

The background of the slide is a composite image. The upper portion features a light blue world map with white landmasses. The lower portion shows a dense city skyline, likely New York City, with numerous skyscrapers and buildings in shades of brown, grey, and blue, set against a clear sky.

# **National Commission on Forensic Science Meeting**

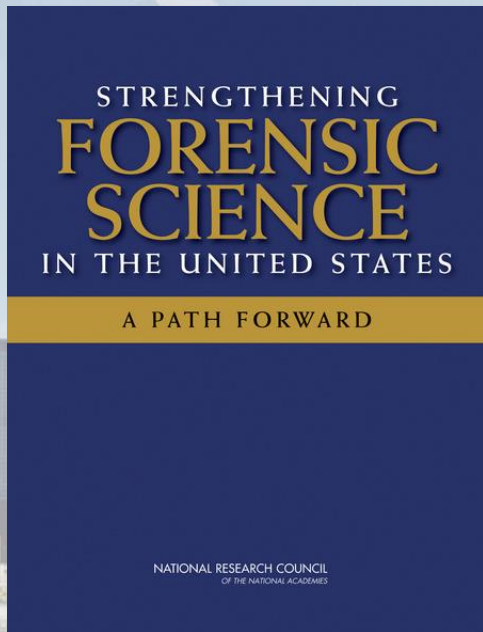
## **The Role of Forensic Science in Mass Fatality Management**

**Frank DePaolo, PA-C**

Assistant Commissioner of Forensic Operations  
NYC Office of Chief Medical Examiner



# National Academy of Sciences Report (2009)

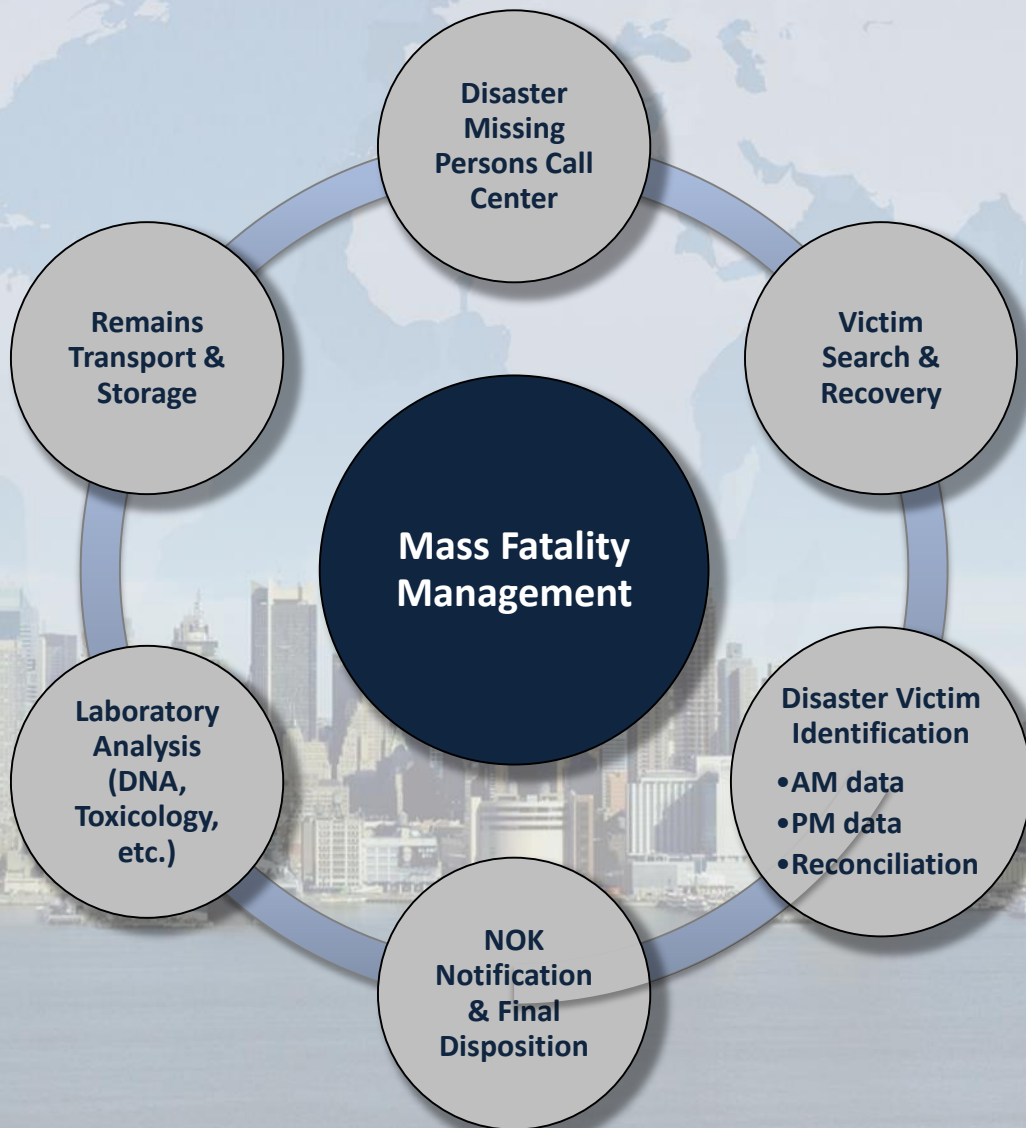


**“In its charge to the committee, Congress raised the question of the role of forensic science in homeland security.” (p 279)**

**“Homeland security and disaster response would be well served by universal improvement in ME/C office to manage mass fatality events such as the multistate Hurricane Katrina tragedy and the World Trade Center attacks...” (p 260)**

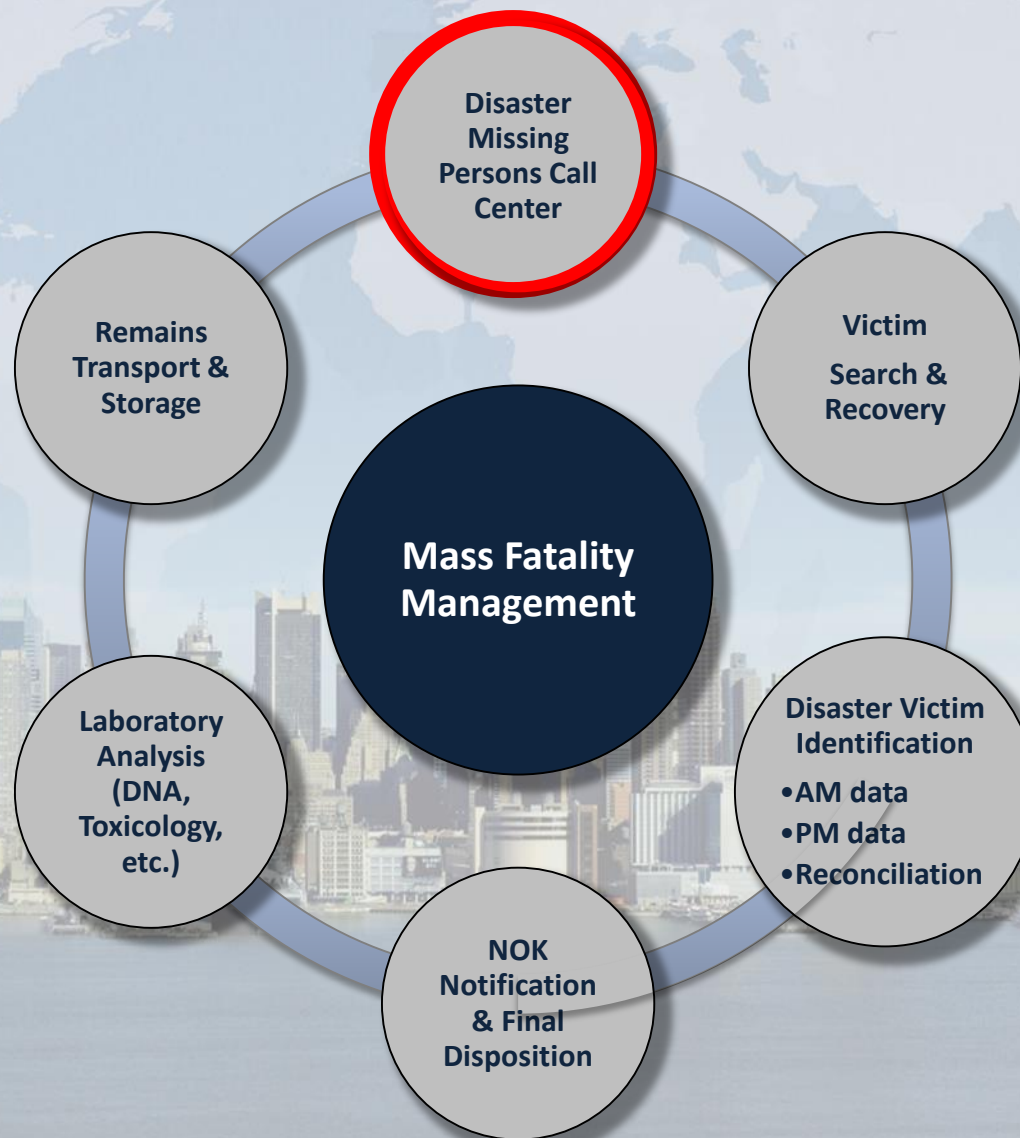


# Mass Fatality Management





# Mass Fatality Management





# Mass Fatality Incidents in the U.S. (2000-Present)

**97** U.S. Mass Fatality Incidents\*  
**7,887** Deaths

## Top 4 Mass Fatality Incident Types

1. Tornado 23 Incidents  
(45 deaths per incident)
2. Aviation 16 Incidents  
(38 deaths per incident)
3. Hurricane 12 Incidents  
(206 deaths per incident)
4. Mass Shootings 10 incidents  
(15 deaths per incident)

## Open Population Incidents

- 85% (82) open population
- 15% (15) closed population

## Top 4 Mass Fatality Incidents (# Fatalities):

1. Attack on the World Trade Center (2,753)
2. Hurricane Katrina (1,836)
3. April 2011 Tornado Outbreak (344)
4. American Airlines Flight 587 Aviation Accident (265)



# Who Are The Victims?

## Closed Population



Flight 587

- Decedent list known
- More rapid acquisition of AM data
- Morphoscopic ID methods primary
- Minimal DNA required / corroborative role
- Re-association not required

## Open Population



WTC

- Reported/actual missing
- Increased reliance on DNA IDs
- Lesser role for morphoscopic IDs
- ID all fragments vs. all victims
- Re-association required
- Group remains management

— → COMPLEXITY → +



# Disaster Victim Identification (DVI)

## ANTEMORTEM DATA

**Unified Victim Identification System**  
Jules Stath is suggested as the Incident Manager Supervisor

Report for Incident: MA06 MTA Bus Explosion Report Date/Time: 4/28/2006 4:32 PM

3/17/2006 9:43 AM Please select all columns to copy away from the screen

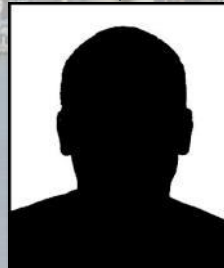
Reporter's Information		Reported Missing Person's Information	
<b>Reporter:</b> General Info: REPORT NO: (New report) Last Name: [Text] First Name: [Text] Middle Name: [Text] Address: [Text] City: [Text] State: [Text] Zip: [Text] Phone: (Cell) (000-000-0000) and (224) E-Mail: [Text]		<b>Reported Missing:</b> 1 Add Additional (N) General Info: REPORT NO: (New report) Last Name: [Text] First Name: [Text] Middle Name: [Text] Address: [Text] City: [Text] State: [Text] Zip: [Text] Date of Birth: [Text] Age: [Text] Sex: [Text] Probable Occupation: [Text] State: [Text]	
<b>Additional Contact Info:</b> Contact: [Text] Address: [Text] E-Mail: [Text]		<b>Additional Contact Info:</b> Contact: [Text] Address: [Text] E-Mail: [Text]	

### Data Input: Call Center and FAC

- Interviews
- Photos
- X rays
- Dental
- Fingerprints
- DNA
- Contextual Information

## RECONCILIATION

Postmortem Data  
Antemortem Data  
Comparisons  
Laboratory Analysis



## POSTMORTEM DATA

**Unified Victim Identification System**  
Jules Stath is suggested as the Incident Manager Supervisor

Pathology - Autopsy Examination Incident: UV01

Specimen No: MA07-0000001  
Medical Examiner: Charles Hirsch Select One

Date: 3/27/2007 Time: 7:25:25 AM Add History

Developmental/Anatomical:

General Appearance:

Weight: [Text] lb [Text] oz

Height: [Text] ft [Text] in

Approx Age: [Text]

Skin Color: [Text]

Sex: [Text]

Race: [Text]

Eyes: [Text]

Hair: [Text]

Build: [Text]

Facial Features: [Text]

Postmortem changes: [Text]

Head:

Head Hair: [Text]

Facial Hair: [Text]

### Data input: Scene and Morgue

- PM Exam
- Photos
- X Rays
- Dental
- Fingerprints
- DNA
- Contextual Information



# DVI Process

## ANTEMORTEM OPERATIONS

Disaster Missing Persons Call  
Center Reports

Investigate Missing Persons  
Reports & Develop Manifest

Conduct Targeted  
Antemortem Interviews

Acquire/Analyze Ante Mortem  
Data

## POSTMORTEM OPERATIONS

Recover Remains/Personal Effects

Conduct Post Mortem  
Examinations

Submit Fingerprints, DNA

Acquire/Analyze Other Post  
Mortem Data (Dental)

Reconciliation Information

Establish Forensic Identification



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# Why is a Disaster Missing Persons Call Center Necessary?





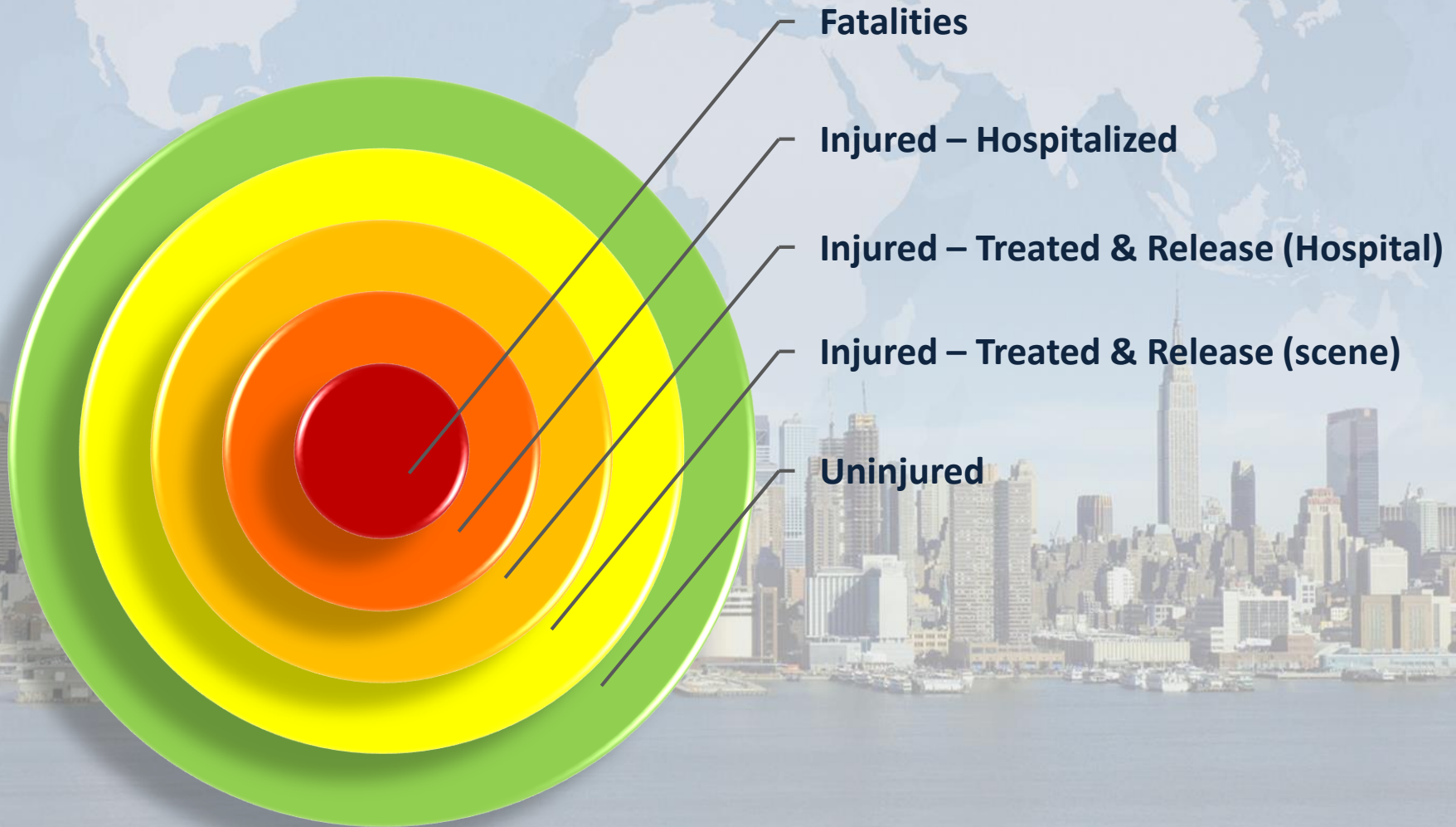
# Disaster Missing Persons Call Center

- A centralized, structured process for collecting disaster missing persons reports and communicating with the public
- To decompress 911 system volume
- To enable investigative efficiencies:
  - Automated data comparisons
  - Call grading schema
- To enable the efficient gathering of antemortem data for use in disaster victim forensic identifications





# An Exercise in Identification





# Efficient Antemortem Data Workflow





# Efficient Antemortem Data Workflow





# Primary Factors Influencing Antemortem Data Collection

- **Accurate** Victim Manifest
- Population impacted:
  - Open vs. Closed
  - Local vs. International
  - Language barriers
  - Religious considerations
  - Socioeconomic considerations
- AM Availability/Accuracy
- Interview Data Reliability

NAME *M* 2426872 NO. 16646 5 17 W M II MALE  
DISNEY Walter E STATE BOARD OF EQUALIZATION  
LOS ANGELES, CALIFORNIA 5 10

RIGHT				
LEFT				

Brown Eyes Brown Hgt. 5'10" Wgt. 155 Age. 35 Occ. Partner Race W

Date printed: 1-22-37

Marks and scars: Scar over left eye

For identification purposes in connection with application for Alcoholic Beverage License.

Signature *Walter E. Disney*

LEFT RIGHT



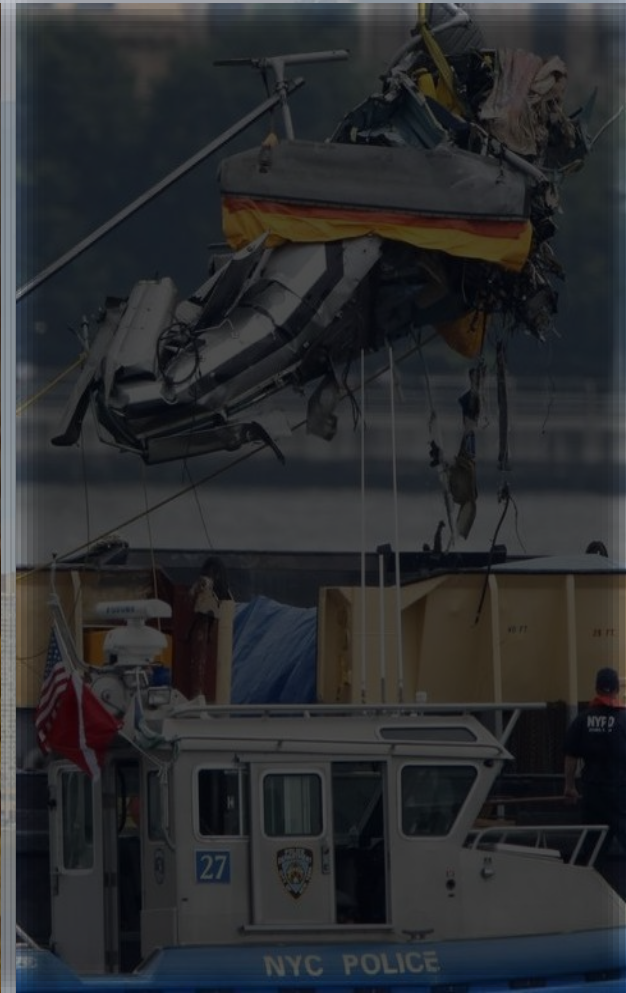
# Incident Considerations



**World Trade Center Attacks**  
**9/11/2001**



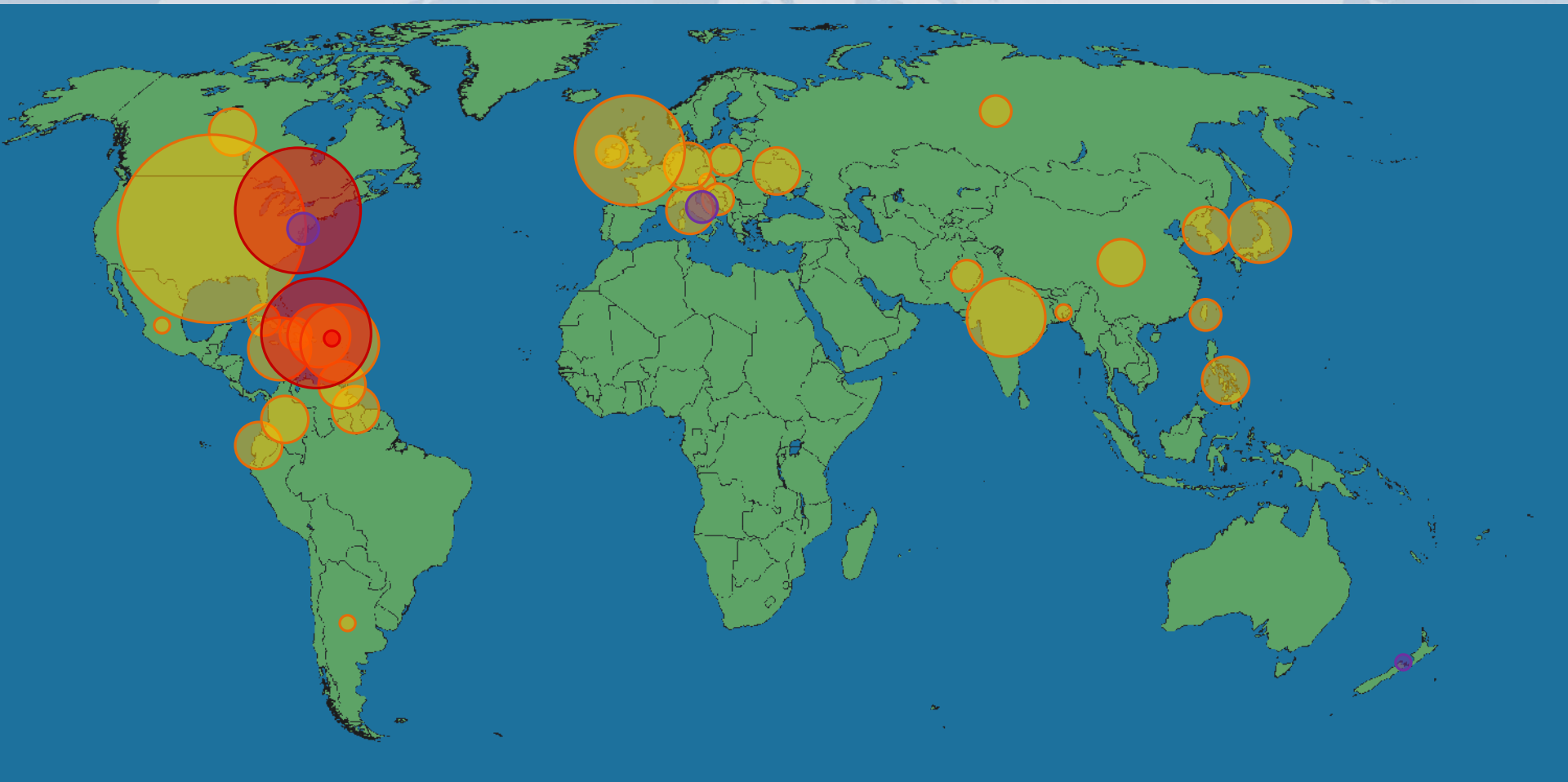
**American Airlines Flight 587**  
**11/12/2001**



**Hudson River Mid-Air Collision**  
**8/8/2009**



# Victim Distribution



World Trade Center

Flight 587

Mid-Air Collision



# Disaster Missing Persons Call Centers



## UK Casualty Bureau:

- Has maintained a robust national disaster missing persons call center capability since World War II
- Police based system
- **July 7, 2005:**
  - 42,000 reports within the first hour of operation
  - 121,000 total reports made
  - 85% of victims captured in grade one calls

*[NYC re-modeled it's Call Center app on the London system]*



# Disaster Missing Persons Call Centers



## New York City UVIS/311:

- A call center did not exist on September 11, 2001.
- Investigative effort: More than a year to reconcile 30,000 missing persons reports/88 countries
- Unified Victim Identification System (UVIS) established in 2004
  - System now operational in other jurisdictions, including: New Jersey and Nevada



# New York City 311 Call Center

**Unified Victim Identification System is Activated by the Mayor or Police Commissioner**

Following activation, a message is broadcast from the Mayor directing the public to call **311** or **212-NEW YORK**



- System runs dormant at the NYC 311 Call Center and can be activated instantaneously
- 311 becomes the single, centralized, call center for reporting persons potentially involved in an incident
- Reports typically handled by agencies such as American Red Cross are directed to 311



# Data Management System - UVIS

The Unified Victim Identification System (UVIS) is a browser-based application that resides at NYC's Centralized data center and provides an integrated platform to manage missing persons and victim information

- The centralized call center 311- UVIS Missing Persons Module collects data from the public, law enforcement, etc:
  - Automates all processes into a single, central repository
  - Allows the efficient investigation of missing persons reports through a report comparison engine and prioritization schema

Unified Victim Identification System  
311 Operator is logged in as Call Center Operator

Report for Incident: <Select One> Report Date/Time: 8/30/2011 10:49 AM

**Caller/Reporter's Information**

Caller/Reporter:

General Information

REPORT NO: (New report)

Caller ID 9172287389

Last Name Suffix First Name Middle Name

Salutation Gender

<Select One> <Select One>

Primary Contact

Cellular

**Reported Missing Person's Information**

Reported Missing Person: 1 Add Additional Reported Missing Person

General Information

REPORT NO: (New report)

Last Name Suffix First Name Middle Name

Caller/Reporter's Relationship To RM of RM Person

<Select One>

Gender Date Of Birth Age Age Unit

<Select One> MM / DD / YYYY <Select One>

US Citizen? <Select One>

Social Security Number Probable Destination

Marital Status Race

<Select One> <Select One>

Primary Contact

Cellular

**Contacts Address**

Additional Contact Information

<Select One> Remove

<Select One> Remove

<Select One> Remove

<Select One> Remove

<Select One> Remove

Add Additional Contact

**Contacts Address Employment**

Additional Contact Information

<Select One> Remove

<Select One> Remove

<Select One> Remove

<Select One> Remove

<Select One> Remove

Add Additional Contact



# GAP: Disaster Missing Call Center Capability



## Hurricane Katrina (2005):

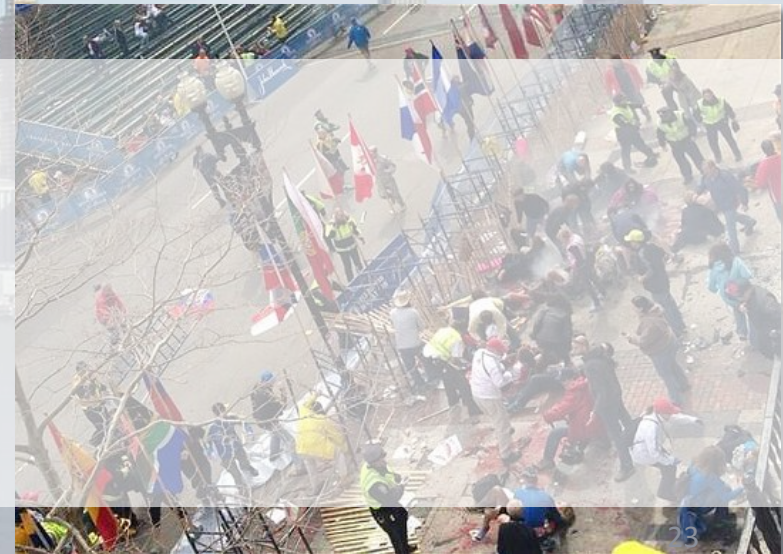
- “The ad-hoc creation of a missing persons systems collection system created confusion and compromised public safety.”
- They were “highly inaccurate,” they “did not collect the right data”

- Brent Woodworth

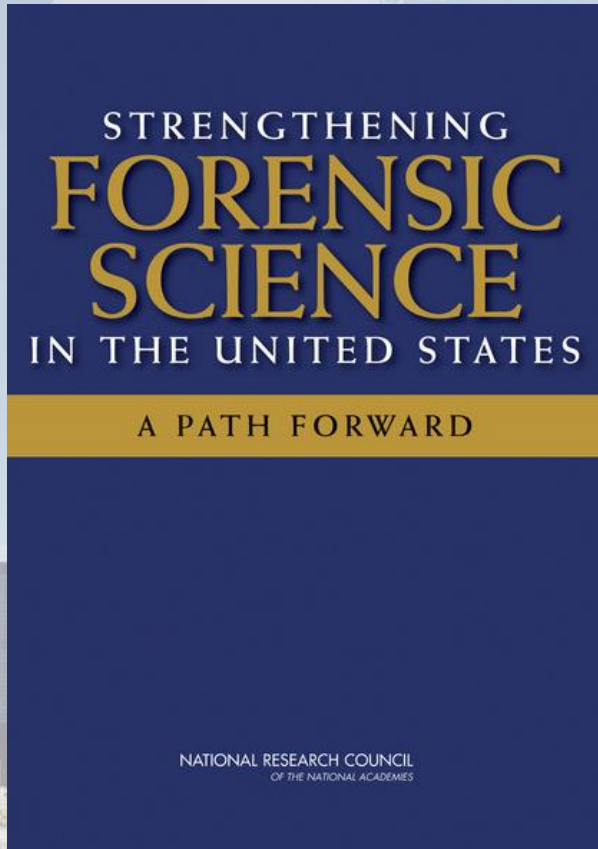
(as quoted in Post-Disaster Missing Persons Process: San Francisco 311 Customer Service Center; Goldman School of Public Policy May2, 2014)

## Boston Marathon Bombing (2013):

- The Mayor’s 24 Hour Constituent Service was expecting to receive around 80 calls the day of the marathon
- Received 8,600 calls in 24 hours (1,000% increase)
- Only 28 matches of missing people
- Many people experienced delays/busy signals for 10 - 20 minutes before they were able to speak to an operator







**“With the exception of some large city, county, and state systems, the level of preparedness of ME/C jurisdictions is generally very low.”** (page 9-15)



# National Disaster Missing Persons Call Center

A National Disaster Missing Persons Cell Center would serve to assist local jurisdictions with any incident in the US or abroad which might include American disaster victims.

- Serve small jurisdictions unable to fund, equip and staff a disaster missing persons call center.
- Greatly improve the nations response to a large scale incident
- Ensure reliability of collected disaster missing persons data
- Improve post-incident coordination amongst missing persons stakeholders.





JOHN BURKHART SCHWARTZ  
JAMES GREGORY SMITH  
ANDREW IRA ROSENBLUM  
JOSEPH  
LE KOUSOULIS  
MATTHEW DOLLARD

LYNCH  
JOSEPH RYAN ALLEN  
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JOHN M. POCHER  
TRONICO  
DAVID ROBERT MEYER  
LAURENCE DAMIAN CORREA  
RICHARD H. STEWART, JR.  
JAMES JOSEPH SUOZZO  
JOSEPH PLUMITALLO  
CHRISTOPHER



# QUESTIONS?

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