Israeli Lessons in Mass Casualty Incident Response
Walker-Sullivan Fellowship
Report to CHFT July 14, 2010
The State of Israel

- 7.2 Million Population (Virginia)
- 10,700 Sq Miles (New Jersey)
- Democracy, independence in 1948
- Developed Economy
  - 22nd GDP per capita
  - Highly educated
  - Pharmaceuticals /Agriculture/
  - High Tech/ Diamonds/Energy
Healthcare Financing

- Universal coverage
  - Not employer based
  - Funded through general and income tax
  - Basic package determined by Ministry of Health; some unique benefits

- Four “Sick Funds” (HMO’s)
  - Contract with providers (private or public)
  - Open enrollment / must accept all who apply

- Private “Supplemental” Insurance is available
Healthcare Costs & Outcomes

- Costs are lower
  - $2,000 per capita (vs. $6,000 in U.S.)
  - 8% of GDP (vs. 16% in U.S.)

- Outcomes Comparable or Better
  - Life expectancy 80.3 years vs. 77.8

- Technology is comparable
  - U.S. Trained MDs
  - A culture of Innovation
  - 4 Medical Schools
The Question

What lessons can be learned in Israel regarding the efficient handling of mass casualties which can occur as a result of natural disaster, accident, war or terrorism?
Walker Sullivan Fellowship

- Hospitals Visited
  - Shaare Zedek – Jerusalem
  - Tel Aviv Medical Center – Tel Aviv
  - Ziv Medical Center – Zefat

- Interviewed:
  - Director of Disaster Preparedness
  - ED Director
  - Hospital CEO
  - ICU Director

- Toured each hospital extensively
Shaare Zedek Medical Center

- Serves Greater Jerusalem
- 532 Beds
- 60,000 Admits
- 85,000 ED Visits
- 11,900 Births
- LOS 3.9 days
- 250,000 Patient Days
- 915 RNs
- 370 MDs
Tel Aviv Medical Center

- Beds: 1050
- Admissions: 94,000/yr
- LOS 4.3 Days
- Physicians: 1,132
- RNs 1,780
- ER Visits: 180,000/yr
- Serves Metro area of 1 million
Ziv Medical Center

- 300 Beds
- 60,000 ED visits
- 2,900 Births
- Located in Sefat, a city close to the Northern Border with Lebanon
- Receiving Hospital for injured military (820) and civilians (647) during the war with Hezbollah in 2006
Special Considerations

- Security from
  - Secondary Attack (e.g. hijacked ambulances)
  - Biologic/Gas Attack
  - Rockets
  - Cell phones
What about the military?

- Compulsory military service
- Essentially all medical personnel have served in the army
- There are no separate, parallel medical delivery systems for the military
- IDF plays role in:
  - Evacuating injured in times of war
  - Clearing all terrorist bombing scenes for radioactive or biologic agents
Mass Casualty vs. Multiple Casualty

- A **Mass** Casualty Event occurs when the number of Patients exceeds the ability of the available medical resources to individually manage each patient.

- A **Multiple** Casualty Event occurs when an institution is able to manage each patient by mobilizing additional resources.

- Either may occur suddenly or over a matter of weeks or months...
Surge Capacity

- “The ability to expand care capacity in response to prolonged demand”
- “Surge Capacity encompasses potential patient beds, available space in which patients may be triaged, managed, decontaminated or located; available personnel of all types, necessary supplies, medications and equipment; and the legal capacity to deliver care under extraordinary situations…” -- Joint Commission
Surge Capacity

- In Israel – Surge Capacity is mandated by the Ministry of Health and all hospitals must comply:
  - 20% above licensed bed capacity for *Immediate* Surge Capacity
  - 50% above licensed bed capacity in times of war

- Surge capacity is not pretty
The al-Aqsa Intifada

- 2001-2005 period of increased violence marked by more than 125 separate suicide bombings throughout Israel
- Hundreds of civilian victims
- 1,053 fatalities
- Targets included cafes, buses, bus stops, road junctions, etc.
Drilling and Standard Operating Procedures

- Hospital Incident Command System is similar to U.S. except IC is typically a surgeon
- Each hospital has an disaster preparedness coordinator (0.5-1.0 FTE)
- Daily bed capacity is reported to MOH
- Internal & External Call-up systems in place
- Drills take place for most scenarios 2-4 times/year always w/ external evaluators
In the case of MCE..

- A single, nationwide EMS agency (MDA) coordinates the distribution of patients to various hospitals
  - Proximity trumps specialization
  - MDA representative in the receiving bay at each hospital in constant contact with the blast scene
  - Field triage and treatment is minimal (scoop & go)
- ED is cleared of all patients promptly
  - Hallway beds w/ oxygen and AC power
  - “Upstairs” to medical wards
In the case of MCE:

- Non-emergency MDs and other healthcare personnel are kept **out** of the ED and staged near ED
- Family of patients are diverted to a separate and distinct area in hospital
- Media is diverted to an area away from the ED
On arrival of an ambulance...

- Security clears ambulance before allowing access to ED vicinity
- A Decontamination zone is designated if indicated
- Initial triage of a patient takes place outside the entrance to ED:
  - Stretcher patients → into the ED
  - “Walking wounded” → into an adjacent care area
On arrival to ED entrance

- A second, senior surgeon performs a 30-60 second triage at doorway to ED:
  - Immediate Care – Trauma Room
  - Delayed Care – Regular ED Room
- Patients are registered and banded with a number; all charting and orders correspond with that number.
- Photos of patients are uploaded onto a secure website shared by social workers at all hospitals throughout Israel
Immediate Care

- A team, with a “case manager”, is assigned to each bed in the trauma room. Their only responsibility is to remain with their single patient through the entire course of care:
  - Airway, hemorrhage, vascular access, focused abdominal U/S exam, stabilized
  - Off to CT / OR / ICU / Other
- The ED is a ONE WAY street
Care beyond the ED

- Patient care team/case manager accompanies patient to next station; care decisions are then made by the team in concert with the senior MD overseeing that station.
  - O.R.
  - CT
  - ICU
  - PACU
The walking wounded

- Assessed in area outside main ED
  - May require wound debridement
  - Ortho consult
- All patients are processed through a Discharge Center (distinct from ED) prior to D/C:
  - PTSD Resources (Social Worker)
  - Hearing / Eye exam by ENT/Ophthalmologist
  - Internist reviews all labs / X-rays / etc to assure nothing has been missed
Other observations…

- The role of philanthropy at Israeli hospitals
- Hospitals are a model of peaceful coexistence and cooperation
- Different disasters – same lessons; similarities to Katrina
Lessons Learned
Checklist

- Perform HICS Disaster Drills on regular basis?
- Ability to completely clear the ED?
- Ability to rapidly accommodate 20% over licensed bed capacity?
- Ability to rapidly assess, register & track patients?
- Plan for segregation of family, media and others from ED?
- Ability to turn ED into a “One-Way” street?
- Is there a plan to mobilize &/or retain staff in time of crisis?
Thank you