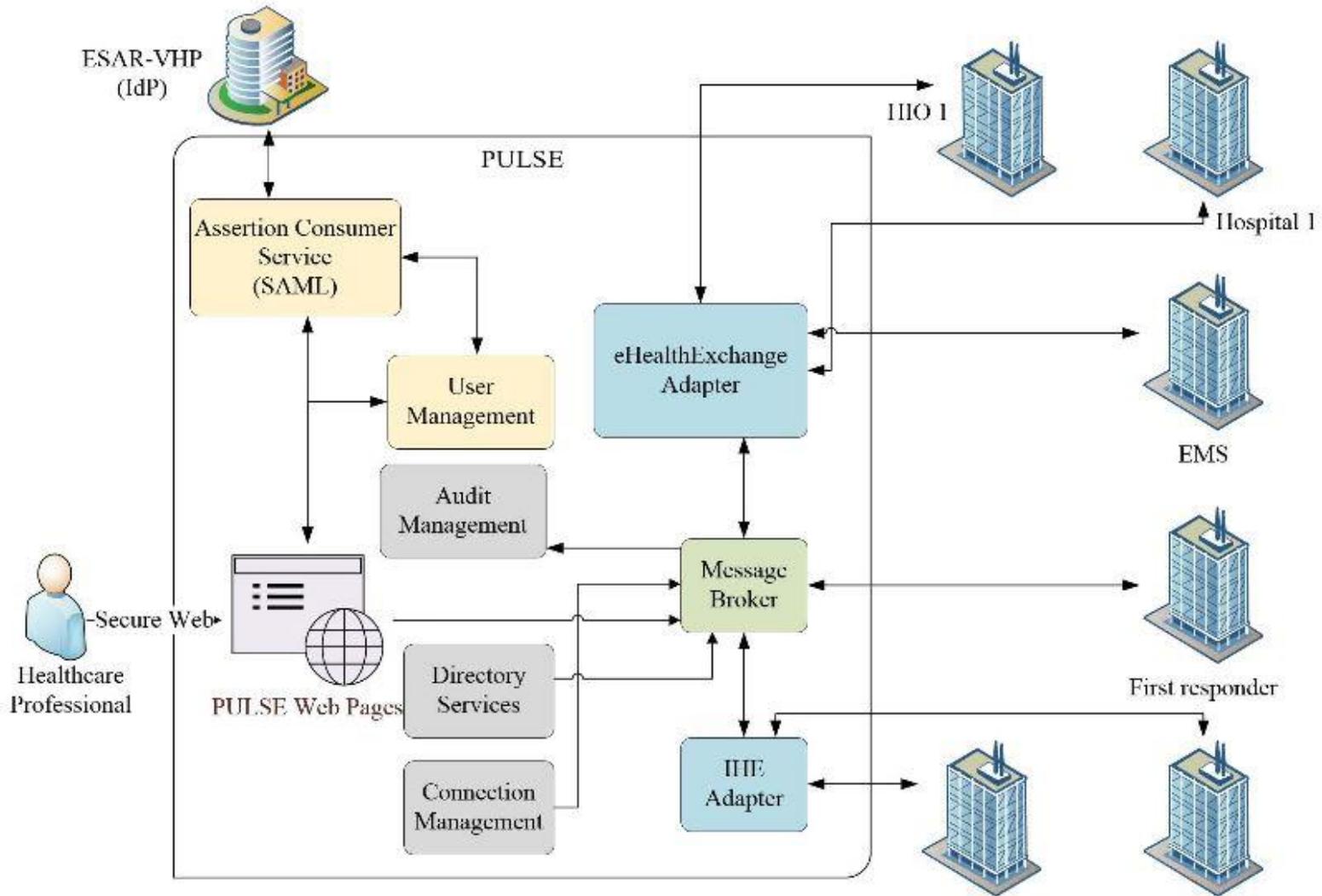
- It will be locally operated using existing health information exchange programs.
- It will allow for Peer-to-Peer connection, consistent with ONC grant goals.
- EMSA will only define functional endpoints.
- EMSA will not define specific software development requirements except to ensure connectivity with hospital-based EHRs and the Disaster HealthCare Volunteers system.

# PULSE



- Multiple data sources
- Interoperability broker
- Search function for three use cases
- Direct secure messaging and federated directory services
- Enabled by the California Trusted Exchange Network (CTEN)
- Integrating the Healthcare Enterprise (IHE) standards

# Ai Report PULSE Architecture





- HIEs, HIOs, Health Systems



- Disaster Healthcare Volunteers (DHV) access to patient records from alternate care sites



- Hospital staff access to remote HIOs for EHRs on patients displaced during a disaster

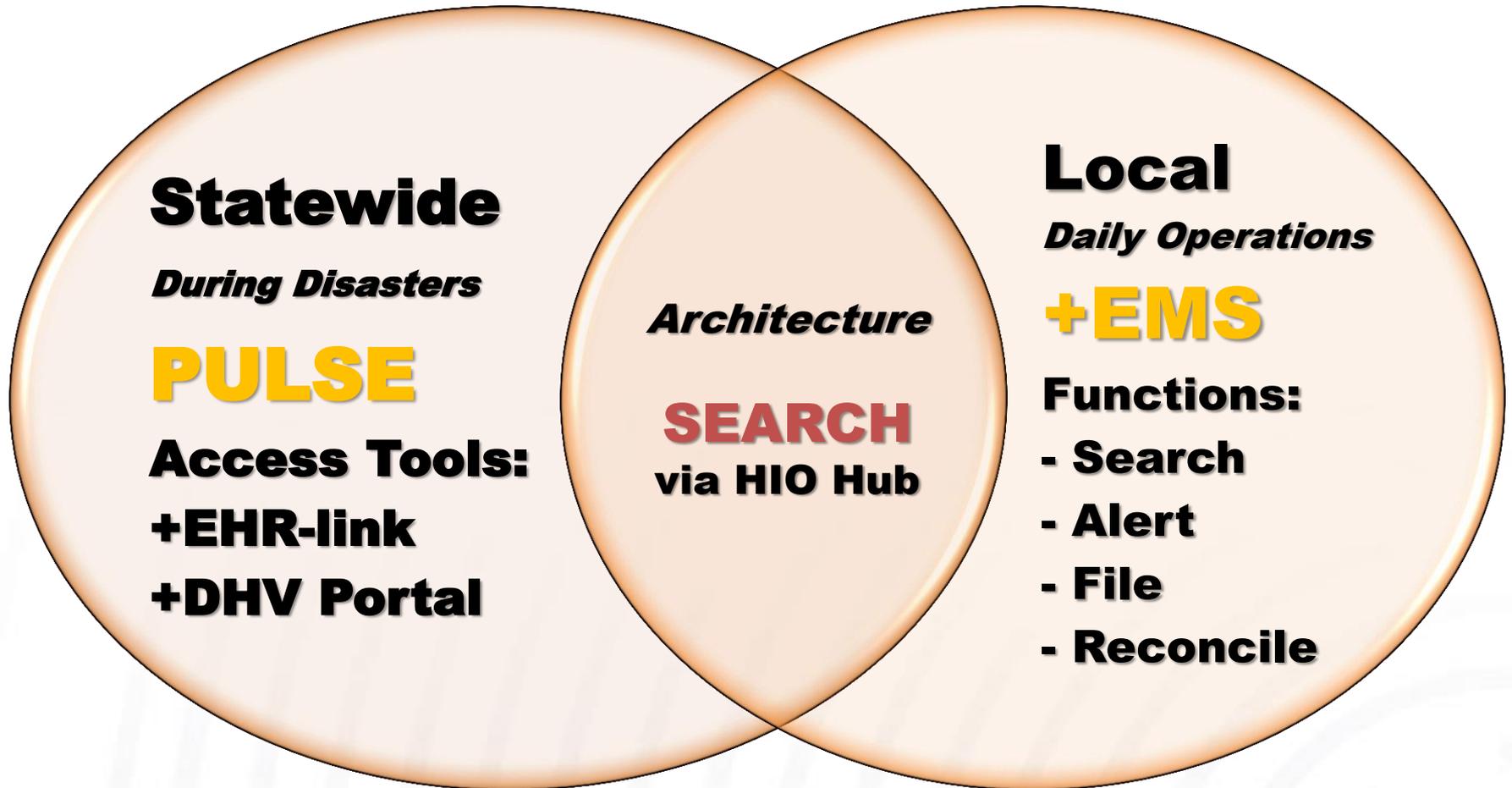


- Hospitals, physicians, labs, imaging, pharmacies



- Search
- Alert
- File
- Reconcile

# PULSE+EMS Project Relationships





**+DHV**

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



**+EHR-link**

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

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



**+EMS**

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

***Local Area  
Intended for use during daily EMS operations***

# SAFR MODEL

Dan Smiley  
Project Director

*If you can't  
explain it simply, then  
you don't understand it  
well enough.*

*~Albert Einstein*

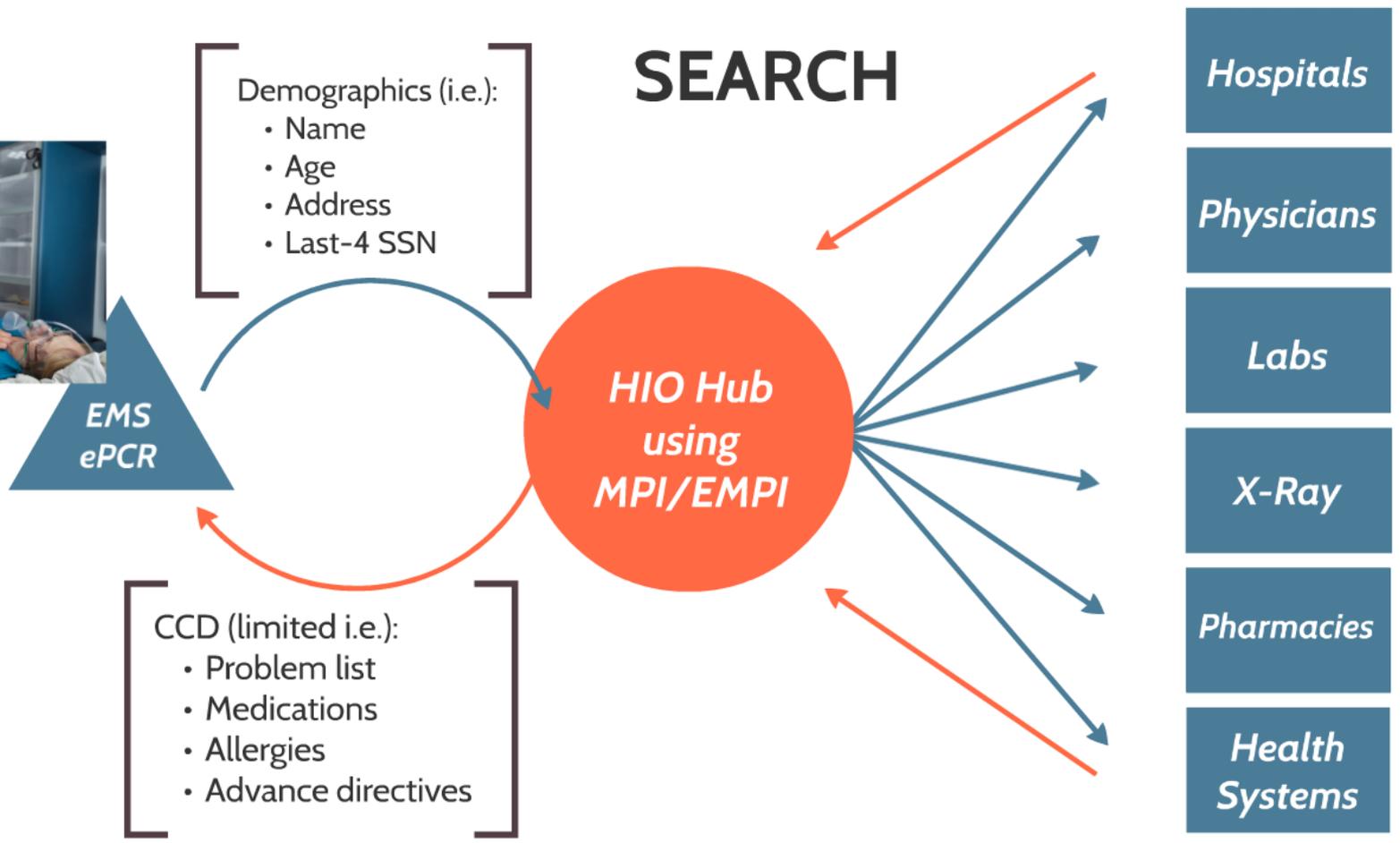
# +EMS

*Four HIE Functions for EMS:*

**Search, Alert, File, Reconcile**

**SAFR**

<b>S</b>	<b>SEARCH:</b>	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
<b>A</b>	<b>ALERT:</b>	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
<b>F</b>	<b>FILE:</b>	Incorporate ePCR data into hospital EHR in HL7 format (using NEMESIS 3.4 CDA standards)	Build better longitudinal patient record
<b>R</b>	<b>RECONCILE:</b>	Receive patient disposition information from hospital EHR to add to EMS provider patient record	Improve population health



## Demographics (i.e.):

- Name
- Age
- Address
- Last-4 SSN
- Cell phone
- Etc.

## Returned Information (limited i.e.):

- Problem list
- Medications
- Allergies
- Advance directives



**EMS**  
**ePCR**

**ALERT**



***NEMSIS format CDA  
to ED dashboard***



**Emergency  
Department**



**EMS**  
**ePCR**

**FILE**



**NEMESIS 3 XML to HL7**  
**Structured data, not PDF**



**Hospital**  
**EHR**

# FILE Challenges

- Current practice is to attach a PDF of PCR
- Under the ONC grant PDF is not considered HIE because it's not consumable information
- EHRs are not currently structured to receive NEMESIS 3 data elements in HL7 format
- Need to align NEMESIS 3 with the 18 CCD segments

# Options for File Function

- CCD – established standard
- Full NEMESIS CDA
- Custom – EMS-specific hybrid



**EMS**  
**ePCR**

**RECONCILE**



***NEMESIS eOutcome Measures***



***Hospital***  
***EHR***

# Options for Patient Outcome Fields

- CCD
- ADT
- Hospital Discharge Summary

# Other EMS/HIE Integration Projects

- Poudre Valley, CO: FILE
- Indianapolis, IN: SEARCH
- Rochester, NY: SEARCH and FILE
- Ft. Worth, TX: ALERT, FILE, RECONCILE
- Tulsa and Oklahoma City: SEARCH and FILE
- Montgomery County, TX: ALERT and RECONCILE

LUNCH

*People don't buy  
what you do;  
they buy why you do it.*

*~Simon Sinek*

## NEXT STEPS

June Iljana  
Project Coordinator

*The best prize life has to offer is the chance to work hard at work worth doing.*

*~Theodore Roosevelt*

# Next Steps

- Working with federal, state and local partners
  - ONC
  - NHTSA
  - NEMESIS
  - ASPR
  - CalOHII
  - CAHIE
  - Local EMS Agencies
- EMSA will issue grants to implement PULSE+EMS

# Contractual Services

- 1 Contract for Technical Advisor services
- 1 Contract for PULSE interoperability based upon PULSE architecture (SSO, SAML2)
- Minimum of 4 HIO Contracts for PULSE Interoperability and Exchange
- 1 Contract for DHV Interface (SSO, SAML2)
- Minimum of 2 Contracts for local +EMS implementation (HIO, 9-1-1 ambulance provider, hospital)

*\*All contracts will follow federal and state procurement policies and requirements*

# Adoption

- Service level agreements, governance documents
- SEARCH and ALERT connectivity in +EMS
- PULSE user testing of +DHV and +EHR-link

# Exchange

- SEARCH and ALERT functionality in +EMS
- PULSE tabletop drill for +DHV and +EHR-link

# Interoperability

- FILE and RECONCILE functionality in +EMS

# POLST

Dan Smiley  
Project Director

*Planning is bringing the  
future into the present  
so that you can do  
something about it now.*

*~Alan Lakein*

ROUNDTABLE  
DISCUSSION

PUBLIC COMMENT

*Planning is bringing the  
future into the present  
so that you can do  
something about it now.*

*~Alan Lakein*

# MEETING SUMMARY

*Action Items*

*Sub-Committees*

*Next Meeting*

# *Contact Information*

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