

Major Trauma Incidents in the Rural Environment



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UR TRAUMA Objectives today

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- Discuss the multi patient incident in the rural community
- Review the types of incidents and how care and approach change for each
- Discuss relevant cases from western NY and lessons learned
- Discuss best practice in triage
- Review scene and hospital operations during a multi patient incident

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UR TRAUMA Acknowledgments

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UR Trauma Team & Finger Lakes Trauma Region
 Anne D'Angelo & Eileen Spezio
 AMR Rochester
 Branchport / Keuka Park Fire & Yates County
 Emergency Serv.
 Google Images

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Give me six hours to chop down a tree and I will spend the first four sharpening the axe.
(Abraham Lincoln)

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The rural challenge



- Nearly 60% of all trauma deaths occur in rural areas
- Despite only 20% of the population lives in these areas.
- Adjusting for risk: the rural MVC death risk is 15:1 vs Urban MVC

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Rural EMS & Community Hospital considerations

- Limited resources
- Long treatment and transport times
- Delayed surgical care or advanced trauma care
 - Bleeding
 - Hypothermia
 - Crystalloid resuscitation
- Progression of injuries
 - TBI



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CBRNE Events

- Chemical
- Biological
- Radiological
- Nuclear
- Explosive



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Blast injuries

- Unlike bleeding ...
- The obvious injuries are rarely the most severe injuries.
- Anyone with ANY blast related injuries should be evaluated at a trauma center.
 - "I'm okay "...its just my ears"
 - "Its just a burn"



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Environmental



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Scene Operations for the Major Trauma Incident



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UR TRAUMA General Approach

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- Recognize scope and severity of incident
- Establish unified command and communication
- Determine initial patient count
- Perform triage and communicate
- Request and manage resources
- Develop appropriate command staff
- Reevaluate incident
- Communicate
- Support survivors & responders

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UR TRAUMA Best practices

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- A functional command staff that improves patient triage, allocation of resources, timely transport and prepared care delivery at the next step IS PATIENT CARE
- However, do not sacrifice direct patient care.
- It's okay to request resources for the point of filling command positions
- It's okay to assign command positions pre-arrival
- It's okay to use non-EMS participants in Medical Branch positions
- It's is okay to request resources you are not absolutely sure you need

"I'd rather be looking at it than looking for it"

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“waves” of victims

- Ambulatory
- Fleeing victims
- Injured victims
 - Injured by weapon / device
 - Emotional injury
 - Injury of crowd / jump
- Trapped victims
- Hiding victims
- Relocated victims

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“Sift and Sort”

- Term used to describe the initial actions of the provider confronted with multiple injuries
- Sifting & Sorting is not triage.
- Formal Triage is performed by a triage officer
 - Categories of patients:
 - Walking Wounded (no tag) (GREEN)
 - Litter (YELLOW)
 - Immediate (RED)
 - Expectant

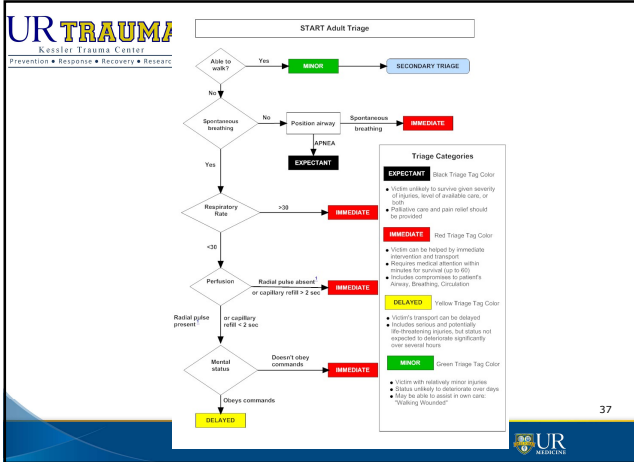
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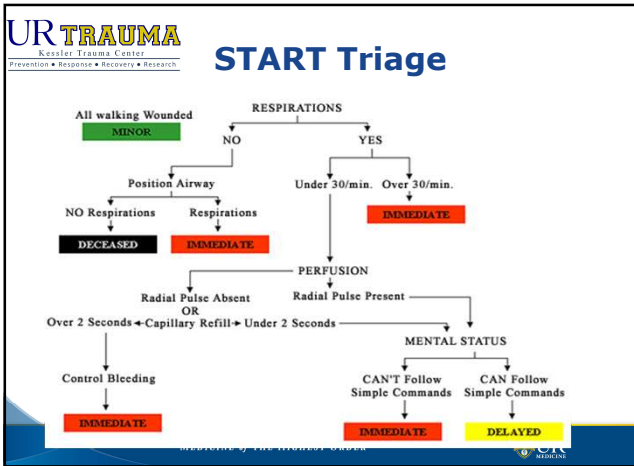
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Triage

- Triage is a dynamic process
- **Initial** : scope , estimate patient count and incident type
- **Primary**: Sorting : B / R / Y / G
- **Secondary** : if , in a treatment area may be re-triaged
- **Tertiary** : “ Parking lot” arrival at hospital
- Quaternary :

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Command Organization

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Unified Command


- Medical Branch / Group
 - Medical Branch Aide ★
 - Triage Officer
 - Medical Communication Coord.
 - Treatment Group Leader ★
 - Transport Group Leader ★
 - Medical Staging ★



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FIRE AND RESCUE DEPARTMENTS OF NORTHERN VIRGINIA FIREFIGHTING AND EMERGENCY OPERATIONS MANUAL

EMS Multiple Casualty Incident Manual

Second Edition

EMS Multiple Casualty Incident Manual, Second Edition Final Version, May 2013


APPENDIX B: NOVA QUICK REFERENCE GUIDE FOR MCI


UNIT	MCI PRIORITIES (Assigned to EMS - SEE NOTES)
1st Suppression Unit	Triage Unit Leader - Initiate and Complete Primary Patient Triage
2nd Suppression Unit	Treatment Unit Leader - Establish and Set-up Patient Treatment Area(s) Establish & announce PIP
3rd Suppression Unit	Assume Air/Ground Coordinator Reinforce Transport Loading area
4th Suppression Unit	Report to Triage Unit Leader
5th Suppression Unit	Report to Treatment Unit Leader
6th Suppression Unit	Report to Staging or Establish same, if not already done
All Other Suppression Units	Report to Staging
1st EMS Transport Unit	Establish Transport Group & Transport Recorder Establish and announce PEP
All Other EMS Units	Report to Staging
1st EMS Supervisor	Establish EMS Branch (then Med. Grp. Sup. once relieved)
2nd EMS Supervisor	Assume Transport Group Supervisor
3rd EMS Supervisor	Assume Treatment Unit Leader
1st Battalion Chief	Assume EMS Branch Director

MCI NOTES: MCI assignments are based on the ability of the IC to assign apparatus to EMS Branch based on incident priorities. In absence of direction from IC, units responding on the MCI Alarm will assume these roles.

Suppression Unit = any engine, truck or squad
 PIP = Patient Intake Point (From IDLH to EMS Patient Treatment Area or Areas)
 PEP = Patient Exit Point (When the ambulance exits the scene)

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Check sheets / Job Action Sheets / Tactical Worksheets

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- Fire Service : Support Chief / Aide
- EMS : Pit Crew CPR / Intubation checklist
- Hospital : Timeouts / Pause / Checklist



Using a "checksheet" should not occur the first time you are having an event
 The tools should be pre-agreed items that can be executed by the Aide/ support chief

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Mass Incident Tactical WS

Medical Branch Aide JAS

- Determine ops Channel
- Roll Call units on Ops Channel
- Announce Command and Staging location
 - Triage Unit Leader _____
 - Treatment Unit Leader _____
 - Med Comms _____
 - Staging Unit Leader _____
- Announce Initial Pt Count
- Deliver medical progress report
- Update resource request


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Role of EMS : Triage, Treat. Transport, Transport, Transport...

- EMS units should be requested functional groups / i.e in Task Forces
- Staged in task forces
- EMS crews should to STAY WITH THEIR UNIT, unless moved up into other role
- Multiple **Yellows** patients may go in one unit



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Treatment Group

More likely to be needed now and in the future than in historical incidents

Important to reassess
TBI and GCS
Chest Seals,

Treatment time should brief and not extend overall scene time

Treatment area resources should not cannibalized transport resources



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T.H.R.E.A.T.

- Threat suppression
- Hemorrhage control
- Rapid Extrication to safety
- Assessment by medical providers
- Transport to definitive care



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The Big Picture

- M** : massive hemorrhage
- A**: Airway
- R**: Respirations :
 - Seal chest wounds/ vent tension pneumothorax
- C**: Circulation
 - Feet up , head down
 - IV Fluids
- H** : Hypothermia / Head inj.



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Pre-Hospital to Hospitals Communications

Field to receiving hospital communication is vital to provide an incident overview to affected hospitals.

Emergency Departments are influenced by :

- Increased volumes
- Higher acuity
- Rapid transfer of information along social media and news that can be helpful or misleading
- Greater utilization of available in-hospital resources and less resources "on standby"



EMS communication has been influenced by :

- Smaller crew sizes
- More pre-hospital care & technology

4/14/2021

Finger Lakes Regional Trauma Advisory Committee

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UR TRAUMA Transportation Group

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- Depending on system and scope may need communication with hospital systems, Pre-Hospital Physicians of Med-Com Officer
- For smaller scale incidents may be non-EMS provider (LE)

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- Pre-hospital physicians are valuable on -scene resource for advanced decisions making
 - The expectant patient
- Pre-hospital destination decision making
- Scene to hospital communication
- Scene clearance of minor injuries

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Command and Control



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Best Practices

- Avoid incident creep
- Stay ahead of the problem (care and transport)
- Don't let the incident control you , you should control it
 - Request adequate resources (+)
 - Request, assign and utilize command staff
 - Maintain span of control
 - Communicate well

Use and empower the use tactical worksheets and checklist

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Care and patient movement is labor intensive



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Resource Management

- Transport Units must have verified entrance and egress routes





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Secondary / Additional staging NIMS Type I / II

- There will be EMS needs after / during the event:
- building clearance
- reunification centers
- Rehab
- Medical emergencies.
- On scene accidents
- Local incidents



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Medical Task Forces

Incidents up to 6 patients

Dispatch:

- 1 Medical Task Force
 - 3 ALS Transport
 - 1 BLS Transport
 - 1 EMS Capable Fire Apparatus

Notify:

- Coordinators Group


Incidents with 7-12 patients

Dispatch:

- 2 Medical Task Forces
 - 6 ALS Transport
 - 2 BLS Transport
 - 2 EMS Capable Fire Apparatus
- Respective EMS Battalion Coordinator
- Car 900 and Car 906


Notify:

- Coordinators Group
- EMS DO Group
- County Public Safety Director


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PFA of the survivors



• Responders must be aware of the stages of grief

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Resiliency

UC Irvine Health
Center for Disaster Medical Sciences
University of California, Irvine • School of Medicine

EMERGENCY MEDICAL SERVICES AGENCY
LOS ANGELES COUNTY

Building Responder Resiliency:

Welcome to Anticipate, Plan and Deter

LA County EMS Anticipate Plan and Deter Training
2015 Quick Start Version(30 minutes)

Developed by
Merritt Schreiber, Ph.D.
Associate Professor
Department of Emergency Medicine
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UC Irvine School of Medicine

LA County EMS Agency Project Officer
Sandra Stark Shields, LMFT
Disaster Program Manager
LA County EMS Agency

Building Your Positive Coping Plan

What works for you?:

- Everyone has different ways in which they cope with stress
- Please list some of these strategies now: your menu
- Consider limiting your exposure to media reports, focusing beyond the short term, taking frequent short breaks whenever possible and practicing "Listen, Protect and Connect" Psychological first aid with patients and co-workers
- Identify positive experiences including those that give a sense of mission or purpose:
 - "making a difference"
 - "being there for those that need us"

Your Social Support Plan

Who is in your social support system? List people who can support you and who you can provide support for during and after a disaster.

1. _____
2. _____
3. _____
4. _____

Your Positive Coping Plan

Everyone has different ways of coping with stress. What positive ways of managing stress work best for you every day? What positive ways of managing stress do you think will work for you following a disaster? Strategies you might consider include limiting your exposure to media reports, coping beyond the short term, taking frequent short breaks. List your healthy coping goals here.

1. _____
2. _____
3. _____
4. _____

Your Resilience Factors

People often find that there are some positive things about surviving a disaster. The example people might list could be about being able to "make a difference" when their community needs their help. Positive resilience factors help you as a healthcare provider to cope better with the stresses associated with responding to a disaster in your facility or community. Write down the positive factors that might give you a sense of mission or purpose following a disaster.

1. _____
2. _____
3. _____
4. _____

EMERGENCY MEDICAL SERVICES AGENCY
CENTER FOR DISASTER MEDICAL SCIENCES
UNIVERSITY OF CALIFORNIA, IRVINE • SCHOOL OF MEDICINE

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Case Study

Branchport, NY Buggy Accident

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7 Transported patients


- 4 by HEMS
 - 33yo Female : altered mentation with open scalp injury
 - 33yo Male : altered mentation with open scalp injury
 - 6 month old : soft tissue injuries ; initially with minimal responsiveness ; returned to baseline on scene
 - 7 year old Female
 - Rapidly declining GCS to 12 to 8 to 7 : RSI for airway protection
 - Open leg fractures with arterial hemorrhage : TK applied by LE
- 3 by GEMS
 - Transported 30 minutes toward TC, met with additional fire / EMS units to continue transport to TC

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Lessons learned

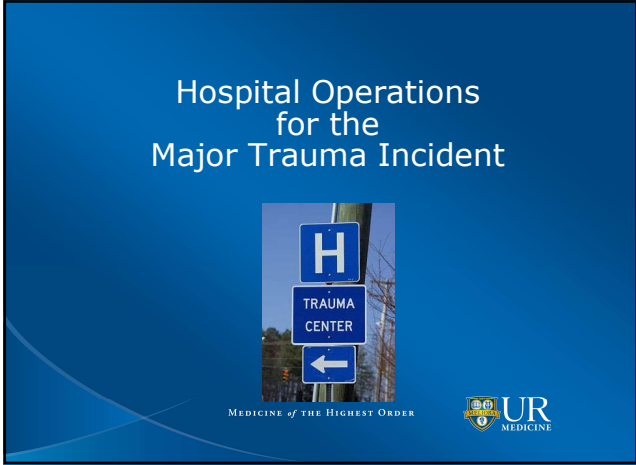
- Excellent escalation of resources
- Bystander / initial responder actions saved lives
- Transport decision making focused on eventual goal of transfer to definitive care / specialty care center
 - Operated in the sufficient care zone
- Need for responder care
- Pre-Hospital communication can be challenging
- Trauma Center PIPS
 - Focused review of plans across age ranges
 - Plan for multi team surgery in the setting of a major incident

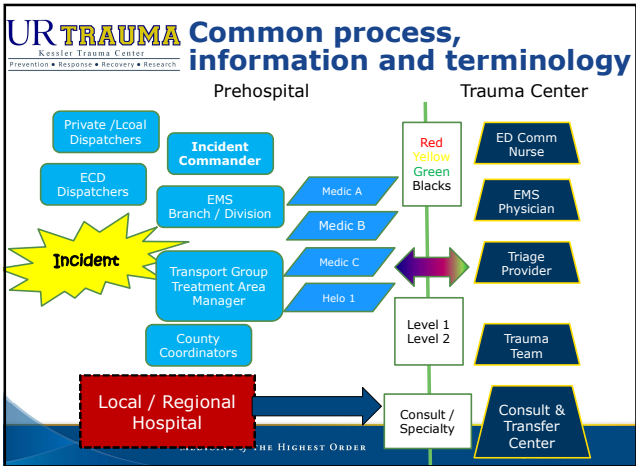
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Patient Intake


Community hospitals

- EMS Liaison
- When does "Closest hospital" exceed capacity to maintain sufficient care
- Patient identification systems for multiple unidentified
- Ability to request outside resources to a community hospital



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Trauma Surges in the Community Hospital

- Triggers for Surge Plan Activation
 - 2? 5? 10 ?
- Common Challenges
 - Airway and chest tube supplies and procedures
 - Ventilators
 - Maintain staff in a leadership roles to manage incident
 - Ability to call in additional help



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Hospital Operations

- Hospital Access
 - Parking, security, lockdown
- Discharge of available patients
- Freeing up critical services (OR, Imaging)
- Surges of families & companions
- Communication to staff
- Patient tracking
- Performing quaternary triage
- Expectant Care / companionate care
- Establishing alternative care spaces
- Keeping resources on deck for "normal" emergencies

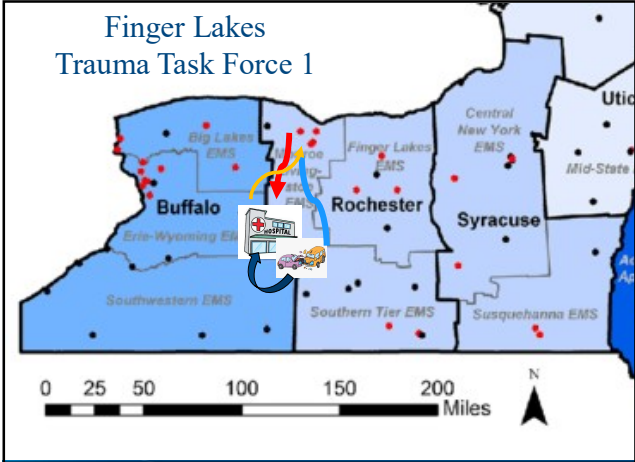


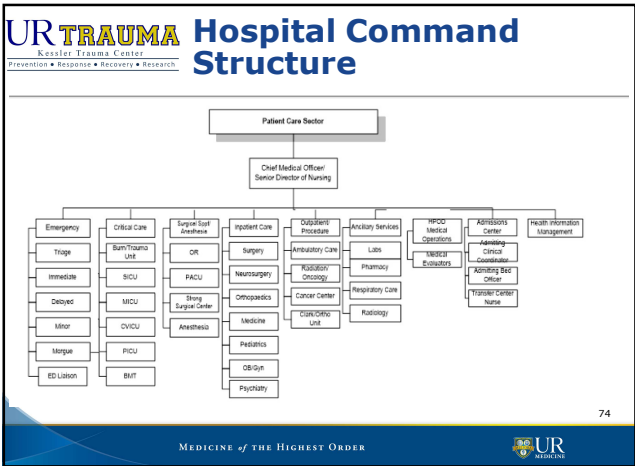
The Sunrise Hospital & Medical Center emergency department after caring for the victims of the Oct. 1 mass shooting in Las Vegas.
www.acepnow.com/article/emergency-physician-victim-share-experiences-las-vegas-mass-shooting/acep_0218_pg12u/?singlepage=1&theme=print-friendly

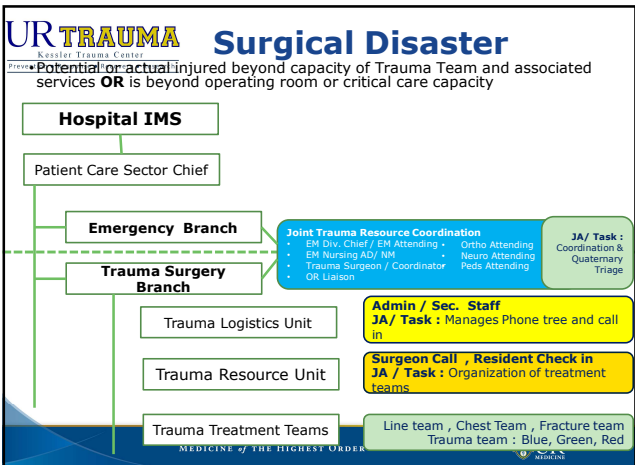
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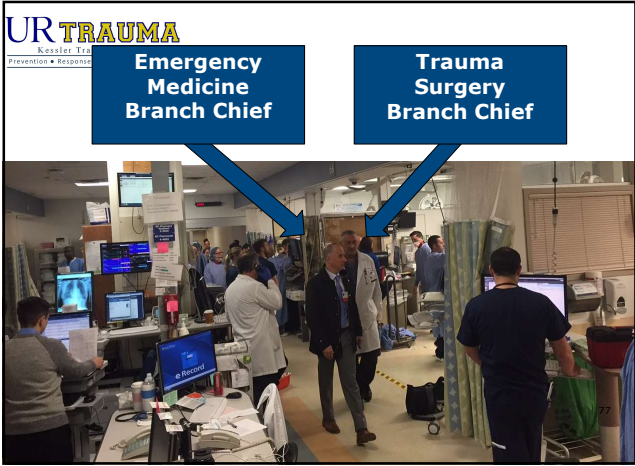


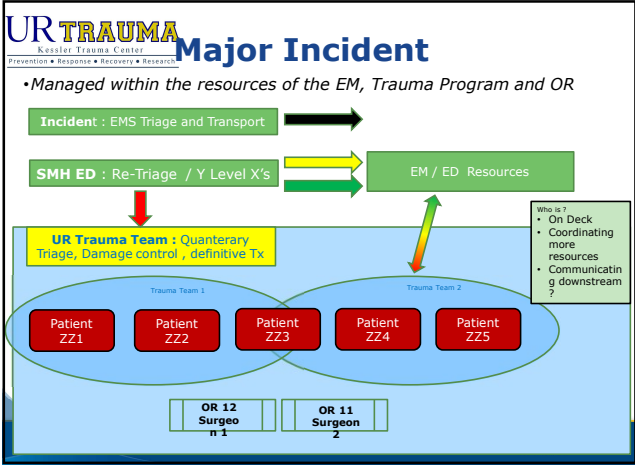













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Care Delivery

- Keep to ATLS principals
- Create and organize functional teams
 - Trauma teams 1, 2, 3
 - Line Team, Airway , splint team
 - FAST physician
- Coordinate with
 - Imaging science
 - Blood bank.
 - OR
 - Critical Care



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Briefings and Coordination





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UR MEDICAL

After Action Report
Mass Casualty Incident
Sixth Street Shooting
September 19, 2020
Rochester, New York



MEDIA SHOOTING IN ROCHESTER

- 2 People Are Dead
- 3 People Are Injured
- Multiple Gunshot Victims

16 SHOT, 2 KILLED IN MASS SHOOTING

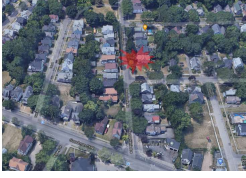
BREAKING NEWS

BREAKING NEWS

UR MEDICAL


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Incident Summary



At approximately 12:28 a.m. on September 19, the Rochester Police Department responded to calls of gunfire at a neighborhood near the Rochester Public Market and arrived to find about 100 people running down the street from the gunfire.

A total of 22 patients were eventually identified on scene or presented to hospitals. This included the 2 deceased and 4 patients who did not require transportation to a hospital. Ten ambulances responded to the scene or staging.



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Incident Summary (continued)

All units who brought patients to the Regional Trauma Center, (University of Rochester, Strong Memorial, Kessler Trauma) called in to the ED communications nurse using conventional cell call ins.

The patients brought to UR Trauma were :


- 0052hrs 23 yo GSW L Humerous : **went to the OR**
- 0054hrs 17 yo GSW Neck / Leg : **went to the OR**
- 0057hrs 17 yo GSW Abd / pelvis : **went to the OR**
- 0059hrs 22 yo GSW Abd : **went to the OR**
- 0108hrs 20 yo GSW to hand : d/c home
- 0109hrs 21 yo GSW to foot : d/c home
- 0117hrs 18 yo GSW graze wound to skull : d/c home
- 0126hrs 18 yo GSW graze wound to breast: d/c home
- 0204hrs 20 yo GSW to thigh: d/c home
- 0229hrs 30 yo GSW abdomen : **went to the OR**

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Lessons Learned

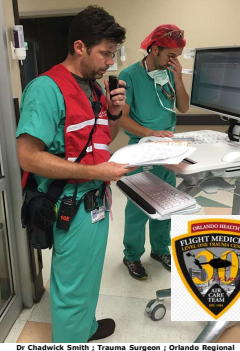
- Hostile events incidents can outpace the ability to build up and operate a well organized command system.
- Initial responder care is crucial to outcomes
- EMS units were escorted by LE , traditional perimeters of safety were unknown or undefined
- Triage and treatment coordination across a wide geographic areas can be challenging
- Response and hospital plans should have objective pre-defined activation triggers
- Pandemic and hostile event created unique challenges to operating a normal family center

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After the surge ... next steps


- Tertiary assessments & evaluation
- Second stage damage control interventions
- Critical care Coordination of additional procedures
- Family meetings



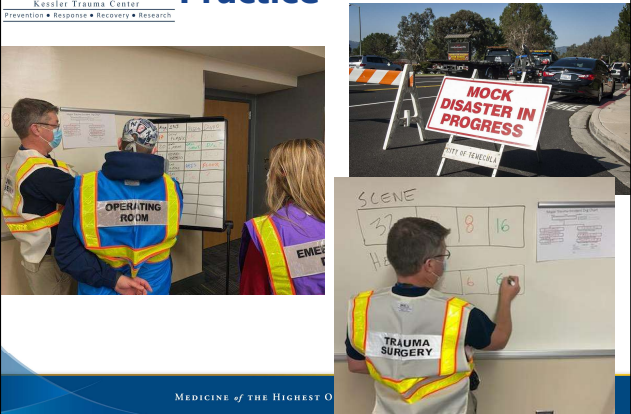
Dr Chadwick Smith | Trauma Surgeon | Orlando Regional

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Summary

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