UNDERSTANDING TERROR MEDICINE

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Essential Elements of Terrorism

1. Violence or threat of violence
2. Aimed at noncombatants
3. Intended to influence beliefs, policies, or behavior

There is no “good” terrorism vs. “bad” terrorism
Which Event Prompted More Public Interest and Media Coverage?

• **April 15, 2013—Boston Marathon Bombings:** 3 killed, many injured. Minimal property damage.

• **April 17, 2013—Texas Fertilizer Plant Explosion:** 15 killed, many injured. 350 buildings damaged or destroyed.
Which Event Prompted More Public Interest and Media Coverage?

Google Results Compiled Feb. 2017

Boston Marathon Bombing: 2,370,000

Texas Fertilizer Plant Explosion: 384,000
Terror Medicine

Includes aspects of emergency and disaster medicine as well as distinctive features regarding:

• Preparedness
• Incident management
• Nature of Injuries
• Psychological effects
Terror Medicine encompasses

• Preparedness
Oklahoma City: Federal Building Bombing
April 19, 1995 (168 killed, 800 injured)
Nearby Hospital Received 153 Victims
Nurses run to scene from St. Anthony Hospital, 8 Blocks Away
Madrid: 4 Trains, 10 Simultaneous Bombs
March 11, 2004 (191 killed, 1,500 injured)
Nearby Hospital Received 312 Victims
London: Underground/Bus Bombings
July 7, 2005 (56 killed, 700 injured)
Nearby Hospital Received 200 Victims
<table>
<thead>
<tr>
<th>EVENT LOCATION</th>
<th>RECEIVING HOSPITAL</th>
<th>PATIENTS RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oklahoma City, 1995</td>
<td>St. Anthony</td>
<td>153</td>
</tr>
<tr>
<td>Madrid, 2004</td>
<td>Gregorio Marañón</td>
<td>312</td>
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<tr>
<td>London, 2005</td>
<td>Royal London</td>
<td>200</td>
</tr>
<tr>
<td>Mumbai, 2011</td>
<td>Sir JJ</td>
<td>134</td>
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</table>
Boston Marathon Bombings, April 15, 2013
3 Killed, >200 Injured
Boston Marathon Bombings
Patient Distribution

<table>
<thead>
<tr>
<th>RECEIVING HOSPITALS</th>
<th>PATIENTS RECEIVED</th>
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</thead>
<tbody>
<tr>
<td>Massachusetts General</td>
<td>46</td>
</tr>
<tr>
<td>Brigham and Women’s</td>
<td>38</td>
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<tr>
<td>Beth Israel Deaconess</td>
<td>30</td>
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<tr>
<td>Tufts Medical Center</td>
<td>28</td>
</tr>
<tr>
<td>Boston Medical Center</td>
<td>27</td>
</tr>
<tr>
<td>Faulkner Hospital</td>
<td>18</td>
</tr>
<tr>
<td>Massachusetts Eye and Ear</td>
<td>18</td>
</tr>
<tr>
<td>St. Elizabeth’s</td>
<td>16</td>
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<tr>
<td>17 Others (each received 1-9 patients)</td>
<td>60</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>281</strong></td>
</tr>
</tbody>
</table>
Signal Aspects of Preparedness

- Supplies (type, quantity)
- Equipment
- Structural enhancements (surge capacity, walls/windows, ventilation systems, protected/underground areas)
- Plans/Rehearsals/Exercises
Terror Medicine encompasses

- Preparedness
- Incident Management
Initial Triage--Scoop and Run (minimal onsite treatment)
Beware Second or Third Device (or More)
Missile Hit on Ophthalmology Department
Western Galilee Hospital, July 28, 2006
Ophthalmology Department
Western Galilee Hospital, July 2006
400 Emergency Beds Underground

Western Galilee Hospital, July-August 2006
Rambam Hospital, Haifa
Rambam Underground Parking Garage
Completed 2012
Converted to 2,000 Bed Underground Hospital
Signal Aspects of Incident Management

- Triage—
  at scene of incident
  at hospital entry
- Ambulance inspection at hospital perimeter
- Cellphone lines blocked
- Communications capability between—
  hospitals
  hospitals, law enforcement, other authorities
  hospitals and inquiring families
Terror Medicine encompasses

- Preparedness
- Incident Management
- Injuries and Responses
Penetrations from Nails/Screws during Terror Attack  (14-year old girl at Sbarro’s, Aug. 9, 2001)
Cutaneous Anthrax
Polonium Radiation Poisoning
Alexander Litvinenko
London: Suddenly Ill November 1, 2006, Died 4 Weeks Later
Signal Aspects of Injuries

- Numerous penetration wounds
- Blast injuries
- Blunt trauma
- Inhalation injuries
- Crush
- Burns
- Effects of biological, chemical, or radiological agents
Terror Medicine Encompasses

- Preparedness
- Incident Management
- Injuries and Responses
- Psychological Effects
Intensity of initial psychological reaction from a terror attack is much higher than from other traumatic events like road accidents.

Dr. Arik Shalev, Director of Psychiatry, Hadassah
Long Term Psycho-Physical Care
Societal Resilience
Bombing of Café Hillel, Jerusalem, September 2003
Societal Resilience

Café Hillel Reopened October 2003
Signal Psychological Issues

- Unusually intense early reaction by people who experience a terror event
- Immediate psychological intervention essential
- Availability of long-term care (psychophysical)
- Societal resilience
Terror Medicine: Key Aspects (1)

1. After an initial terror attack, beware of second or third follow-up attack.

2. If many casualties, be wary of sending large numbers of patients to one (usually the nearest) hospital.

3. If an event is thought to be deliberate, best to evacuate patients from the area, not to treat on site. Quick evacuation (“Scoop and Run”) means less chance of exposure to follow-up terror attacks. Also, more treatment capabilities are available in a hospital.

4. Consider inspection of all arriving ambulances at perimeter of hospital grounds.

5. If more than one person collapses, convulsing and foaming at mouth, consider an organophosphate exposure (eg., sarin). Unless wearing PPE, moving close to a victim risks responders’ safety.
Terror Medicine: Key Aspects (2)

6. Close quarter suicide bombing may cause combinations of injuries (penetration, blast, blunt, inhalation, crush, burn) rarely otherwise seen in a single patient.

7. If a hospital receives an imminent bomb threat, consider shutting electronic communication since cellphones may be used to detonate a bomb.

8. Commonly experienced symptoms (fatigue, fever, certain cutaneous lesions, chest pain) may also be signs of a biological or chemical attack.

9. Terror attacks generate more intense fear and anxiety than natural or accidental events. Eg.: suicide bombing vs. automobile accident.

10. Psychologically traumatized victims of terror require immediate treatment to minimize long-term effects.
Questions?