

“We’re from the government - and we’re here to help...”

Integration of federal disaster teams and local EMS resources for large scale shelter management following Hurricane Harvey in Houston, Texas

Kevin Schulz, MD, FAEMS, FACEP

Kevin.schulz@houstontx.gov

Kevin Sirmons, MD, NRP

drsirmons@gmail.com @Ronindoc



NAEMSP: Annual Meeting | January 8-13, 2018 | Manchester Grand Hyatt | San Diego, CA

- Kevin Schulz MD, FAEMS, FACEP
 - Assistant Medical Director – Houston Fire Department
 - EMS Fellowship Director and Clinical Assistant Professor of Emergency Medicine – McGovern Medical School at UTHealth
- Kevin Sirmons MD, NRP
 - Medical Officer - US DHHS/OS/OPEO/OEM/NDMS/MN-1 DMAT
 - Emergency Medicine – Monticello, Minnesota
 - EMS Medical Director - Emergency Medical Solutions, LLC and ALS Aerocare
- **NO DISCLOSURES**

Objectives

- After attending this presentation, the participant will be able to...
 - ...better respond to a disaster situation by adopting an integrative approach to incorporating federal assets into local response
 - ...create interoperability disaster plans to incorporate all levels of local, regional, state, and federal assets into medical care in sheltering operations
 - ...understand the mission of the National Disaster Medical System (DMAT and USPHS) when tasked with shelter-type operations
 - ...understand the complex nature of medical care for prolonged shelter operations, in areas where the infrastructure is destroyed, undergoing the rebuilding phase, and gradually coming online







George R. Brown Convention Center

- Opened Sunday, August 27th at approximately noon
- Official shelter capacity initially listed at 4,000 evacuees, then increased to 5,546
 - Within 24 hours, over 5,900 evacuees were in the shelter
 - By 48 hours, the evacuee count was pushing 10,000



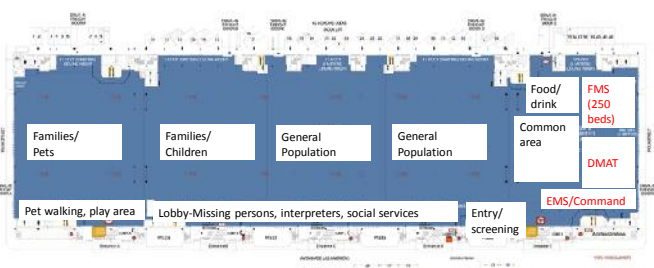


Houston, we have a problem

QuotesPics.com



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Medical Grows with the Shelter



- Medical coverage started Sunday afternoon with a few American Red Cross Volunteers, a few Houston Fire Department EMS crews, and an HFD Medical Director on-site 24/7 starting Sunday
- By late Monday, a full blown medical clinic is operational, staffed by a combination of local medical volunteers and HFD personnel
- Goal was to protect the embattled hospital system

Medical Grows with the Shelter



- Memorial Hermann Hospital (University of Texas System) and Baylor College of Medicine grant full immunity / liability coverage for medical provider employees volunteering at shelter
- Pharmacist took new/unopened medications donated by the public, attempted to safely fill scripts for those in need

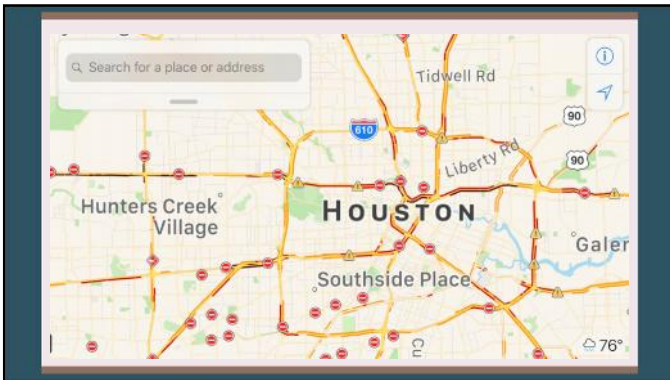
Special Medical Considerations

- Acute injuries and illnesses
- Hemodialysis
- Chronic O₂
- Behavioral Health
- Nursing/Long-term care
- Lack of Maintenance Medications
- Withdrawal symptoms – antiepileptic meds, EtOH, etc.



The Feds are Coming!!!

- National Disaster Medical System teams set to arrive by late afternoon Tuesday, August 29th
- Transition plan included maintaining volunteer-run medical station for at least 24 hours to allow an organized stand-up of NDMS resources
- DMAT began setting up Tuesday
 - Became operational Wednesday morning
 - Wednesday night at 19:00 volunteer medical station shut down and DMAT took over provision of medical care
- HFD Medical Direction maintained overall medical control of facility





NDMS / DMAT teams

- Staged in Dallas x3-4 days
- Just-in-time training during down time at ACEP Dallas and at staging hotel
- Started travel morning of August 27th
- Arrived in Houston 0400 August 29th (17 hours to travel about 200 miles)
- Slept 3 hours, then got orders to assist at GRB



NDMS / DMAT Teams

- Initial orders to support shelter medical operations at GRB
- Initial census: about 2500 evacuees on NDMS arrival
 - Within 12 hours, increased to 10,000
- Initial tasks:
 - Observed medical operation in place
 - Setup BoO
 - Night shift slept
- Integrated care and started accepting some patients over 10-12 hours period
- 100% turn over to DMAT at 1900


Interoperability Plan

- Patient Transport – HFD maintained control
- Communications – radio coms between HFD/DMAT/FMS
- Hemodialysis / special needs and services
 - DMAT only saw HD patients who were new to the system or where symptomatic, otherwise it was handled without stressing their system
- Multiple Patient Incidents
 - DMAT would only receive at most four (4) critical patients from a single incident inside the shelter, and the others would be transported
- DMAT Diversion plan
 - HFD On-site Medical Director, in coordination with the on-duty DMAT Site Commander, could place DMAT on diversion status for high acuity patients
- Bounceback intoxicated/overdose or “same complaint” (repeat CP, etc.) patients

HFD Maintained Overall Medical Control

- An HFD Medical Director on-site 24/7 for the entire two weeks of DMAT Medical Operations
 - Approved all transports and destination decisions from GRB
 - Liaison between:
 - local hospitals and GRB Shelter administration
 - OEM and Emergency Operations Center
 - HFD / strike teams and DMAT
 - "Put out fires"
 - Assisted with response to all medical calls within GRB, when needed

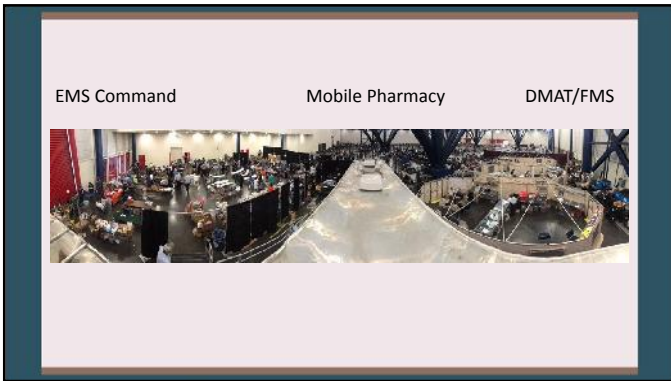
HFD Maintained Overall Medical Control



- HFD personnel maintained Transport Officer role
 - 1st - HFD transport units
 - Next - FEMA Ambulance Strike Teams
 - Next - Texas-state asset Ambulance Strike Teams
 - Determined patient destination and maintained situational awareness of hospital closures, openings, status of facilities

DMAT Operations

- Approx. 2/3 staff on during daytime, 1/3 night shift
- Red/Yellow: 1 MD, 1 RN/NP, 2 medics, EMT
- Green tent: 2 MD/PA/NP, 2-3 paramedics, 2 EMT
- Pharmacy/Logs/Commo/IRCT support staff 24/7
- First night: 260 patients over first night shift (1900-0700)
- Another approx. 300 the next day shift
- Gradual tapering of patient volumes once patients treated and meds refilled, etc.







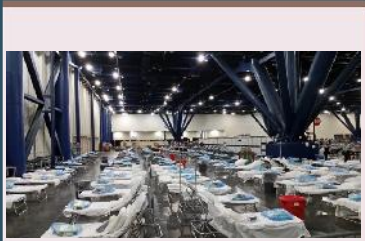






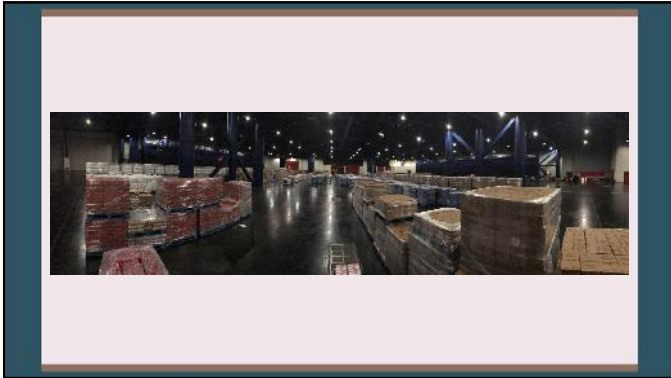
FMS: Federal Medical Shelter

- 250 portable beds staffed by US Public Health Service
- Designed for long term care type patients
- Assisted with isolation (bed bugs, lice etc.)
- Grouping of LTC patients needing oxygen – consolidation of oxygen requiring patients to one area











Kush

- Source of initial problems at DMAT and for HFD
- Short acting, respiratory-suppressing, vomit-inducing
- "\$2"
- Available right outside the GRB
- Difficulty with local police controlling due to more serious issues and limited staff



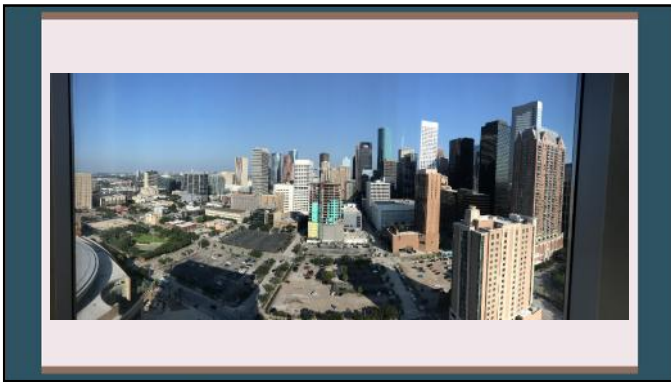
Lessons Learned

- During disasters – everyone wants to help, but the coolest heads must prevail.
- **Regroup:** there is value in daily lessons learned, but get everyone on the same page, as things change HOURLY
- **Reorganize:** supplies, materials
- **Redistribute:** resources, meds, supplies
- **Redesign:** shelter design and template – consolidate, coordinate; base of operations, patient flow, transportation, etc.
- **Reframe:** ensure everyone is on the same page, each shift, within the organization, etc.

Lessons Learned


- Find liaison with local resources – not everything contained in a cache – find facilities to obtain needed items and plan for future needs
- Call lists of local hospitals for specialty services, when possible
- Telemedicine capabilities
- Explore different transportation options – taxi vouchers; bus fare/passes; Uber/Lyft etc. for nonemergent patients
- Request for mobile pharmacy was **KEY** to medication refills for patients – extremely beneficial for medication dispensing and assisting with management – 30 day supply of meds for free (Kroger!)





Questions?

TEXANS BE LIKE



I'M GOING TO WHATABURGER! Y'ALL WANT ANYTHING?

Communication plan specifics will be included in slides to follow
Additional info / presentation questions: drsirmons@gmail.com

Communications Plan

- Unified Command located in GRB
- HFD supplied radios to DMAT
- Two-way communication between HFD within shelter and DMAT
- Transportation requests radioed through Transportation Sector
- Transport requests approved by on site HFD MD

Multiple Patient Incidents

- **Five or more** patients of an acuity potentially appropriate for evaluation and treatment by the DMAT the following protocol will apply:
 - Four patients (initially) would be brought to the DMAT
 - Additional patients would be taken to the Transportation Sector.
 - Hospital destinations would be determined by the Transportation Officer.
- DMAT has ability to go on diversion status
- Any deviation from the protocol would go through duty officer from HFD

Specialty Acute Care Patients

- STEMI, Stroke, or Trauma activation, etc.
- The treating physician typically accompanied the patient to the Transport Sector
- Once the hospital destination was determined, the treating provider would contact HFD Telemetry for a brief patient care report to be relayed to the hospital
- This notification process was only utilized in the case of conditions requiring pre-notification and activation

Intoxicated Patient / Repeat Encounters

- Patients presenting more than once to the DMAT within 24 hours for the same condition
- Kush – major problem in first few days – multiple repeats (sometimes within the hour after discharge)
- HFD Medical Branch was informed upon the second presentation.
- Transport Officer determined need for transport to hospital, coordinating with DMAT.
- Some were not triaged by DMAT personnel and no DMAT EMR will be entered.
- Transports were approved by HFD Physician on duty

Hemodialysis Plan

- Hemodialysis planning was arranged by the Houston Health Department
- Patients staged in a holding area at specified times.
- The following dialysis patients were evaluated by DMAT providers:
 - Basics – EKG and ISTAT usually
 - Any patient that is new to the dialysis program/plan
 - Symptomatic patients (shortness of breath, chest pain, vomiting, pedal edema, vision changes, bradycardia, etc.)
 - Any patient who has not been dialyzed in five (5) or more days
- Patients who did not meet the above criteria did not require clinical evaluation prior to or upon returning from dialysis.
- On return, asymptomatic patients had expedited screening back to shelter population

DMAT Diversion

- DMAT Site Commander requested HFD Physician on duty
- Once DMAT in divert status, HFD personnel triaged patients:
 - **“Red”**: bypass DMAT; transport to hospital per Transport Officer.
 - **“Yellow”**: case by case basis in coordination with HFD Medical Command Physician and the on-duty DMAT Site Commander. Some transported, some evaluated / screened by DMAT to determine appropriateness
 - **“Green”**: placed in a queue for triage and evaluation by DMAT personnel. Managed by DMAT.
- Retriage did occur at times, with some patients declining and some improving during wait times
- Divert status released once appropriate, coordinated between HFD Medical Command and DMAT Site Commander

DMAT Unit Diversion, cont.

- At such time that the on-duty HFD Medical Command Physician, in consultation with the DMAT Site Commander, determines that it is safe for the DMAT to resume evaluation of all patients, the DMAT will come off "Diversion" status.
- HFD Medical Branch will be notified when the DMAT unit is placed on and off "Diversion" status.

References:

- National Response Framework, 2016. https://www.fema.gov/media-library-data/1466014682982-9bcf8245ba4c60c120aa915abe74e15d/National_Response_Framework3rd.pdf
- States: The Secretary of the Department of Health and Human Services has the authority to take actions to protect the public health and welfare, declare a **public health emergency**, and to prepare for and respond to public health emergencies. (Public Health Service Act, 42 U.S. Code §§ 201 *et seq.*).

8. Infrastructure Systems:

- **Objective:** Stabilize critical infrastructure functions, minimize health and safety threats, and efficiently restore and revitalize systems and services to support a viable, resilient community.
- **Critical Tasks:**
 - Decrease and stabilize immediate infrastructure threats to the affected population, to include survivors in the heavily- damaged zone, nearby communities that may be affected by cascading effects, and mass care support facilities and evacuation processing centers with a focus on life-sustainment and congregate care services.
 - Re-establish critical infrastructure within the affected areas to support ongoing emergency response operations, life sustainment, community functionality, and facilitate the integration of recovery activities.
 - Provide for the clearance, removal, and disposal of debris.
 - Formalize partnerships with governmental and private sector cyber incident or emergency response teams to accept, triage, and collaboratively respond to cascading impacts in an efficient manner.

9. Mass Care Services

- **Objective:** Provide life-sustaining and human services to the affected population, to include hydration, feeding, sheltering, temporary housing, evacuee support, reunification, and distribution of emergency supplies.
- **Critical Tasks:**
 - Move and deliver resources and capabilities to meet the needs of disaster survivors, including children and adults with disabilities and/or access and functional needs.
 - Establish, staff, and equip emergency shelters and other temporary housing options ensuring that shelters and temporary housing units are physically accessible for children and adults with disabilities and/or with access and functional needs.
 - Move from congregate care to non-congregate care alternatives, and provide relocation assistance or interim housing solutions for families unable to return to their pre-disaster homes.

14. Public Health, Healthcare, and Emergency Medical Services

- **Objective:** Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical, and behavioral health support, and products to all affected populations.
- **Critical Tasks:**
 - Deliver medical countermeasures to exposed populations.
 - Complete triage and initial stabilization of illness or casualties and begin definitive care for those likely to benefit from care and survive. Develop public health interventions to maintain and improve the health of individuals placed at risk due to disruptions in healthcare and societal support networks.
 - Return medical surge resources to pre-incident levels, complete health assessments, and identify recovery processes.

Federal Response and Assistance Under the Stafford Act

- The Federal Government may provide assistance in the form of funding, resources, and services. Federal departments and agencies respect the sovereignty and responsibilities of local, state, tribal, territorial, and insular area governments while rendering assistance that supports the affected local or state governments.

Robert T. Stafford Disaster Relief and Emergency Assistance Act

• Local, state, tribal, territorial, and insular area governments do not require Federal assistance to respond to most incidents; however, when an incident is of such severity and magnitude that effective response is beyond the capabilities of the state and local governments, the governor or Chief Executive of a tribe can request Federal assistance under the Stafford Act. In certain circumstances, the President may declare an emergency without a request from a governor when the primary responsibility for response rests with the United States, because the emergency involves a subject area for which, under the Constitution or laws of the United States, the United States exercises exclusive or preeminent responsibility and authority.

Robert T. Stafford Disaster Relief and Emergency Assistance Act

• The Stafford Act authorizes the President to provide financial and other assistance to local, state, tribal, territorial, and insular area governments, certain private nonprofit organizations, and individuals to support response, recovery, and mitigation efforts following a Stafford Act Emergency or Major Disaster Declaration.³⁴ Most forms of Stafford Act assistance require a state cost share. While Federal assistance under the Stafford Act may only be delivered after a declaration, FEMA may pre-deploy Federal assets when a declaration is likely and imminent. The Stafford Act provides for two types of declarations:

Stafford Disaster Declaration Types:

- An **Emergency Declaration** is more limited in scope than a Major Disaster Declaration, provides fewer Federal programs, and is not normally associated with recovery programs. However, the President may issue an Emergency Declaration prior to an actual incident to lessen or avert the threat of a catastrophe. Generally, Federal assistance and funding are provided to meet specific emergency needs or to help prevent a catastrophe from occurring.
- A **Major Disaster Declaration** provides more Federal programs for response and recovery than an Emergency Declaration. Unlike an Emergency Declaration, a Major Disaster Declaration may only be issued after an incident.

Stafford Disaster Declarations – Proactive Response

• **Proactive Response to Catastrophic Incidents:** Prior to and during catastrophic incidents, especially those that occur with little or no notice, the Federal Government may mobilize and deploy assets in anticipation of a formal request from the state. Such deployments of significant Federal assets would occur in anticipation of or following catastrophic incidents involving chemical, biological, radiological, nuclear, or high-yield explosive WMD; large-magnitude earthquakes; or other incidents affecting heavily populated areas. Proactive efforts are intended to ensure that Federal resources reach the scene in time to assist in reducing disruption of normal functions of state and local governments and are done in coordination and collaboration with local and state governments, private sector entities, and NGOs when possible.

- **ESF #8—Public Health and Medical Services (NDMS, US PHS)**
 - **ESF Coordinator:** Department of Health and Human Services
- **Key Response Core Capabilities:** Public Health, Healthcare, and Emergency Medical Services, Fatality Management Services, Mass Care Services, Critical Transportation, Public Information and Warning, Environmental Response/Health and Safety, Logistics and Supply Chain Management
- **Coordinates the mechanisms for assistance in response to an actual or potential public health and medical disaster or incident.** Functions include but are not limited to:
 - Public health
 - Medical surge support including patient movement
 - Behavioral health services
 - Mass fatality management.

