



ESF-8 Force Multiplier

Sharing Patient/Person Tracking Information Across Jurisdictions National and Local





Session Objectives

- Describe the emerging data exchange architecture being established to provide patient tracking for emergencies.
- Explain how patient tracking systems and secure message routing can be used for involving multiple jurisdictions and states.
- Examine current capability to support effective patient tracking during emergencies.

Panel of Presenters

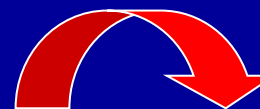
Joe Lamana	ESF #8 Patient Movement Coordinator Assistant Secretary for Preparedness and Response U.S. Department of Health and Human Services
Paul Petersen	Pharmacist Strategic National Stockpile Coordinator State of Tennessee Department of Health
John Donohue	Director of Field Programs Maryland Institute for Emergency Medical Services Systems
Knox Andress	Louisiana Region 7 Hospital Coordinator Louisiana Poison Center
Tim Grapes	Systems Consultant-Standards Department of Homeland Security



Presentation Outline

- Overview of Emergency Patient Tracking
- Joint Patient Assessment and Patient Tracking System
- Interactive Real Time Demonstration
- State of Tennessee
- State of Maryland
- State of Louisiana, Region 7
- Overview of Messaging Standards
- Questions and Discussion

Demonstration



Location 1:
Nashville,
TN

Location 2:
Air Base, TN

Locations 3 & 4:
Shreveport, LA
& BWI, MD

Locations 5 & 6:
LA Hospital &
MD Hospital

Tracking of Emergency Patients

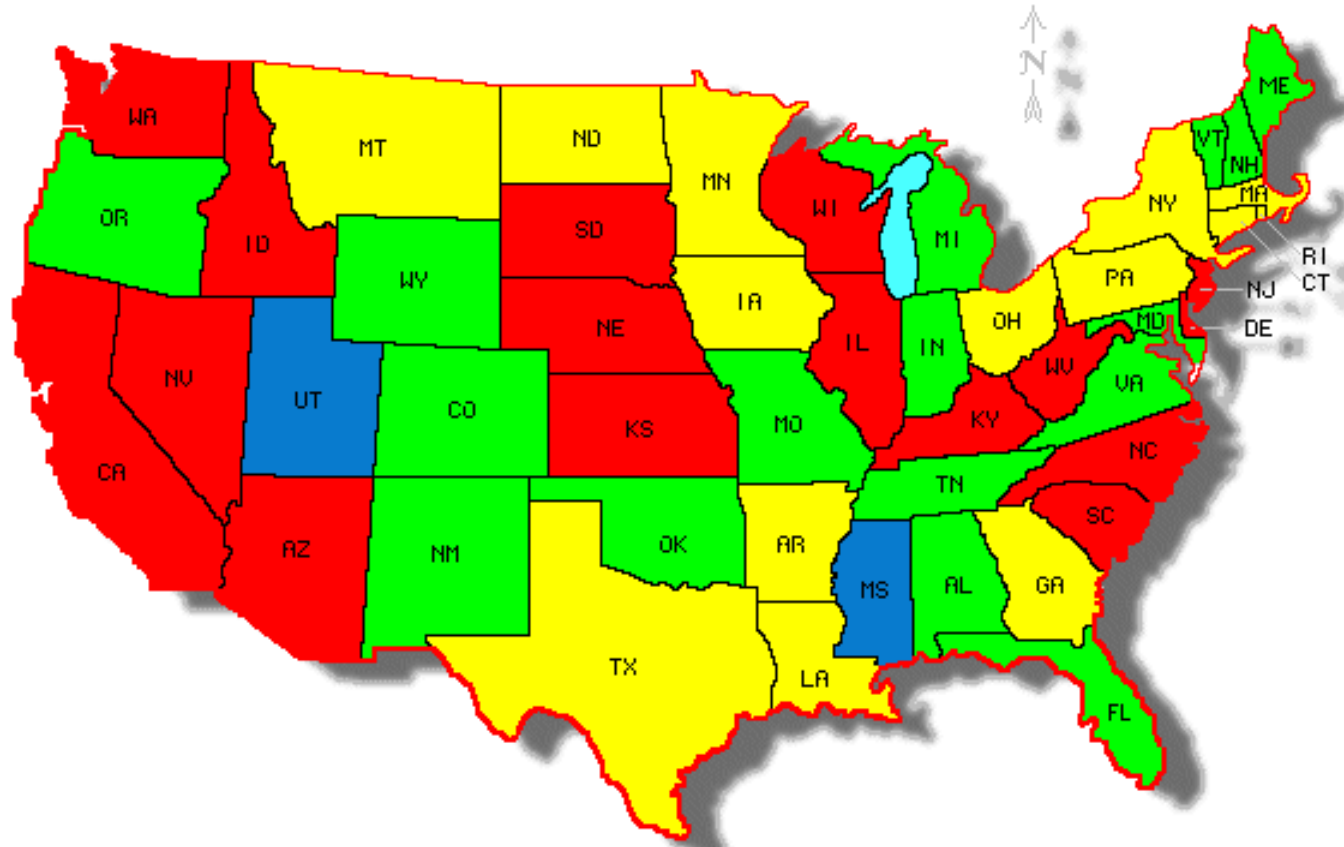
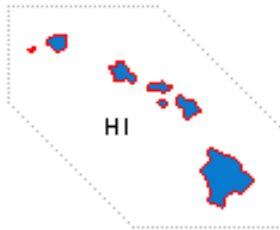


- Nationally, each state and locality needs some patient tracking capability
- Patient Tracking systems vary across the country
- Large events will likely require multiple system involvement

State Patient Tracking Capability

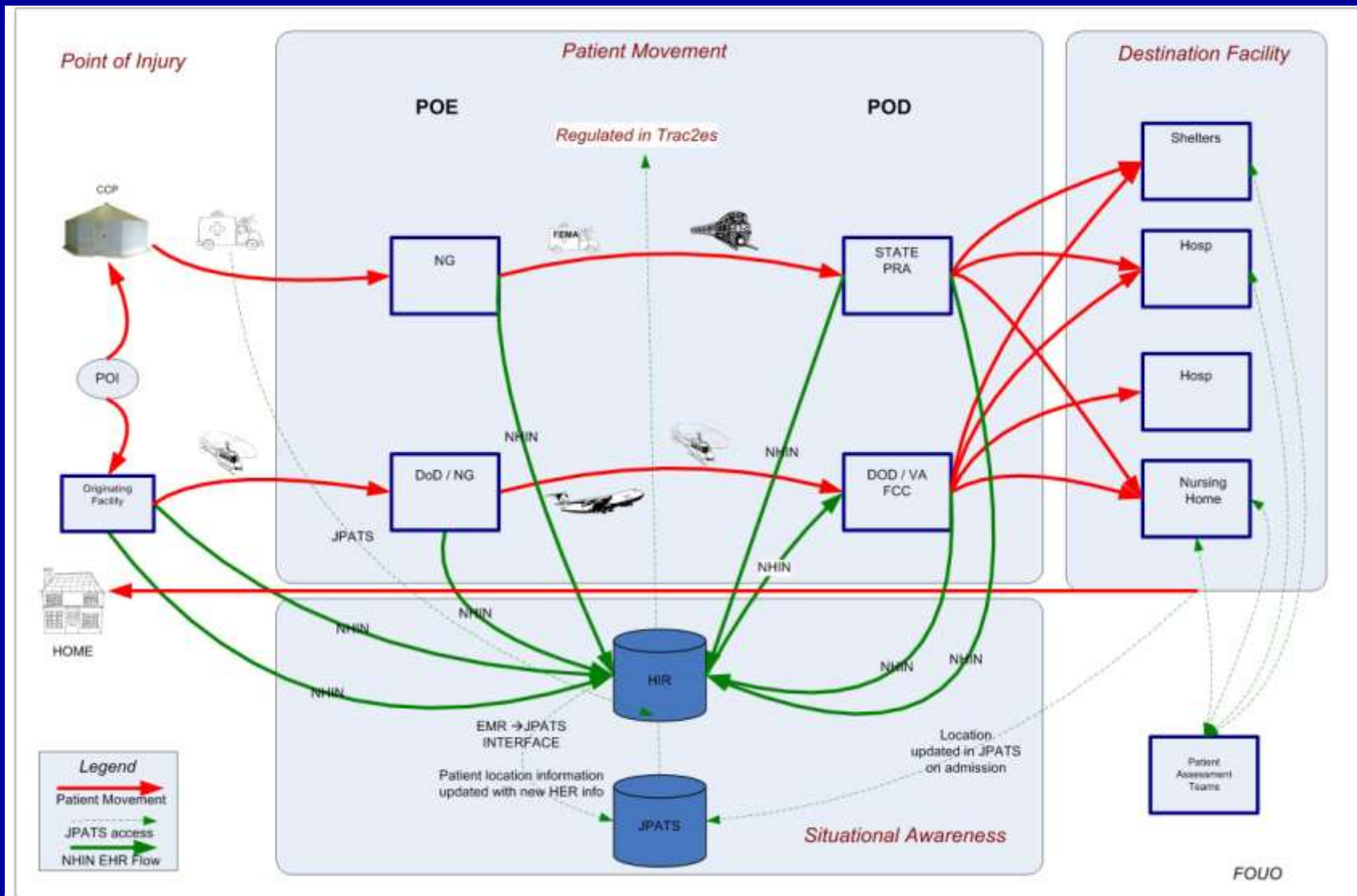


- - Commercial Solution
- - Home Grown
- - JPATS State
- - None



NOTES:
as of March 2012

Patient Tracking is easy, Its the process that is complicated!





Information Sharing Issues

- Common Operating Picture
- Multiple platforms and formats
- Timeliness of response
- Corrective actions delayed



System Interoperability

Standard Messages (content)

+ Message Transport

+ Security and Consent



Interoperability



Standard Messaging

“What data are we sending?”

- Content and Structure



Health Level Seven International (HL7)

In this discussion, we will explore the Tracking of Emergency Patients (TEP) proposed message standard to exchange data. This is planned to be published by Organization for the Advancement of Structured Information Standards (OASIS).

Message Transport



“How the message is sent”

The Direct Project – This project was added to the Nationwide Health Information Network (NwHIN) in 2010.



NDMS demonstrated using the Direct Project to exchange patient HL7 documents with Guam at HiMSS 2012.



Security and Consent

- “Does the patient consent to us sharing their data?” and
- “Is the receiving system going to protect the record?”

ONC is addressing these issues through Data Use and Reciprocal Support Agreement (DURSA)





Pre-JPATS Patient Movement

- 2004 Hurricane Katrina,
 - 4,000 medically fragile evacuees transported out of New Orleans
- 2008 Hurricane Ike/Gustav
 - 450 patients evacuated

In both cases tracking was sporadic,
we lost track of patients



- Web-Based Application
- MOA between the Defense Department and the Veterans Administration
- 'Giving' JPATS to States
 - MS was first to receive, HI received in August 2011, UT in December 2011
 - State Implementation Guide
 - Many State requests (CA, AK, IL, NV, WV, NJ)

JPATS Functionality



- Step by step registration process
- Design leverages touch screen functionality, bar code scanning, and patient photographs for identification

A screenshot of the JPATS TRAINING web application interface. The page is titled "View/Update Patient" and displays patient information for Felix Jones. The interface includes a navigation menu at the top with options like Patients, Markets, Dashboard, My Account, Reports, Maintenance, and Training. The patient details section shows a photo of Felix Jones, his name, age (25 Years), gender (Male), nationality (ROMANIA), SSN (484-81-8181), and driver's license number (A5186231451B). Below this, the "Current Medical Details" section shows health status (Priority), bed type (Medical/Surgical), patient type (Federal), and injury nature (Sprained shoulder). The "Current Location Details" section shows operation (FCC Training), originating location (Miami Children's Hospital (Miami, FL)), current location (*FCC Atlanta PRA* (Atlanta, GA)), critical care teams (No), and evacuation priority (Routine).

JPATS TRAINING

Currently Logged in as: FCC Atlanta PRA* (Atlanta, GA) for FCC Training - Change Location

View/Update Patient

Felix Jones | Male | 25 Years | 432131321321 | Brauu4422121

Patient Details | Update Patient Details

 **Felix Jones**
Age: 25 Years
Gender: Male
Nationality: ROMANIA
SSN: 484-81-8181
Drivers License Number: A5186231451B

Update Picture

Current Medical Details | Add Medical Details

Health Status: Priority
Bed Type: Medical/Surgical
Patient Type: Federal
Injury Nature: Sprained shoulder

Current Location Details | Update Location Details

Operation: FCC Training
Originating Location: Miami Children's Hospital (Miami, FL)
Current Location: *FCC Atlanta PRA* (Atlanta, GA)
Critical Care Teams: No
Evacuation Priority: Routine
Space Type: Ambulatory



Common Concerns of States

- States use a variety of Databases
- Cost of purchasing an Operating System and associated hardware
 - ❑ The implementation guide will show hardware and software costs
 - ❑ Grant funding (e.g., Hospital Preparedness Program)
- Local infrastructure and support concerns

Planned Interoperability



- Offer Federal Solution
- Use Existing Systems/Investments
- Improve Common Operating Picture





Summary

- Many PT systems across the country
- JPATS is the ESF #8 Federal patient tracking system
- Data transfer is easy! We need to make the message standard!
- Can we all share the data?



Landscape of Patient Tracking in TN



TN Use Case Scenarios – Drive Capabilities



- Evacuation

 - Katrina, Gustav

- Catastrophic Event

 - May 2010 Floods

- Large-Scale Outbreak

- Mass Casualty

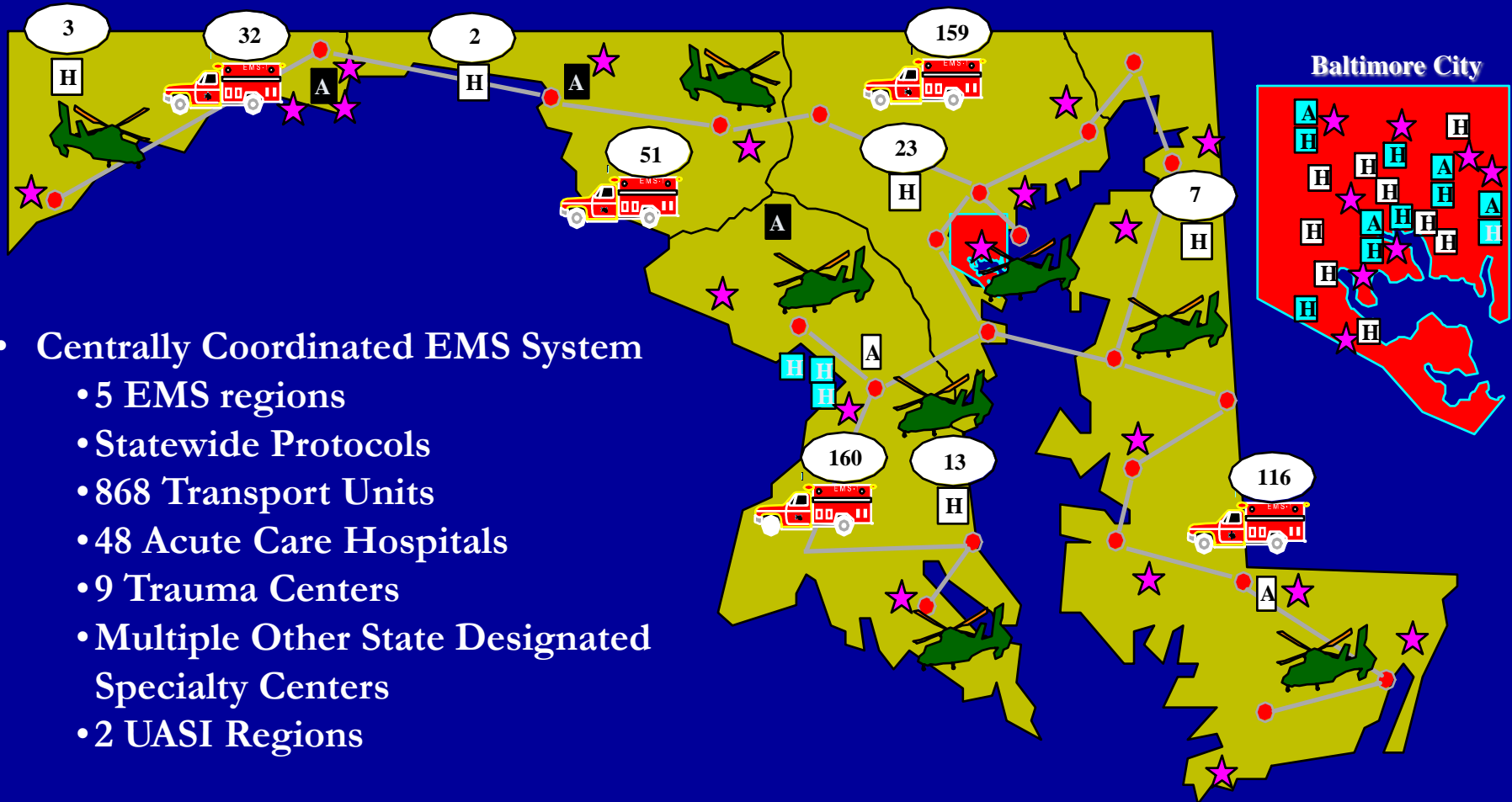


Opryland Flooding 2010





Maryland EMS System



- Centrally Coordinated EMS System
 - 5 EMS regions
 - Statewide Protocols
 - 868 Transport Units
 - 48 Acute Care Hospitals
 - 9 Trauma Centers
 - Multiple Other State Designated Specialty Centers
 - 2 UASI Regions

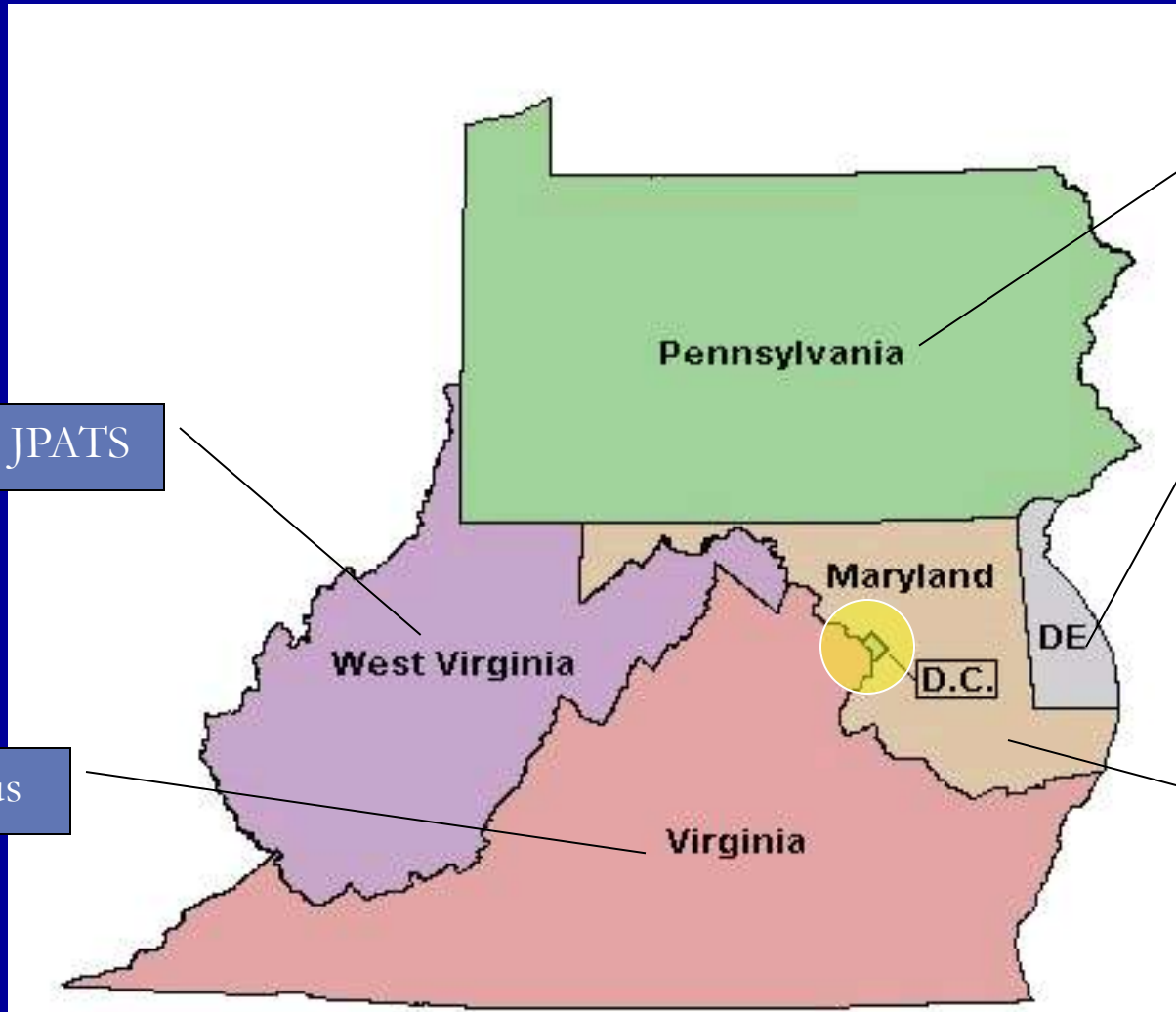
Maryland EMS System



- Statewide EMS Communication System
- System Communication / Emergency Medical Resource Center (SYSCOM/EMRC)
- Dispatch Maryland State Police Medevac
- Coordinate between EMS and Hospitals
- Repository for Patient Tracking



Maryland Neighborhood



JPATS

Various

Home Grown

None

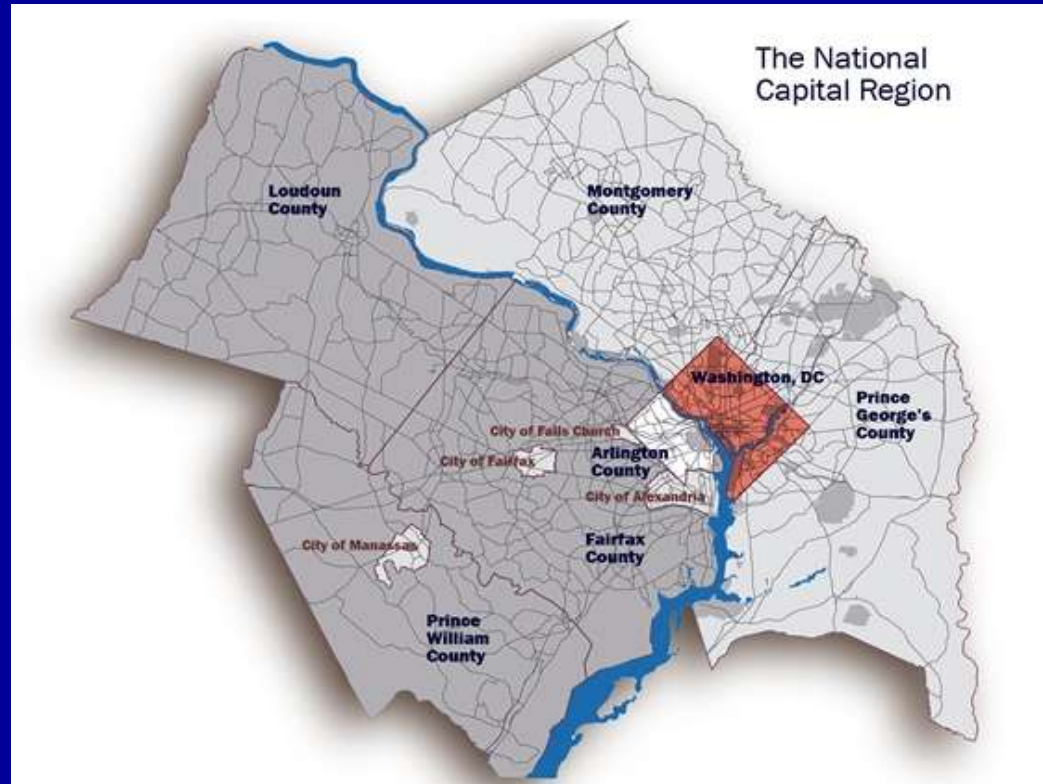
HC Standard

National Capital Region



Cooperative Project

- One Vendor
- Three Instances
- Common Workspace
- Linked to Electronic Patient Care Reports
- Interfaces with Hospitals' Systems in DC and Va



MD Health & Medical Dashboard



Active Shooter

39° 06' 29.31" N 77° 12' 00.17" W 0.01 mi

ED Psychiatric Patient Information Matrix - C

Male	2
Female	1
Total:	3

MIEMSS Hospitals Region 3 - YELLOW

OFF	20
ON	3
Undefined	1
Total:	24

Patient Information - Incident

MCMRS Exercise June 2011	542
Wash Co Hospital	161
Citizens Nursing Home Evac - Harfo	153
Wind Wizard Exercise	149
Total:	1791

HAN Messages - Message Type

Information	1
Total:	1

Web EOC

WebEOC 7.2

MIEMSS-301 as --- Select Name/Position/T Log Off

[Daily Log 2012](#)

Boards

- 2. Incident Log
- 3. Position Log
- 4. Create/View Tasks
- Incident Log Review

Patient Tracking is ONE Component



Facility Resource Emergency Database

- Alerting (pop-ups and text)
- Resource Availability
- File Sharing
- HAVBED

County and Hospital Alert Tracking System

- ED and Specialty Diversion Status
- Facility and Historical Reports of Activity

Hospital	Location	Alerts
Current Memorial Hospital	Washington County Health System-Regional Medical Center	Yellow Alert
Frederick Memorial Hospital	Washington County Health System	Alert
Albany General Hospital	Charles County Hospital Center	Alert
St. Charles General Hospital	St. Charles General Hospital	Alert
Edward McDonnell Memorial Hospital	Montgomery County Hospital	Alert
Memorial Hospital at Eastern	Montgomery County Hospital	Alert
Stevens Regional Medical Center	Stevens Regional Medical Center	Alert
Green Hospital of Cecil County	Green Hospital of Cecil County	Alert



Patient Tracking



MIEMSS TRIAGE TAG DO NOT REMOVE

PATIENT INFORMATION

MALE FEMALE AGE WEIGHT PATIENT NUMBER

NAME: _____ # 3 0 0 6 9 3 #

ADDRESS: _____

CITY: _____ ST: _____ PHONE: _____

TRIAJE STATUS

EVALUATION	TIME	RED	YELLOW	GREEN	BLACK
INITIAL		IMMEDIATE	DELAYED	MINOR	DECEASED
SECONDARY		IMMEDIATE	DELAYED	MINOR	DECEASED
HOSPITAL		IMMEDIATE	DELAYED	MINOR	DECEASED

CHIEF COMPLAINT

Head Injury C-Spine
Blunt Trauma
Penetrating Injury
Burn Fracture
Laceration Amputation

Medical
Cardiac Respiratory
Diabetic OB/GYN
Haz-Mat Exposure

COMMENTS: _____

TRANSPORTATION AGENCY/UNIT DESTINATION TIME ARRIVED

TREATMENT # 3 0 0 6 9 3 #	HOSPITAL # 3 0 0 6 9 3 #
OTHER # 3 0 0 6 9 3 #	OTHER # 3 0 0 6 9 3 #
OTHER # 3 0 0 6 9 3 #	OTHER # 3 0 0 6 9 3 #
OTHER # 3 0 0 6 9 3 #	OTHER # 3 0 0 6 9 3 #

TRANSPORT RECORD

MALE FEMALE AGE PATIENT NUMBER

NAME: _____ # 3 0 0 6 9 3 #

CHIEF COMPLAINT: _____

DESTINATION: _____ HOSPITAL: _____

TRANSPORTATION AGENCY/UNIT TIME OUT TRIAJE STATUS

RED YELLOW GREEN

Funded by Urban Area Security Initiative and some Hospital Preparedness Program Funds



Hand-Held Input Screens

Patient Tracking

Status
Connected
 Successfully logged in

User: joel
 Last Sync: Synchronizing...
 Patient Items on Device: 0
 Mem: 0% Used Battery: 100%

Incident
 Position: Triage
 Division: Alpha
 Floor/Number/Unit:

Triage Patients

Tuesday, January 19, 2010 2:07 PM

Patient ID

Type or scan the patient identification number:

Scan by pressing any of the large yellow buttons

39978623046862N

Immediate

Delayed

Minor

Deceased

< Previous New... Next >

GoTo Menu

39978623046862N

Head Injury C-Spine
 Blunt Trauma
 Penetrating Injury
 Burn Fracture
 Laceration Amputation
 Cardiac Respiratory
 Diabetic OB/GYN
 HAZMAT Exposure

Medical:
 Comments: Bridge Collapse Crushing Injuries

< Previous New... Next >

GoTo Menu

39978623046862N

Clear

< Previous New... Next >

GoTo Menu

View Photo 2 of 2

< Previous Delete Next >

Done

MD 43996884 - Inform

Gender: Male
 Age: years
 Weight: lbs
 First Name:
 Last Name:
 Address:
 City:
 State: Zip:
 Phone:

< > New Done

GoTo Menu

123412341234 - T

Destination:
 Jurisdiction:
 Unit:
 Departure Time: Click Here To Set Datetime Now
 Arrival Time: Click Here To Set Datetime Now

< Previous New... Next >

GoTo Menu

Mapping Function



Maryland Institute for Emergency Medical Services Systems

Baltimore Grand Prix 2011

Maps x

Race Triage Locations

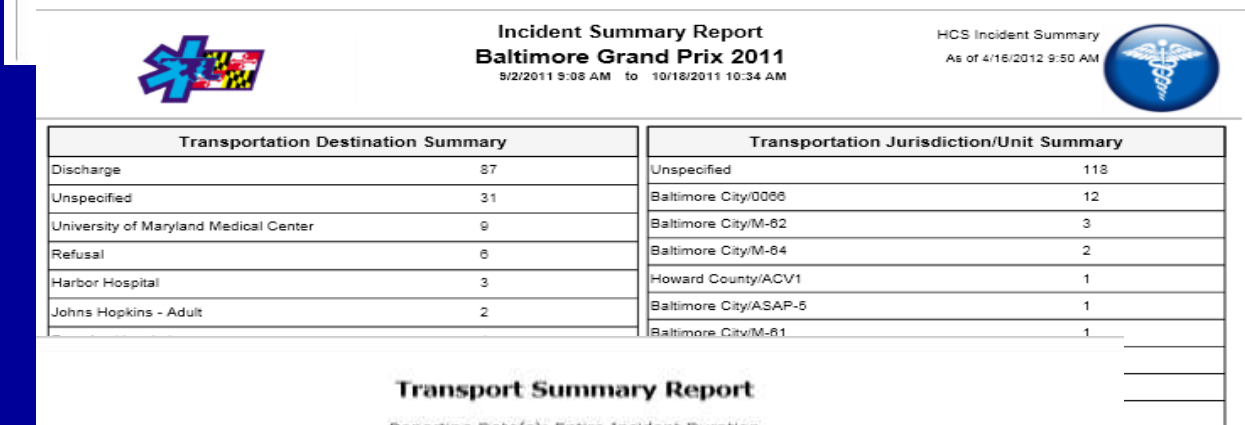
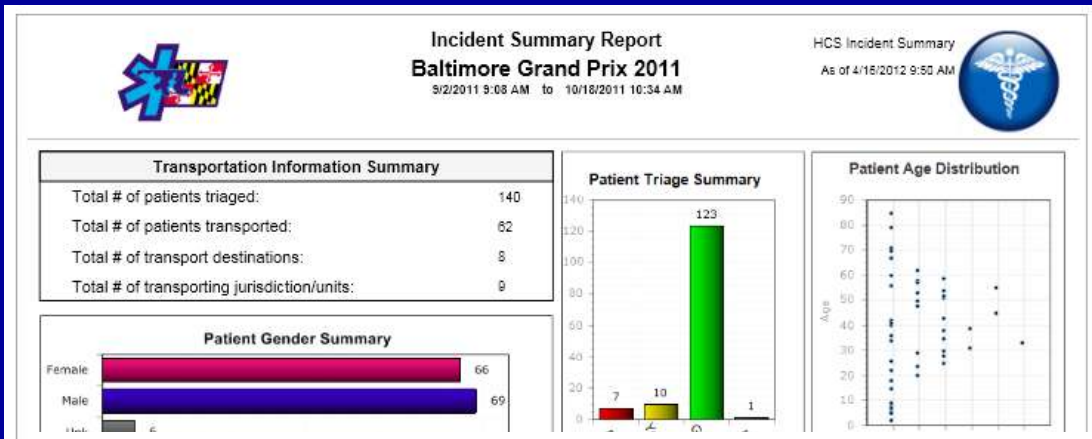
Triage Locations - Day 2

Triage Locations - Day 3

As of Monday, April 16, 2012 9:47:20 AM



Dynamic Charts and Reports

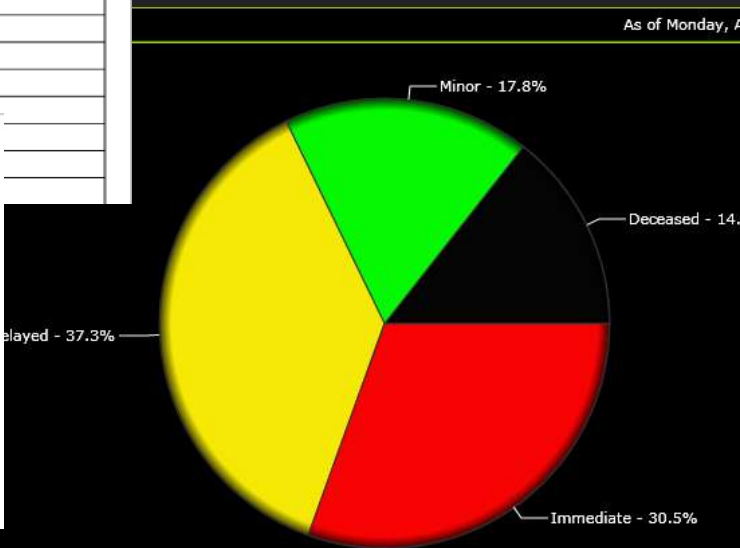


Transport Summary Report

Reporting Date(s): Entire Incident Duration
For Incident(s): Baltimore FCC NDMS TTX 3/25

Baltimore FCC NDMS TTX 3/25

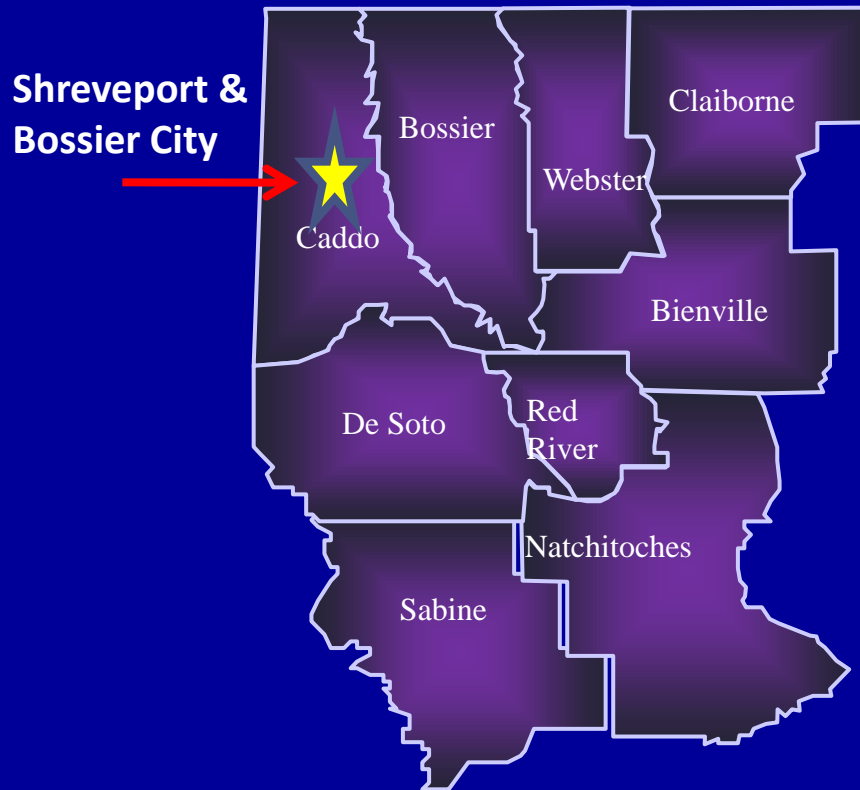
Destination Hospital	Transports				Total
	Red	Yellow	Green	Black	
Baltimore Washington Medical	0	0	0	1	1
Baltimore Washington Medical	5	1	1	0	7
Bon Secours Hospital	0	2	0	0	2
Good Samaritan Hospital	0	1	0	0	1
Howard County General Hospital	2	2	2	0	6
Total	7	6	3	1	17





Louisiana Region 7

26 Hospitals in 9 Parishes



- Parishes: 9 in NW Louisiana
- Bordered by *Texas* (West) and *Arkansas* (North)
- Regional Pop: 544,249 (Census 2010)

Current Louisiana Region 7 Tracking Apps

○ Patient Tracking Systems

- *Caddo Parish and Bossier Parish*
(funded via Shreveport MMRS via the Caddo-Bossier
Office of Homeland Security and Emergency
Preparedness)

- *Parishes of Bienville; Claiborne; De Soto; Natchitoches;
Red River; Sabine; Webster;*
(funded via HHS/ASPR/HPP)

○ ***"At-Risk-Registry"***

- Louisiana Department of Health and Hospitals

Louisiana Region 7 Tracking Partners

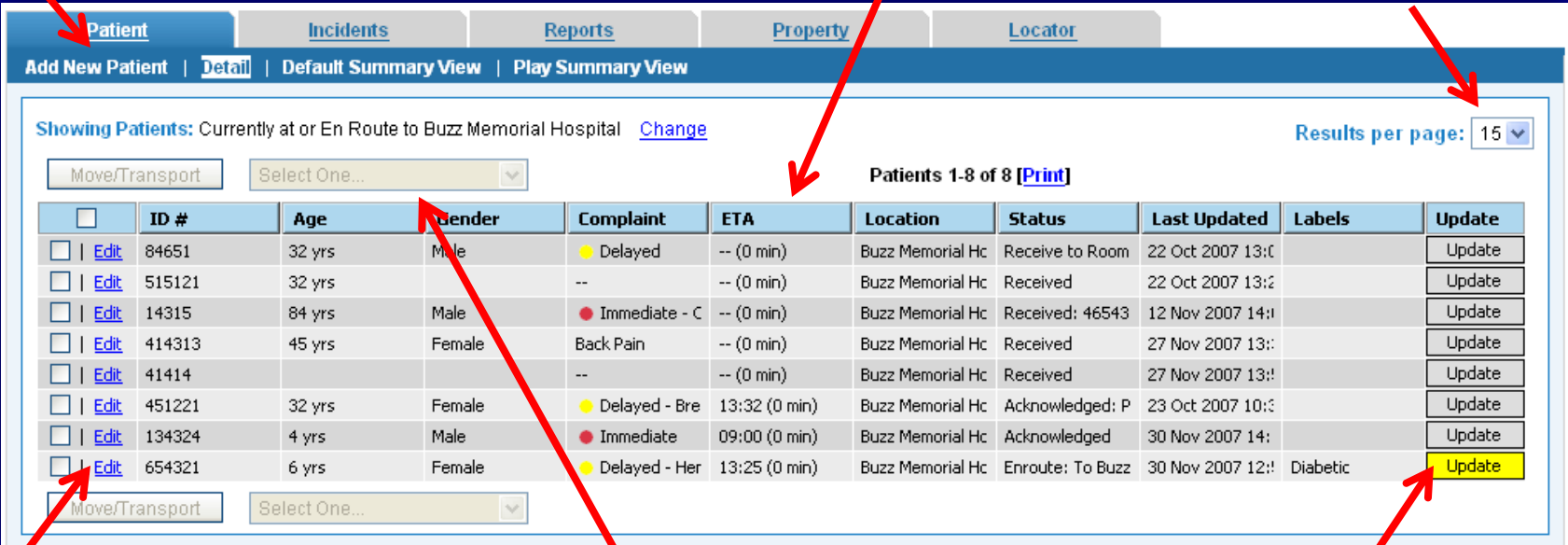
- Caddo Parish – Bossier Parish, Office of Homeland Security and Emergency Preparedness
- Shreveport Fire Department
 - EMS
 - Communications
- Bossier City Fire Department
 - EMS
 - Communications
- Louisiana Region 7 Hospitals (Tier 1 and Tier 2)

Software Overview:

Add self-presenting patient

Click on column heading to sort

Number of patients to show per page



The screenshot shows a web-based patient management interface. At the top, there are navigation tabs: Patient, Incidents, Reports, Property, and Locator. Below these are links for 'Add New Patient', 'Detail', 'Default Summary View', and 'Play Summary View'. The main content area displays a list of patients with the following columns: ID #, Age, Gender, Complaint, ETA, Location, Status, Last Updated, Labels, and Update. The 'Update' column contains buttons for each patient, with the last one highlighted in yellow. A 'Results per page' dropdown is set to 15. There are also 'Move/Transport' buttons and a 'Select One...' dropdown menu.

ID #	Age	Gender	Complaint	ETA	Location	Status	Last Updated	Labels	Update
84651	32 yrs	Male	Delayed	-- (0 min)	Buzz Memorial Hc	Receive to Room	22 Oct 2007 13:0		Update
515121	32 yrs		--	-- (0 min)	Buzz Memorial Hc	Received	22 Oct 2007 13:2		Update
14315	84 yrs	Male	Immediate - C	-- (0 min)	Buzz Memorial Hc	Received: 46543	12 Nov 2007 14:1		Update
414313	45 yrs	Female	Back Pain	-- (0 min)	Buzz Memorial Hc	Received	27 Nov 2007 13:0		Update
41414			--	-- (0 min)	Buzz Memorial Hc	Received	27 Nov 2007 13:0		Update
451221	32 yrs	Female	Delayed - Bre	13:32 (0 min)	Buzz Memorial Hc	Acknowledged: P	23 Oct 2007 10:0		Update
134324	4 yrs	Male	Immediate	09:00 (0 min)	Buzz Memorial Hc	Acknowledged	30 Nov 2007 14:0		Update
654321	6 yrs	Female	Delayed - Her	13:25 (0 min)	Buzz Memorial Hc	Enroute: To Buzz	30 Nov 2007 12:0	Diabetic	Update

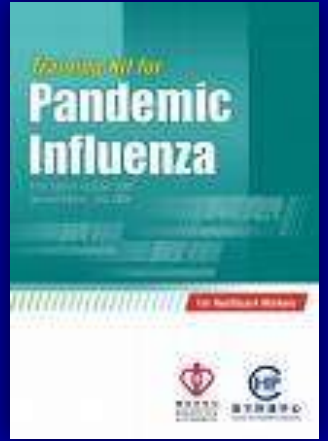
Edit demographics, treatment, history, etc

Add labels, remove patients, run reports, etc

Acknowledge, receive, or discharge patients

Use Cases Drive Capabilities

- Public Health
 - Pandemic Influenza
 - Mass Prophylaxis
- Large Gatherings
 - Sporting Events
 - Regional Festivities
- Emergency Management
 - Mass Casualty Incidents
 - HazMat Victim Tracking
 - Evacuee Tracking
- Everyday use



Region 7 Use Cases

□ **Prehospital-to-hospital**

- Hurricane sheltering
 - Hurricane "Gustav" (2008)
 - Hurricane "Ike"(2008)
- MCI exercises –
 - "Airport MCI FSEs" (2006 – 2011)
 - "NLE NDMS" (2010 & 2011)
 - "Triage Tuesdays" (2011 - 2012)
- Community events/mass gatherings –
 - Barksdale Air Force Base - Air Shows (2011 & 2012)
- Pandemic/H1N1
 - "ILI" symptom hospital surveillance (2009)

□ **Hospital-to-hospital**

- Hospital evacuation
 - Willis-Knighton Extended Care Center - Patient Evacuation (2011)



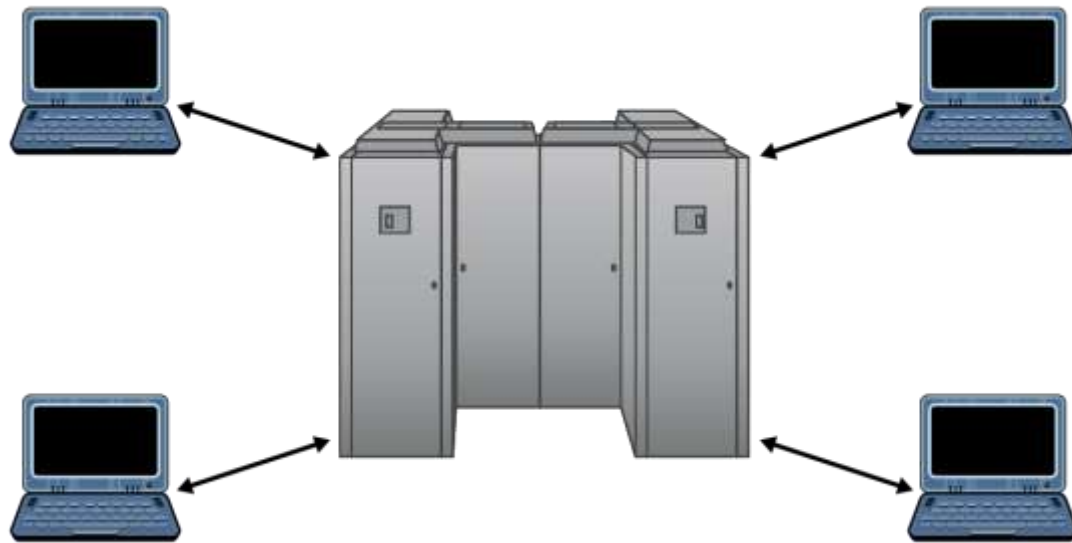
The Information-Sharing Challenge

- Ineffective Communication Risks Lives
- There is No Silver Bullet
- 60,000 Public Safety Agencies in the US
- Different Procurement, Budget, and Asset Lifecycles



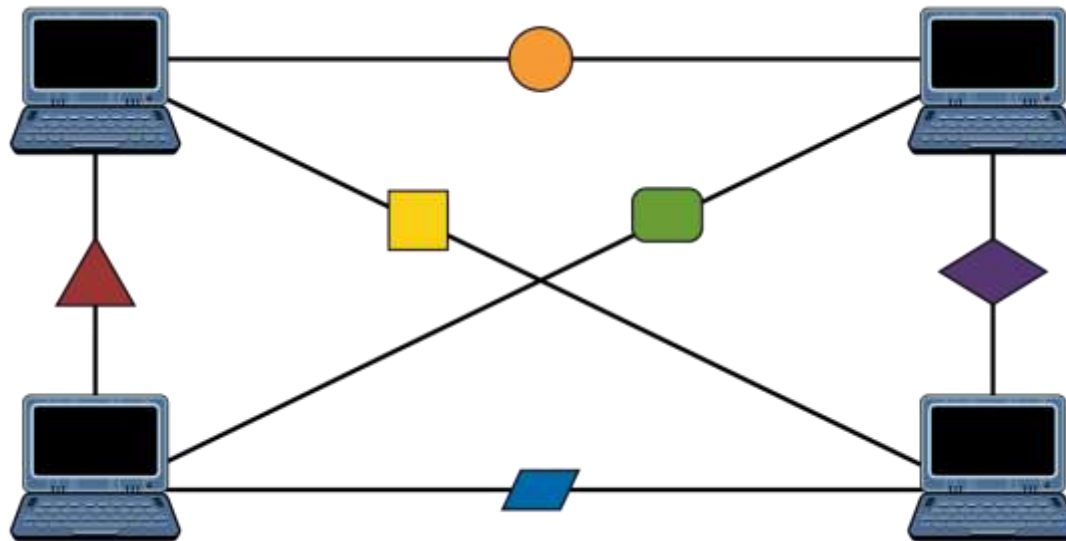
Interoperability Approach: Single System

- A single system cannot meet all needs



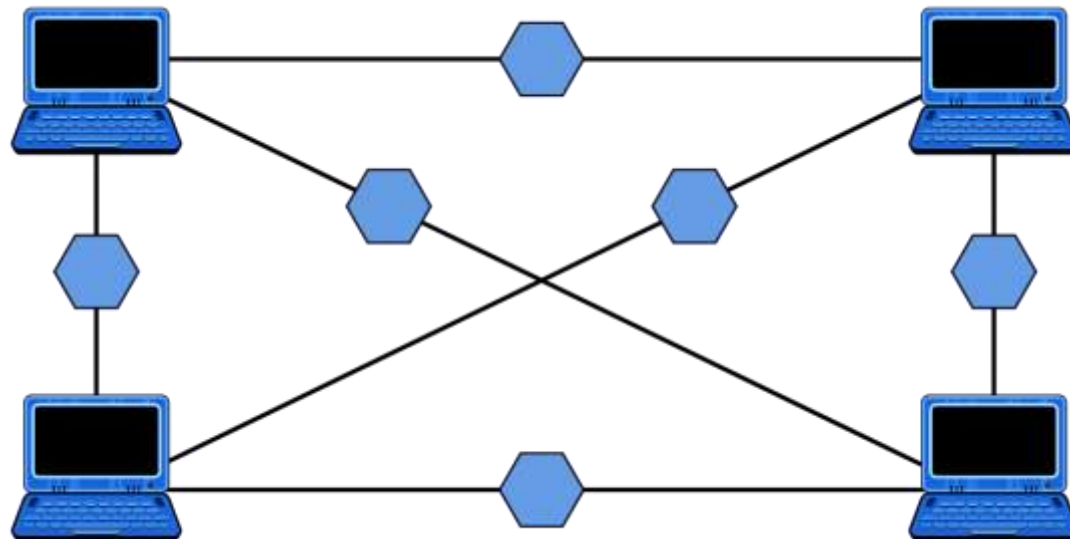
Interoperability Approach: Custom Interface

- Cost prohibitive to build custom interfaces between every system



Interoperability Approach: Interoperability Through Standards

- **One common interface for different systems to share Patient information**



What is the Tracking of Emergency Patients (TEP) Standard?

An Open, Public Standard for Data Exchange

- ❑ One of the Emergency Data Exchange Language suite of exchange standards
- ❑ Healthcare Practitioner-Driven: federal, state, local
- ❑ Co-sponsored publication – OASIS and HL7
- ❑ HHS may offer incentives for implementation

Purpose of TEP

- ❑ Tracks Patient Movement and Status
- ❑ Supports Hospital Evacuations
- ❑ Provides Common Operating Picture
- ❑ Facilitates Collaboration and Coordination

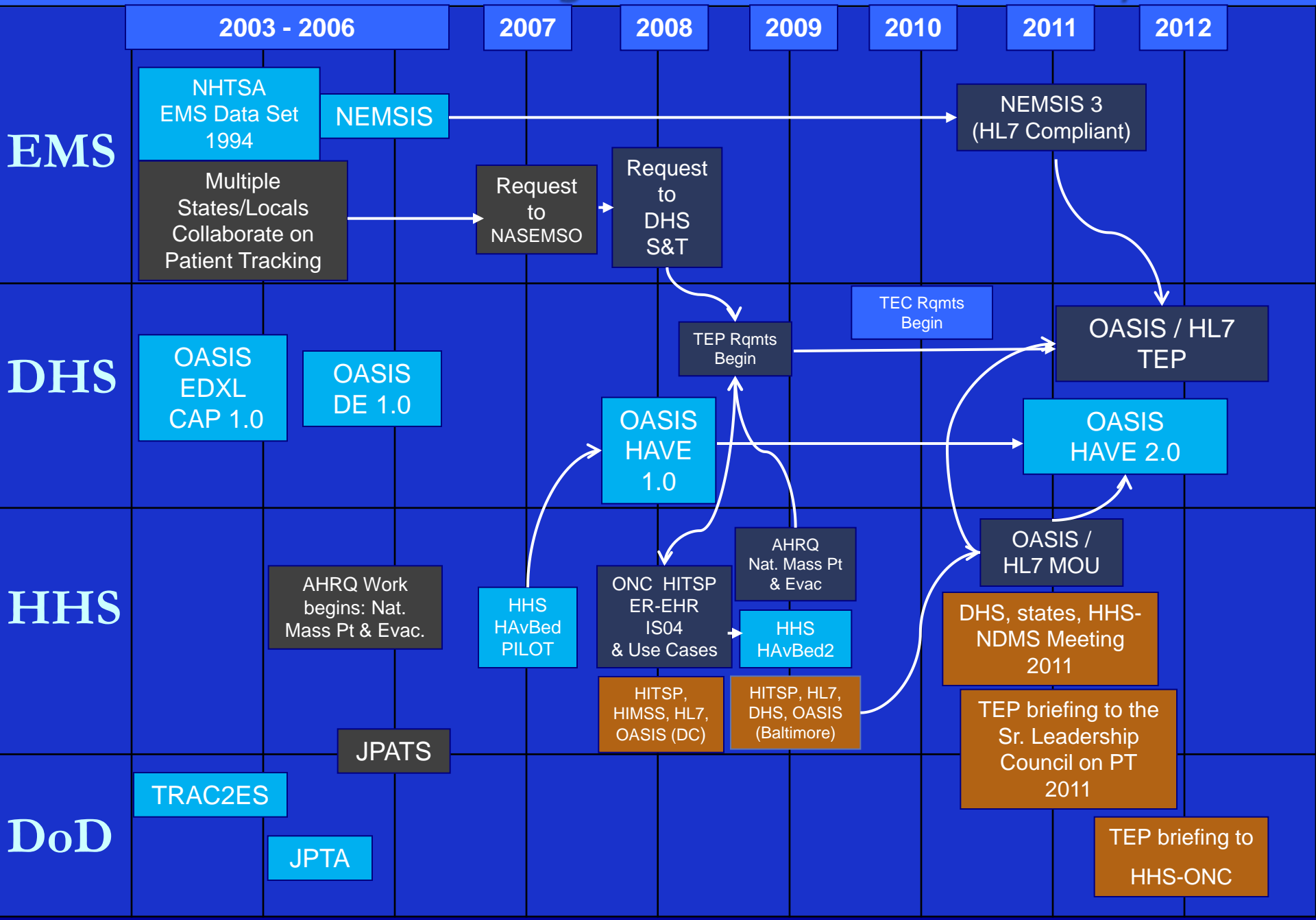


Benefits of TEP

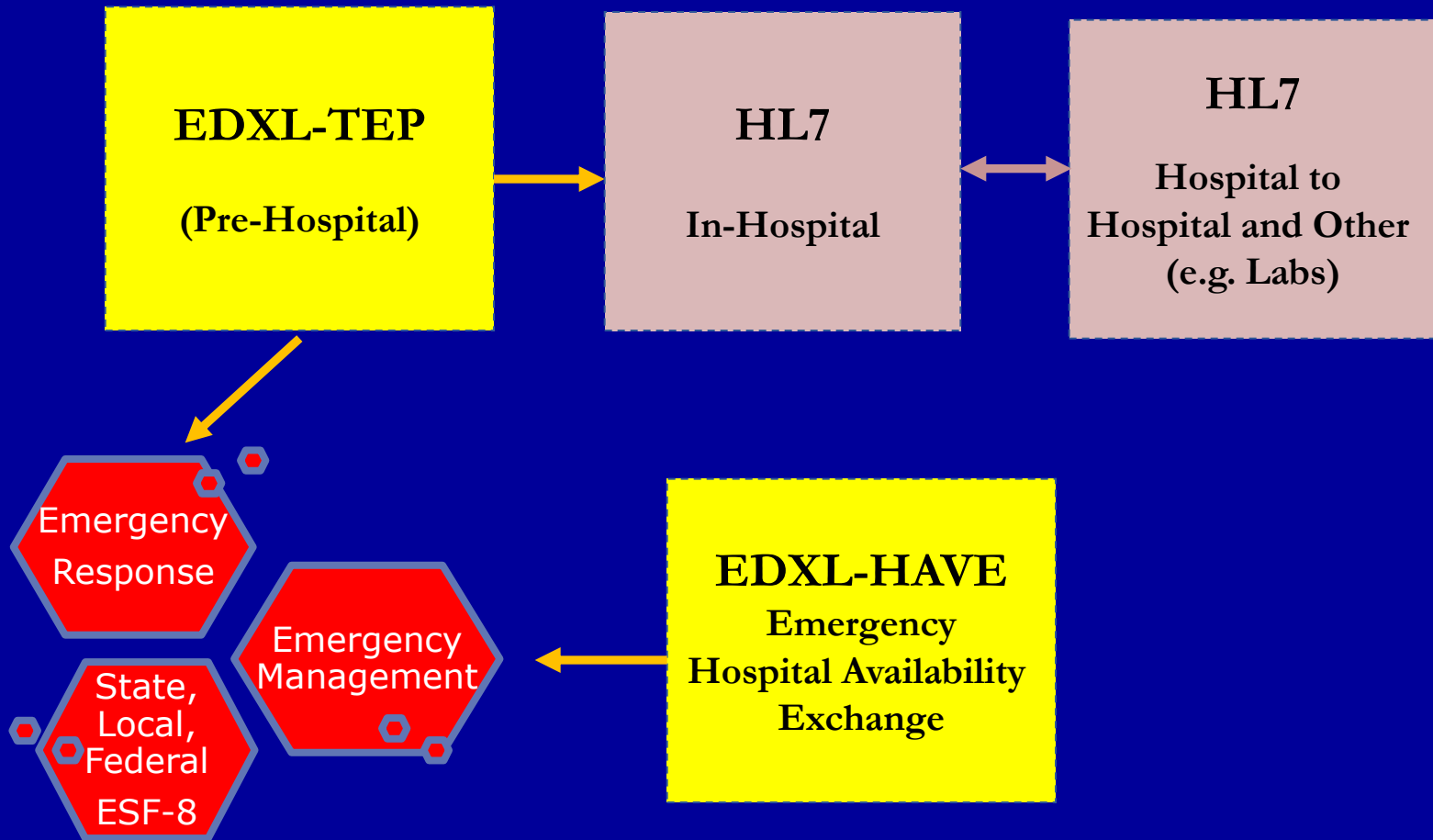
- Low-cost approach - Build once – reuse over and over again
- Leverage and enhance your current system and infrastructure
- Scalable from local to the national level as needed



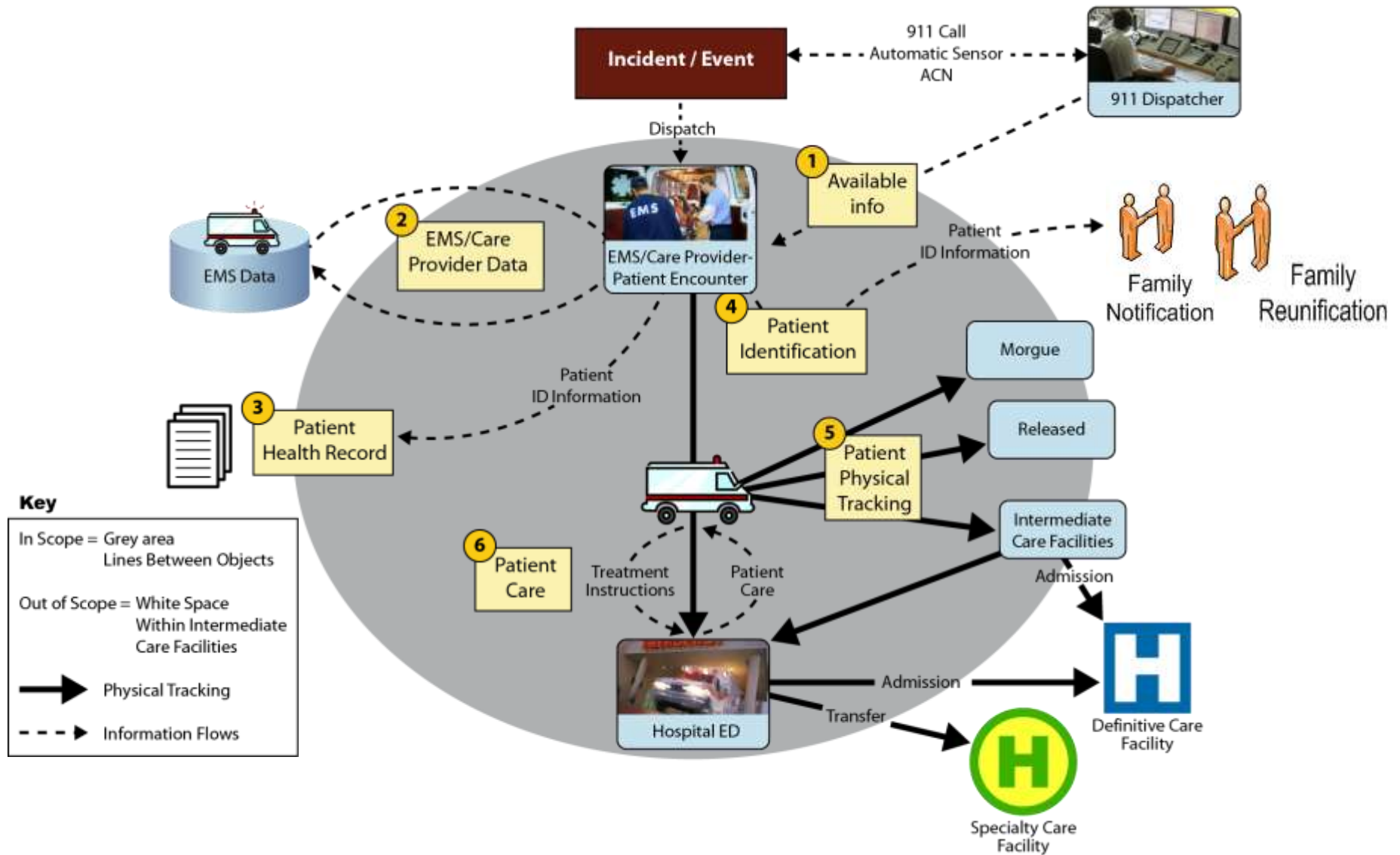
Patient Tracking Collaboration History



TEP Context - Continuum of Patient Movement



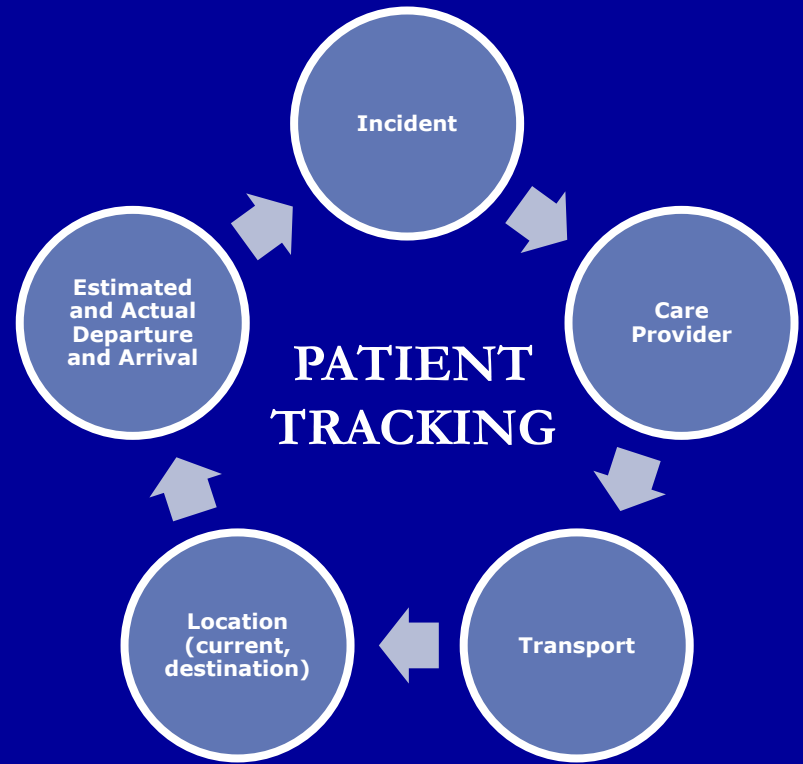
Tracking of Emergency Patients Scope



AHRQ & TEP

Standard Core Elements

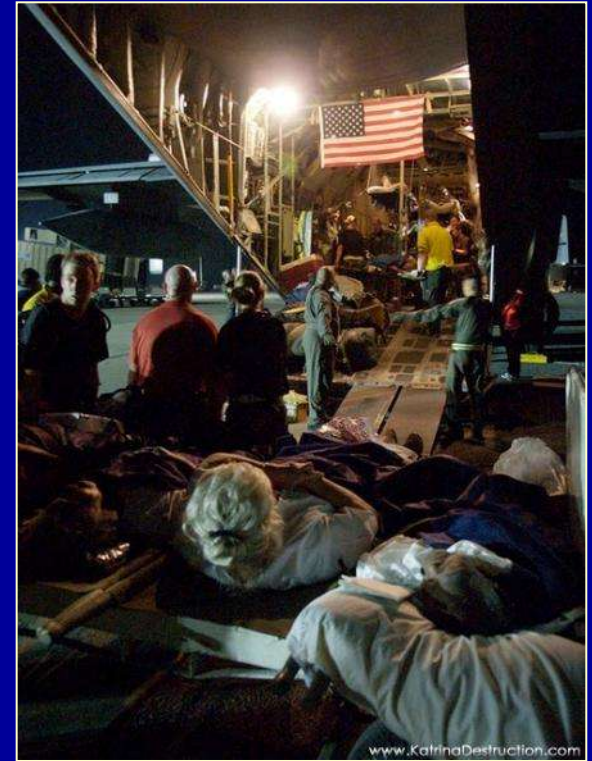
PATIENT INFO
Patient unique Identifier
Gender
Age / DOB
Name
Evacuation Status
Special Transportation Needs
Special Medical Needs
Security / Supervision Needs
Special Communication Needs
Family Unification Code



PATIENT CONDITION
Current Disposition
Contam. / Rad. / Contag.
Chief Complaint
(Vitals e.g. pulse rate)

TEP Implementation

- ❑ Does Not address all data exchange components
 - Not a message routing solution
 - Can be used over different “transport” mechanisms
- ❑ One Interface – Map TEP to your Data
- ❑ Must Implement Security
- ❑ TEST with your partners
- ❑ Implementation Guide and day to day use





What's Next?

- Continue to Address Interoperability
 - ▢ Define Transport, Message and Security

- Publish National Patient Tracking Standards
 - ▢ Continued OASIS and HL7 Collaboration

- Publish Implementation Guides

- Support States in Development of Patient Tracking Systems

- Conduct Large-Scale Tests
 - ▢ Standard, Transport, and Implementation

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