

# Livingston HealthCare Mass Casualty Incident 6/18/19

## Objectives

- \* Define MCI
- \* Complexities of evaluating ED Surge Capacity
- \* Understanding the value of an efficient interpreter system
- \* Understanding the components of retrospective analysis of an MCI in developing an AAR

## ★ Mass Casualty Incident

- \* Mass Casualty Incident:
  - \* Any number of casualties that exceed the resources normally available from local resources.
  - \* Based upon available resources, number of injuries and severity of injuries
  - \* No situation or finite number of patients
- \* High Volume Flux
  - \* LHC ED Capacity Management Policy



## ★ Determining Surge Capacity

- \* Surge Capacity
  - \* Lots of tools available
  - \* As unique to each facility and community as a fingerprint to a human
    - \* Space
    - \* Staff
    - \* Supply
- \* High Volume Flux
  - \* LHC ED Capacity Management Policy

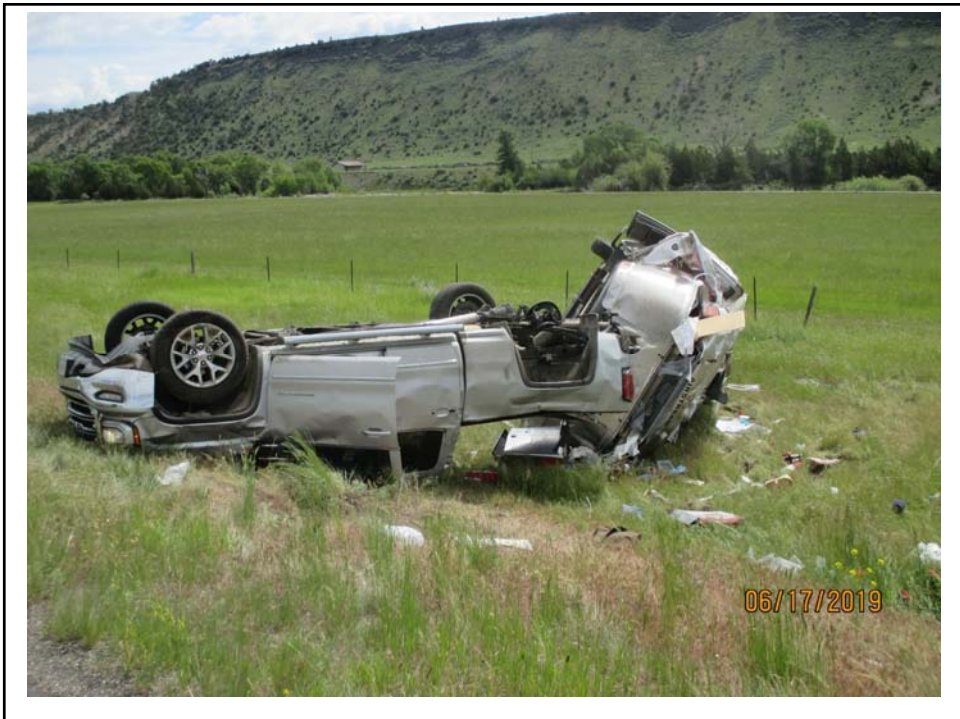
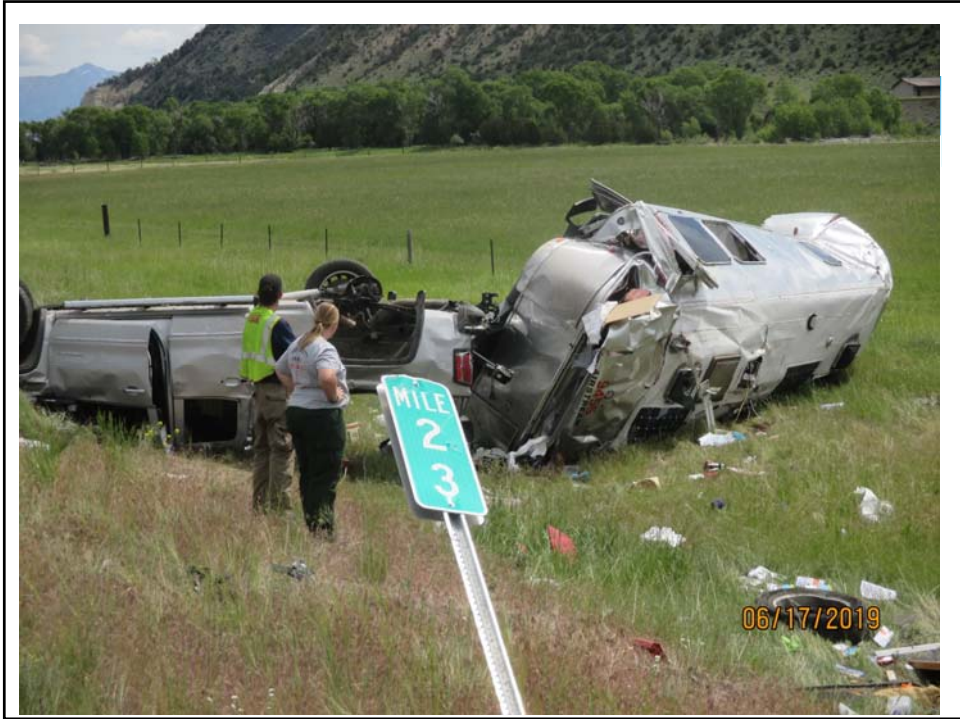
## Baseline Data

- \* LHC ED
  - \* 9 Beds
  - \* 1 Physician
  - \* 2 RNs
  - \* 1 ED Tech
  - \* Typical volume: 20 patients /day
- \* Livingston EMS
  - \* 3 Paramedics on duty
  - \* 3 Additional available (Admin)
  - \* 4 Ambulances



## Preliminary Details

- \* Call to dispatch @ 09:41 of a head-on MVC approximately 26 miles south of Livingston
- \* Road conditions were bare and dry and crash occurred on a straight away
- \* A van passed a pickup towing an Airstream trailer.
- \* Driver of van realized that they didn't have enough room to pass and pulled back to the driving lane to avoid a head on collision, clipping the pickup
- \* Both vehicles lost control and rolled





## EMS

- \* One ambulance was en route to Bozeman with a scheduled transport
- \* One ambulance was en route to Billings with an urgent transfer
- \* Helicopter out of Bozeman was requested to the scene by initial responders. Unable to launch promptly so rotor from Butte responded. Advised to land at LHC due to delay.

## EMS

- \* First responding ambulance blew a left front tire while en route to the scene
- \* Second responding ambulance picked up the crew of first ambulance and proceeded to the scene
- \* Paradise Valley EMS was dispatched to scene
  - \* Basic EMT stocked ambulances

## EMS

- \* ED Physician on scene assisting with triage
- \* Bilingual bystander assisted with communication
- \* A mix of less and more injured patients were transported in each ambulance

## Notifications

- \* Approximately 1015 the ED was notified of a multi-victim MVC south of Livingston
- \* Reported as a head on collision with approximately 9 victims. Four victims thought to be critically injured. Age of victims unknown
- \* A Level 1 Trauma Activation was initiated
  - \* Includes notification of ancillary and surgical services
- \* Subsequent calls from the field indicated the following
  - \* 9 Adult victims
  - \* 7 Victims were not English speaking

## Meanwhile in the ED

- \* Resources were gathered
  - \* ED Physician and General Surgeon
  - \* 18 RNs
    - \* 7 ED Trained RNs
    - \* 4 OR RNs
    - \* 1 House Supervisor
    - \* 2 ICU Trained RNs
    - \* 4 Med/Surg Trained RNs
  - \* 3 ED Techs
  - \* 2 CRNAs

## Meanwhile in the ED

- \* 3 Registration Clerks
- \* 5 Imaging Techs
- \* 3 Respiratory Techs
- \* 2 Lab Techs

Nearly 40 staff members congregated to receive 9 victims  
Additional helicopter on standby



## Teams

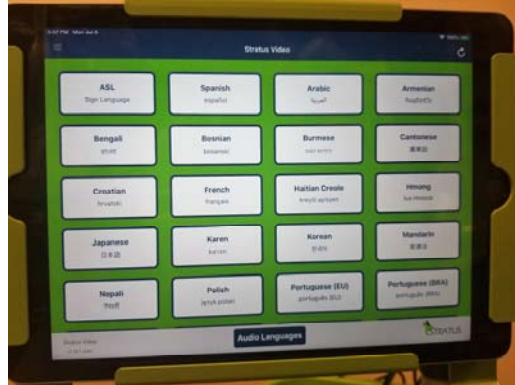
- \* Goal was to have a team of 2 nurses and 1 tech for each patient at time of arrival
- \* Registration Clerk entered each patient into Cerner, generated labels and wrist band just prior to arrival based on generic naming system (Doe, Sam)
- \* Bed placement planned for each patient written on large white board in ED based on scene information
- \* Physician to bedside of most critical patients upon arrival based on EMS communication

## Overview

- \* Both vehicles rolled (1 van, 1 pickup)
- \* All patients belted
- \* Ages of patients were 60-69 yrs
- \* 7 of 9 victims were non English speaking

## ★ Breaking Down Language Barriers

### \* 3 Stratus Interpreter Systems



## Patient Arrival

### \* Trauma patient arrival times –


- \* 1044
- \* 1046
- \* 1048
- \* 1048
- \* 1102
- \* 1102
- \* 1104
- \* 1106
- \* 1107

1103 Patient who is short of breath  
(admitted after evaluation)


## Injuries / Disposition

- \* **Patient #1 (69 yr old female)**
  - \* Complex laceration to right frontal/temporal area
  - \* C2 vertebral fracture
  - \* Discharged home
  
- \* **Patient #2 (74 yr old female)**
  - \* Right second rib fracture
  - \* Complex C4-6 vertebral fracture – Rx with rigid collar
  - \* Fx T3 and T4 thoracic vertebra with burst component
  - \* Sternal fracture, possible small epicardial hematoma
  - \* Left 4<sup>th</sup> rib fracture
  - \* Tiny right pneumothorax
  - \* Posterior left acetabular fracture
  - \* Transfer to Billings Clinic; DC 6/25 Anterior Cervical Discectomy and Fusion; T2-T6 fusion

- \* **Patient #3 (60 yr old female)**
  - \* Right thumb fracture
  - \* Abrasions
  - \* Pelvic Contusion
  - \* Discharge home
  
- \* **Patient #4 (60 yr old female)**
  - \* C2 and C7 vertebral fractures
  - \* Multiple right sided rib fractures
  - \* Small right-sided pneumothorax
  - \* Pelvic fracture with small pelvic hematoma
  - \* Right clavicle fracture
  - \* Transfer to Billings Clinic; DC 6/24 rigid collar, walker



- \* **Patient #5 (69 yr old male)**
  - \* Right sided chest wall contusion
  - \* Discharged Home
  
- \* **Patient #6 (63 yr old female)**
  - \* Right 9<sup>th</sup> rib fracture
  - \* Left thumb fracture
  - \* Discharged Home



- \* **Patient #7 (65 yr. old male)**
  - \* Left shoulder abrasion, contusion
  - \* Discharged home
  
- \* **Patient #8 (62 yr. old female)**
  - \* Left sided displaced rib (1-8)fractures with pneumothorax
  - \* Left 9<sup>th</sup> rib fracture
  - \* T4 Compression fracture (old vs new)
  - \* Right clavicle fracture
  - \* Admitted to LHC ICU DC 6/24 Chest Tube, epidural, sling

- \* **Patient #9 (69 yr. old female)**
  - \* Right clavicle fracture
  - \* Facial contusion
  - \* Discharge Home

- \* During the event, the ED physician called at least 2 huddles to ensure everyone and their patients were having their needs met and to answer question / address concerns
- \* ED was at capacity for the next 8 hours (trauma and non-trauma patients)

## What went well?

- \* Ample lead time communication allowed LHC to gather appropriate resources prior to patients arriving
- \* Initial briefing and plan to coordinate patient care and flow
- \* Availability of additional staff
- \* Able to continue normal operating procedures
- \* Patients were properly identified despite multiple barriers
- \* Availability of a translator system

## ★ Developing an Effective After-Action Report

- \* Talk to EVERYONE who was in the building the day of the event
- \* Involve all levels of staff
- \* Tap into the multitude of resources that are available
  - \* National Events
  - \* MDPHHS
- \* Coordinate with local entities to strategize for the future
- \* Build a plan that works for your facility

## What could we do better next time?

- \* Numerous RNs were attempting to find names and phone numbers for activation and to request additional help.
  - \* Acute care scheduling system has a mechanism to send a mass text to staff- communication to House Supervisors and managers
  - \* Statewide system will be available for testing and implementation soon (Juvare). Emergency Preparedness Coordinator responsible to institute when available.

- \* Improved scene information by having direct communication with the ED physician rather than second/third hand via dispatch or ED staff
  - \* RN and ED physician education and plan going forward
  - \* Continue to utilize white board in central ED area

- \* **Better initial pseudo ID generation to avoid confusion**
  - \* Utilize a format that was developed after the Las Vegas event using LIVMCI#, followed by preset list of nondescript items. (LIVHCone, alpha)
  - \* Pre-written ID bands will be available for registration staff
  - \* All hard copy patient documents will be labeled with initial ID label and proper patient ID label
  - \* Initial ID band to remain on patient until discharge

- \* **Physician order entry, obtaining CT scans, results and follow up assessments took more time than was ideal. Had multiple patients been unstable, the time involved with orders, workup and throughput would have placed us in jeopardy, the workload would have overwhelmed the physician**
  - \* Enlist other physicians who are in house, or at least put them on stand-by in case more help is needed in the ED
  - \* Evaluating physician should consider order entry using bedside computer rather than running back and forth to the office. Downside is having to sign into each computer
  - \* Consider utilizing a scribe to take verbal orders at bedside



- \* Establishing communications point person was not done ahead of time. Communication of results to family / friends, and patient disposition was made more difficult as a result
  - \* Utilize Social Services, Case Management and Clergy early in the event to assist with communication, transfer arrangements and family re-unification

- \* Consider instituting Incident Command
- \* Patient encounter in Cerner was interrupted just as CT was going to start for one patient due to merging of pseudo name and actual patient name
  - \* Registration will have eyes on patient as they merge the name of patient in the future
- \* Improve triage of patients needing CT exams based on condition
  - \* Physician communication to CT tech for sequence in which patients should go to CT

- \* If more than 2 unstable patients on scene, consider flight of 1 or more direct to another facility to provide best resources to all. This would require more direct communication from the scene with the ED physician
- \* How could we reproduce this successful response if it occurred at night?

- \* Hospital employees continued to support and assist displaced victims over the next few days following the event in numerous ways

