It Will Never Happen Here

2014 Orland Bus MCI & 2017 Oroville Dam Spillway Evacuation Incidents

John Poland, Associate Director, S-SV EMS
S-SV EMS Region Overview

- 10 Counties
- 21,000+ square miles
- 1.3 million static population
- 130,000 annual medical 911 calls (100,000 transports)
- 10,000 interfacility transports
- 1400 EMS aircraft 911 & interfacility transports
S-SV EMS Region Overview

- Multiple LE agencies
- 95 BLS & 9 ALS FD agencies
- 30 ground ambulance providers
- 8 EMS aircraft providers
- 18 acute care hospitals
  > 8 Trauma Centers
  > 6 STEMI Receiving Centers
  > 10 Stroke Receiving Centers
Medical & Health MCI/Disaster Response Entities Review

- Local providers & routine mutual aid resources
- Local OES
- Local Emergency Medical Services Agency (LEMSA)
- Medical Health Operational Area Coordinator (MHOAC)
- Regional Disaster Medical Health Coordinator/Specialist (RDMHC/S)
- State agencies (EMSA, CDPH, CA OES)
LEMSAs

- Authority – CA H&S Code (§1797.94, §1797.200)
- Entity with primary responsibility for EMS system administration/oversight in a county
- Collaborates with local public health for medical & health disaster planning/response
LEMSAs

- 33 CA LEMSAs
  - 26 Single County
  - 1 Dual County
  - 6 Regional (at least 3 counties)
MHOAC Program

- Authority – CA H&S Code (§1797.153)
- County Health Officer & LEMSA Administrator may act jointly as the MHOAC, or may appoint another individual to serve in this role

> Medical & health disaster planning/response requires collaboration between the LEMSA & local public health
Monitors, ensures & acquires medical & health resources during a local emergency/disaster

Works with the RDMHC/S program to submit & respond to medical & health resource requests outside their OA (county)
RDMHC/S Program

- Authority – CA H&S Code (§1797.152)
- Monitors, coordinates & acquires regional medical & health resources during emergencies/disasters
  - Authorized to make & respond to mutual aid requests from MHOAC programs within their region
  - Coordinates with other RDMHC/S programs & state agencies to obtain medical & health resources not available from within their region
S-SV EMS includes 8 counties in OES Region III & 2 counties in OES Region IV
Orland Bus MCI

April 10, 2014
I-5 North of Highway 32 (Glenn County)
Incident Overview

- 1 of 3 charter buses taking HS students from the LA area to tour Humboldt State University
- 43 students and 3 adult chaperones on board
NTSB Accident Reenactment

National Transportation Safety Board

Truck-Tractor Double Trailer Median Crossover Collision with Motorcoach and Postcrash Fire

Orland, California
April 10, 2014
1740: Initial 911 call
1742: Incident dispatch
1750: 1<sup>st</sup> FD units on scene (BLS)
1752: 1<sup>st</sup> ALS ambulance on scene (NB I-5)
1801: 2<sup>nd</sup> ALS ambulance at scene (SB I-5)
1803: EMResource MCI Alert initiated
1805: MHOAC program notified
1807: LEMSA/RDMHS notified
  > Request for additional ambulance resources
1825: 1st ground transport
1833: 1st air transport
1845: Initial SITREP submitted
1924: Shelter established
Large Incident, Huge Implications

- Multi-Casualty Incident (34 Injured)
- Mass fatality
  - 9 on scene
  - 1 at the hospital
- Limited local resources
- I-5 closed for 17 hours
- Significant media attention
Regional Response/Coordination

- Multiple FD & LE agencies
- 2 Disaster Medical Support Units & MCI Trailer from 3 counties
Regional Response/Coordination

- 14 ground ambulances from 6 counties
Regional Response/Coordination

- 7 EMS aircraft from 5 counties
- Air Ambulance Coordination Center
Regional Response/Coordination

- ICS Medical Branch positions assigned to personnel from multiple providers/counties
- Patient dispersal Control Facility in adjacent county (Enloe Medical Center – Butte County)
● Patients transported to 7 hospitals in 5 counties

- All patients meeting trauma triage criteria transported to designated trauma centers
MHOAC Response

- Coordinated with LEMSA & RDMHS for resource ordering & situation reporting
- Staff deployed to assist with sheltering
- Arranged mental health crisis counselling
LEMSA & RDMHS Response

- Assisted MHOAC with situational reporting & regional resource ordering
- Provided regional EMS response coordination
- Ensured adequate EMS resources available for other calls in surrounding areas
- Monitored hospital impacts
Continued Incident Activities

- Medical-Health & OES Situation Reporting
  - Recovery operations lasted 7 days

- Sheltering activities
  - 7 students sheltered overnight

- Mental Health Crisis Counseling
  - Assisted with family reunification
  - Accompanied surviving students on return trip home
Challenges

- ICS position vests not utilized
- Multiple different types or triage tags utilized
- Patient tracking issues
  > Names not documented on log
  > Hospital HIPPA concerns
  > Bus roster delayed & inaccurate due to last minute changes
All ALS units required to carry/utilize ICS vests

Utilization of similar triage tags

Standardized patient tracking sheet

- Field personnel required to document patient name prior to transport whenever possible
- Process for timely data submission to LEMSA, RDMHS and MHOAC
- Evaluated different electronic patient tracking systems but have not implemented due to various technological challenges
Oroville Dam Spillway Evacuation Incident

February, 2017
Oroville Dam Overview

- Earth-fill embankment dam on Feather River
- Tallest dam in the U.S. (770’ high)
- Impounds Lake Oroville
  - 2nd largest man-made lake in CA
  - Storage capacity: 3.5 million+ acre-feet
  - Surface elevation capacity: 901’
January 31

- Lake tops 855’
- Dam releases 12,500 – 20,000 cfs

February 3 – 6

- Multiple storms cause DWR to increase releases to 50,000 cfs
- Lake elevation: 849’
February 7

- Releases increased (target - 65,000 cfs)
- 12:00 pm: large hole develops in spillway & releases stopped
- 100,000+ cfs inflow causes lake to rapidly rise (topping 862’
February 8 – 10

- Spillway releases resumed, up to 65,000 cfs, then reduced to 55,000 cfs
- DWR says releases of 55,000 cfs should prevent emergency spillway use & that there is no danger to the public
- Lake level tops 890’ (10’ from full)
- February 11
  - Lake tops 901’ & water begins spilling over emergency spillway (1st time since 1968 completion)
  - Main spillway releases continue at 55,000 cfs
  - DWR reiterates there is no danger to the public
February 12

- 3:00 am: Lake level peaks at 902.59’ with water still running down emergency spillway
- 12:00 pm: DWR describes situation as “stable”
- 3:00 pm: Gash erodes into the hillside below emergency spillway cutting back toward weir
  - Catastrophic spillway failure could release ¼ million+ acre-feet of water down the Feather River
- Main spillway releases increased to 100,000 cfs to relieve pressure on emergency spillway
February 12 ~ 4:30 pm

Butte, Sutter & Yuba counties order immediate mandatory evacuations of 180,000 residents

- Official: This is an evacuation order. Immediate evacuation from the low levels of Oroville and areas downstream is ordered.

- Official: Sutter County OEM immediate evacuation ordered for Live Oak, Yuba City, Nicolaus & all communities Feather River Yuba City basin.

- Official: ALERT!!!! Evacuation ordered for all Yuba County on the valley floor. Travel safely.

US NATIONAL WEATHER SERVICE FLASH FLOOD OROVILLE MAP

As per CA Department of Water Resources:
• Officials now anticipate a failure of the Auxiliary Spillway at Oroville Dam within the next 60 minutes.
• Residents of Oroville should evacuate in a northward direction such as towards Chico.

fb.me/8fsrFz1Vl
Medical & Health Response

- EMS, Hospitals, LEMSA, MHOACs & RDMHS received evacuation notice simultaneous with the public

- Multiple healthcare facilities located in the evacuation zone
  - Acute care hospitals
  - Skilled nursing facilities
  - Assisted living/residential care
  - Other medically fragile individuals
Other issues:

- Weekend (Sunday afternoon)
- EOCs in evacuation zone had to be relocated
  - Initial information sharing limited & inconsistent
- Inadequate facility evacuation plans
  - Residential care planned to evacuate to hospitals
  - Multiple SNFs lacked adequate transportation
- Significant traffic issues due to evacuation
1 – Oroville Hospital
   › 133 acute care beds

2 – Orchard Hospital
   › 24 acute care beds

3 – Rideout Regional Medical Center
   › 221 acute care beds
Medical & Health Response

- Required significant EMS, Hospital, LEMSA, MHOAC & RDMHS coordination (with limited & frequently changing information)
  
  > Orchard Hospital evacuated (single story)
  
  > Oroville/Rideout patients moved to higher floors
  
  > 911 EMS traffic diverted from all 3 hospitals
EMS & patient movement activities

- EMS staff callback & use of regular mutual aid
- 9 ASTs in the area within 6 hours (11 total used during event from OES Regions II, III & IV)
- 911 calls continued (transports to out of area hosp.)
EMS & patient movement activities

- First 36 hours of evacuation order
  - 527 medically fragile patients relocated
  - 30 acute care patients moved to alternate hospitals

- Evacuation order duration (48 hours)
  - 315 EMS 911 calls
  - 228 EMS 911 patient transports (up to 3X longer time on task due to traffic & hospital closures)
Medical Evacuation County Destinations

- Alameda
- Butte
- El Dorado
- Nevada
- Placer
- Sacramento
- Shasta
- Solano
- Sutter
- Yolo
- Yuba

Furthest North:
Fall River Mills: 175 mi.

Furthest South:
Hayward: 140 mi.
Other activities

- Multiple public shelters in several counties (including medical sheltering activities requiring EMS support)
- Medical resources (oxygen, dialysis, etc.)
- Patient tracking and reunification
Communications

- EOC’s, OES, MHOACS, state agencies, EMS, hospitals, SNFs, residential care, assisted living

- ~100 SNF patients initially relocated to Beale AFB medical shelter had to be re-distributed 24 hours later

- Duplication of efforts

- Subsequent AST ordering delays
Challenges

- 911 patient destination coordination
- Rideout Regional Medical Center new helipad & new construction

Repopulation Issues:
- Facility Repopulation Plan requirements
- Medical transportation
Challenges

- Reimbursement Issues

- Routine MCI events (managed with local/S-SV EMS jurisdictional mutual aid resources) do not involve an expectation of reimbursement from the requesting OA by the EMS mutual aid provider.

- Large/extended events (including requests for ambulance strike team resources, patient evacuations, etc.) must be requested/authorized by an appropriate OA entity (OES/EOC/MHOAC). The requesting OA maintains financial responsibility for any EMS resource utilization costs incurred in these situations.