

Boston Marathon

April 15, 2013 - Lessons Learned

Pre & Post 2:50 PM



Chris Troyanos, ATC
Medical Coordinator
Boston Athletic Association

NFL's Version of Preparedness

- Always have a plan, and believe it in. Nothing good happens by accident

Chuck Knox

LA Rams

Medical's Role in Race Operations

- Ensure event safety
- Provide medical care
- Event medical decisions
- Medical spokesperson
- Coordination of city, town, state & federal agencies
- Coordinate hospital support



Medical Coverage Locations



Medical Preparation

- Competitor Safety/education
- Hazardous Conditions
- Impaired competitor policy
- Race scheduling
- Hospital notification
- Communications
- Post race tracking/families
- Medical Technology
- Fluid Protocols
- Equipment/Supplies
- Medical Staffing
- Medical Records
- Medical Protocols
- SD Protocol
- HIPAA/federal regulations
- OSHA Standards
- Transportation Plans

Injury/Casualty Rates

30,000/weather a major factor

- 3% of field 900 Light day
- 5% of field 1500 Moderate day
- 8% of field 2400 Heavy day
- 10% of field 3000 Oak Room Bar

- * # of beds in Tent A - 200
- # of beds in Tent B – 150
- # of beds/Course - 300

Key Years

BAA Medical Program

- 1995 – New York Marathon
- 1996 – 100th Boston Marathon
- **2004 – 22,000 runners/Heat**
- 2007 – Nor'easter/near cancelation
- **2012 – 27,000 runners/Heat/near cancelation**

* Willingness to share info between marathon medical groups



2012 Boston Marathon 2500 (+) Encounters

Course DMAT's (4)	377
Medical Tent A	895
Medical Tent B	665
Medical Tent C	114
Elite Medical	10
Elite Medical	30

Red Cross Station (22) - 4000*



Emergency Medical Services 2012 - Race Day EMS Transports

Boston EMS	94
Cataldo	54
Fallon	50
AMR	53

Total = 251

2004 Total - 278



Hospital Totals - 260

Framingham Union	4/2 admitted
Leonard Morse	7
Newton Wellesley	61/1 admitted
St. Elizabeth's	28
Brigham & Women's	25/10 admitted
Beth Israel	52/3 admitted
Tufts NE Medical	34/7 admitted
Boston Medical Center	20/9 admitted
MGH	23/9 admitted



Pre Planning – Agencies Involved



- Boston EMS
- Boston Fire/Police
- MEMA
- FBI
- DPH/OEMS
- 10 Supporting Hospitals
- State Police
- National Guard
- Red Cross
- 8 Cities/Towns

What we learned.....

- **Marathons are “Planned Mass Casualty Events”**
 - **Marriage of Sports & Disaster Medicine**
- **All events should determine their ability to properly triage and treat w/out overloading the hospital and EMS systems.**
- **Higher level of coordination is needed between the race and PS**
- **Medical “best practices” need to be developed for all.**
- **Improved interagency communications are needed.**
- **Sharing of data collected > BAA > DPH > MEMA**

All Marathons should be Considered a Planned Mass Casualty Event

“An MCI is defined as one in which the number of people killed or injured in a single incident is large enough to strain or overwhelm the resources of the local EMS providers.”



What we learned.....

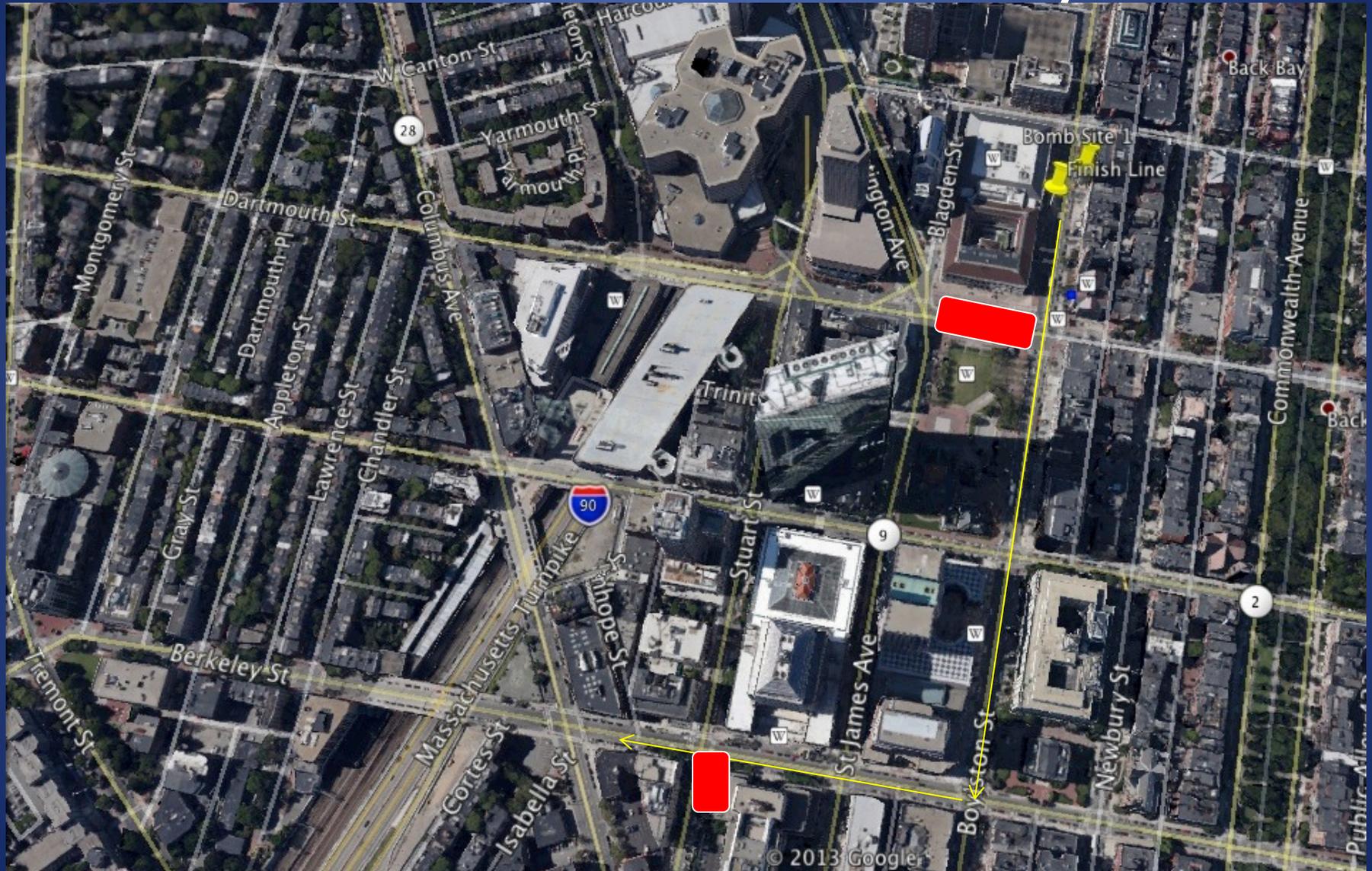
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Pre 2:50 PM



- 21,000 Finishers
- 5,600 Still on Course
- 15 Medical Transports
- Near perfect weather
- < 3% Casualty Rate
- 2 Reported MI's/Course

Post-Finish Line Medical Layout



Timing/Luck/Fate?



Bombing Sites



- Bomb #1 2:50 pm
- 75 Yards from Med Tent
- Bomb #2 (12 seconds later)
- Over 100 Yards from Med Tent
- Finish Line Staffing
 - * 8 Physicians
 - * 30 ATC's
 - * 20 Student AT's/WC
 - * 4 Boston EMS

What happened in 25 minutes?

- Immediate Response
 - -Spectators
 - - BAA Volunteers
 - - Police/Boston EMS/Fire
- 264 casualties
 - 97 victims to Medical Tent “A”
 - 3 fatalities/two on site
 - 14 + traumatic amputations
 - First victim to hospital in 18 min.
 - All victims triaged & transported



Rapid Response

- Triage
- First Aid
- Package
- Transport



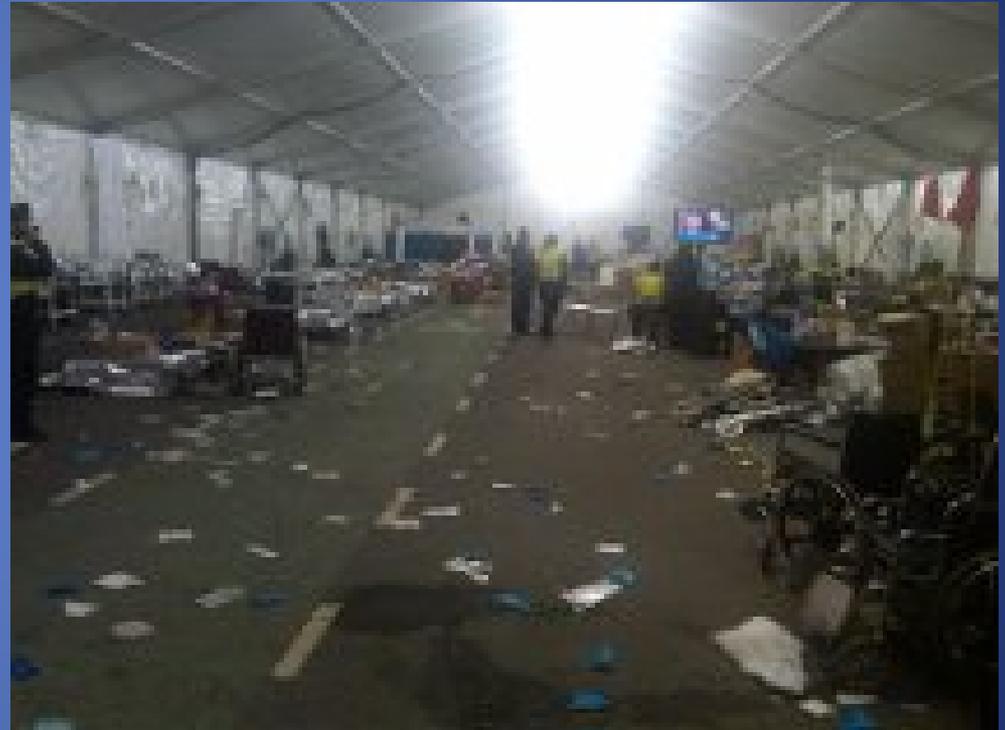
Eventual Outcome



- Proximity to Finish line and Medical Tent.
- Highest concentration of medical person in the world.
- Boston EMS
- 5 Level I Trauma Centers
- 3 Pediatric Trauma Centers
- Pre Event Planning
- Mutual Aid Agreements
- “Team Approach”

The Immediate Aftermath

- Now What
- Checking In
- Roll Call
- Inventory
- Heading “Home”
- Now What



Game Changer

Chicago/New York





Psychological - “First Aid”

Tuesday:

- * Colleges/Universities
- * DPH/DMH
- * HHS

Wednesday:

- * BAA OC/Medical Meeting
- * Calls to medical leadership
- * Federal Assets Arrive

Thursday:

- * Coordinated Plan in place
- * Host 4 Debriefing sessions
- * Counselors to BAA Offices
- * Emails to all BAA volunteers

Friday:

- * Shelter in Place
- * City of Boston shut down

Saturday:

- * Events cancelled

Sunday:

- * First of 3 BAA/DPH Debriefs

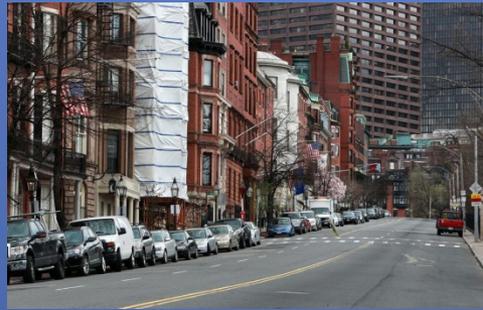
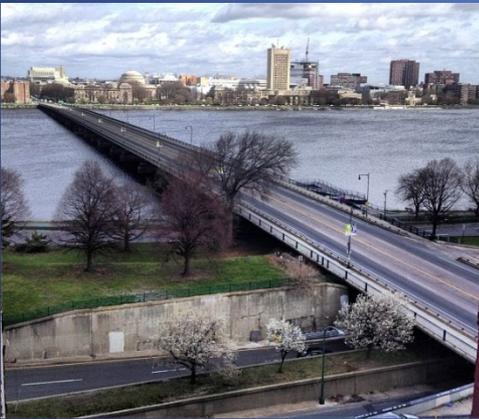
Federal Crisis Management Team – 10 days

All events coordinated through DPH/MIC

Secondary Programs Arranged

The Week Ahead

- Uncertainty
- Lockdown
- Manhunt & Apprehension



Post-Event Processing: *Dealing with Catastrophic Events*

- *Situational irony – did that really happen?*
- *I did not do enough....*
- *I ran from the event....*
- *Could not leave my post to help...*
- *Fear of additional devices....*
- *Visual trauma....*
- ***All levels of medical staff
(professionals and volunteers)***



Post-Event Processing: *Dealing with Catastrophic Events*

- *I can't remember everything that happened.*
 - *If I can't remember, how do I know if I did the right thing?*
- *Hyper vigilance*
- *Sound sensitive*
- *Crowd sensitive*
- *Disordered sleeping/eating*
- *"You just don't understand what I am going through"*
- *Quick to anger*
- *Social Media connections*
- *Family Anxiety/inability to connect on after 2:50 PM*

Healing Process/Moving Forward 6 Months Post Blast

- * Coordination with City/State and private Mental Health groups.
- Hospitals/EMS Groups conduct support programs.
- * Colleges/Universities provide support
- BAA Coordinates Volunteer Recognition Program
- AllOne live webinars – Runners/BAA Volunteers
- * Schwartz Center Rounds (4)
- * WBZ Video Message
- * BAA webpages dedicated for support programs



Planning for 2014

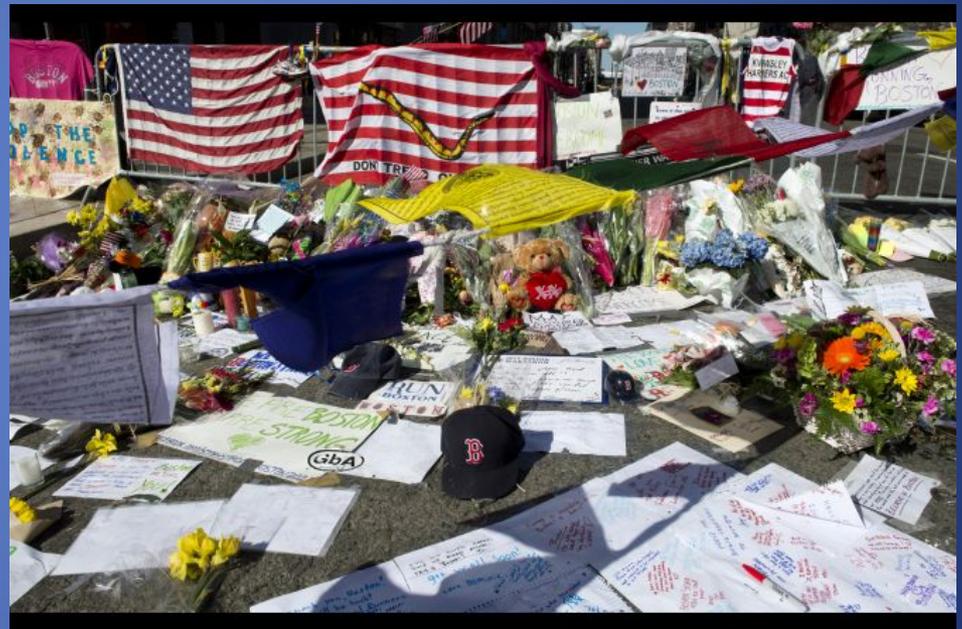
- Field Size 36,000
- Security Changes
- Volunteer Anxiety
- Runner Anxiety
- Public Safety Anxiety
- World Affairs
- Weather
- My focus.....



Getting Ready

“A new challenge”

- Education
 - *Keefe Tech*
 - *Babson College*
- Online Programs
 - *Security Concerns*
- “Train the trainer”
- Schwartz Center Rounds
- AllOne Webinar
- Psych Teams
- Psych Messaging



2014

“What was different?”

- Increased number of medical volunteers
- Larger tents/additional beds on course
- Density concerns
- Psych Teams - 60
- Coverage area to Boston Commons
- Large increase to Tent B
- Expansion to Auxiliary and VIP Tents
- BAA Operations Center
- Security
- Communications
- Education



2014 Results/36,000 Runners

- Course Medical (26) – 1866
- Boston Medical Tents
 - A – 1187
 - B – 645
- Boston Commons -54
- Hospitals (10) – 202
- EMS Transports – 124

* 99% Finished Race



Lessons Learned

- We needed closure.....
- EAP/preparations vs human element
- Communication failures
- BAA Command Center
- Scene safety
- Volunteer muster points
- Next level ICS training
- Continue to focus on job at hand
- Continue to expect the unexpected
- BAA Medical Command Changes



In Remembrance

Martin Richards



Krystle Campbell



Lingzi Lu



Sean Collier



Thank you

