

Objectives

- Discuss the challenges and inherent dangers of today's EMS environment
- Develop sound risk assessment and decision making for the incident environment
- Discuss strategies for implementing initial operations based on their risk assessment and decisions
- Discuss the impact of staffing levels

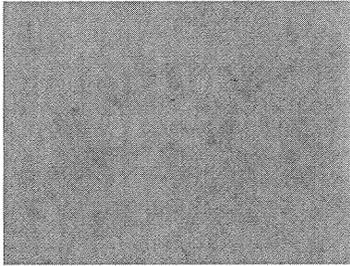
Influence Of Tragedy

There is no greater influence of change in the fire service than a line of duty death of a firefighter.

Yet, there is no greater tragedy than that of a fallen firefighter whose death prompted the passage of a safety policy which may have prevented his death.....

*Deputy Chief Ted Jarboe
1996*

That Was Then... This is Now



What We Do

- Make hundreds of decisions while weighing lots of factors with incomplete information in non-discretionary time environments
- Need to organize decision making in order to maximize successful outcomes
- Minimize the hazards associated with unpredictability
- The first in unit officers make or break the incident

Today's Environment

- Where are the threats?
- Most common:
 - Exposure to blood-borne pathogens
 - Injuries from lifting and moving patients
 - Wounds inflicted by violent patients
 - Injuries caused by traffic accidents involving ambulances

Are We Dying?

- Estimated 12.7 fatalities per 100,000 EMS workers
 - Death rates for police is 14.2
 - Death rates for firefighters is 16.5
- EMS worker LODD rate is more than twice the national average for all workers (5.0)



How Are We Dying?

- Of 114 LODDs examined
 - Ground transportation crashes: 67
 - Air ambulance crashes: 19
 - Cardiovascular and CVAs: 13
 - Homicides: 10 (most of them shootings)
 - Other: 5 (e.g. needlesticks, electrocution and drowning)



Changing Environment

- What has changed in the EMS environment over the years?
 - Public perception of EMS
 - Hollywood influence = expectations?
 - Fiscal situations
 - Recruitment, retention
 - Social media
 - Increasing incident complexity
 - Changing standards



Size Up

- Sense of urgency due to time critical therapies
- Avoid tunnel vision
 - May overlook safety precautions
 - Lack of recognition additional resources are needed
- Every incident
 - Scene safety
 - BSI precautions
 - Proper PPE
 - Mechanism of injury or nature of illness
 - Number of patients
 - Resource needs
 - Triage

Situational Awareness

- Awareness of what is happening around you
 - Understand how information, events, and your own actions impact the incident
- Lack of awareness
 - Identified as one of the primary factors in accidents attributed to human error
- Critical in industries where information flow is high and poor decisions lead to serious consequences

Situational Awareness

- Difficult skills to master
 - How to teach it
 - How to obtain it
- Perceptions versus reality
- Comprehension and forecasting
- Informed decision-making and calculated and formulated risk
- More than "Size-Up"



Risk Assessment

- Take all feasible measures to limit or avoid risks
- The evaluation of risks must be performed on every incident and training event
 - It is a continuous process for the entire duration of each incident or event
- If conditions change, and risk increases, change strategy and tactics



Controlling Risk

- Influencing factors
 - Nature of work conducted
 - Size of the workforce
 - Geographic location and the types of hazards encountered
- Can the risk be controlled through other strategies?
- Can you manage your activities and resources in such a way so that if an incident occurs, it does not affect the entire organization?

4

Controlling Risk

- Gathering information
 - When does it start
 - What senses are you using
- Your approach to the patient
 - Perceived barriers
 - Actual barriers
- Being prepared
 - Training
 - Protocols, policies, procedures
 - Ready to respond
 - Having the right tools when you need them



5

Controlling Risk

- Choosing the right response
 - Direction
 - Mode of travel
- Weigh the benefits and risks
 - Situational dependent
 - As research increases, we learn some interventions we once thought were good are contributing to poor patient outcomes

60% of ambulance crashes and 58% of crash fatalities occur during runs using lights and sirens
22.2 injuries per 100,000 runs with lights and sirens
1.46 injuries per 100,000 runs with normal driving

Dynamic Risk Assessment

- Process of risk assessment performed in an evolving environment
- Why is it hard?
 - Confronted with competing or conflicting incident priorities
 - Confronted with demands or distractions
 - Occurs before essential information has been obtained



Dynamic Risk Assessment

- Two components
 - Risk recognition
 - Communication of risk
- Crew resource management (CRM)
 - All personnel must be able to recognize and appreciate the risks present at an incident
 - Concurrently they must be able to communicate what they see

Decision Making



- Methods of decision making control
 - Habit – “I’ve always done it that way”
 - Impulse – A sudden urge to decide to do something
 - Imitation – “Everybody else does it that way”
 - Default - You do nothing (It is still a decision)
 - Strategy - An informed and methodical process

19

Culture

- Normalization of deviance
 - Personnel performing adverse behaviors at the tactical level
- Engage in practices that place personnel at risk
- Divert from assignments
- Circumvent and deliberately use a work around and disregard risk assessment and incident action plans
- May “know” these risks but do we actually put them into a dynamic thought process?

20

Strategic & Tactical Considerations

- | | |
|---------------------------|----------------------------------|
| • Rescue | • Rescue (immediate threat) |
| • Exposures | • Assess (triage) |
| • Confinement | • Decisions (treatment) |
| • Extinguishment | • Actions (transport) |
| • Overhaul | • Recovery, Reporting, Readiness |
| • Ventilation and Salvage | |

Risk Assessment
Decision Making
Occupant Survivability
Fire Fighter Survivability

Risk Assessment
Decision Making
Victim Survivability
Provider Survivability



21

CASE STUDIES

**Case Study #1 –
Emergency Situation**

- Incident Overview
 - Call Type: Seizure
- Audio

23

Incident Key Components

- Initial request was for police to meet at the hospital
- Changed location to on scene due to patient becoming violent
 - Demonstrated situational awareness
 - Crew resource management
- Communications section immediately checked on unit's welfare

24

Case Study #2 – Life Threatening Situation

- Incident Overview
 - Call Type: Automatic Fire Alarm
- Audio



25

Incident Key Components

- Responded to an alarm
 - Typical and routine response situation
 - Alarm pulled by residents because of an assault situation
- Engine requested police
 - Location reported as front of the building
- Subsequent transmissions ask for police to “step it up” due to reports of individual with a knife
 - Assailant reported to be in parking garage
 - Engine not going to basement until secured by police
- Portable radios not working in garage

26

Case Study #3 – Emergency Situation

- Incident Overview
 - Injured Person/Fall
- Audio



27

Incident Key Components

- Requested police for agitated patient
 - Second request to have police respond on an emergency basis
 - Situational awareness identified escalating incident
 - Crew transmitted an emergency situation versus a "Signal 3"
- Communication section immediately checked on unit's welfare
 - Unit denied they were in danger

28

**Case Study #4 –
Life Threatening Situation**

- Incident Overview
 - Injured person (trauma)
- Situation Upon Arrival
 - Entered residence – conscious male with a gun
 - Crew immediately retreats
 - Calls for police assistance and additional fire/rescue help
 - Several shots fired
 - A fatal self-inflicted gunshot wound occurs

29



Incident Key Components

- Situation awareness is key
 - No specific threatening situation reported
- Crew's immediate retreat was best and only option – unknown victim intent
 - Provide details to Communication Section for PD response (location, weapon, number of individuals involved)
 - Retreat options – by foot vs. moving vehicles in line of sight

30

Commonalities

- High risk/low frequency events
 - Emergency situations
 - "Signal 3" – life threatening situations
- Occur anytime, any place, any call type and any unit type
 - Routine EMS calls
 - Routine fire related calls
 - Escalating incidents



31

Commonalities

- Various terminology used for requests
 - Law enforcement notification
 - Emergency need for law enforcement without fire/rescue threat
 - Fire/rescue personnel in immediate danger



32

Commonalities

- Communication Section actions
 - Communication personnel requested immediate police assistance
 - All requests call typed as "Signal 3" event
 - Checked if unit was in immediate danger/involved



33

Strategies

Ambulance Safety and Design

- *Improve design and safety standards*
- *Strategic positioning of supplies and equipment - within the reach of seated providers*
- *Increase use of seat belts*
- *Improve vehicle maintenance*

34

Strategies

Driving

- *Change culture and behaviors*
 - *Policy revisions - use of lights and siren*
 - *Safe driving incentives*
 - *Accountability*
 - *Use of technology*
- *Training*
- *Fatigue*
 - *Review shift/duty crew schedules*
 - *Rotation of crew positions*
- *Crew resource management*

35

Strategies

Situational Awareness

- *More than "Size-Up"*
 - *Inner/Outer circles*
 - *Continual assessments*
- *Comprehension and forecasting*
- *Two components*
 - *Risk recognition*
 - *Communication of risk*
- *Crew resource management (CRM)*

36

Strategies

Risk Assessment & Decision Making

- Hazard recognition
- Must be a continuous process for the entire duration of the incident
- Take feasible measures to limit or avoid risks
 - Execute the basics
- If conditions change, and risk increases, change strategy and tactics

37

Strategies

Roadway Safety

- Wear brighter, more reflective colors
 - Compliance with wearing ANSI traffic vest
- Optimize vehicle placement to provide safe work zone
- Respond with only the necessary resources
- Quickly initiate a traffic management plan
- Reducing incident clearance times

38

Strategies

Patient Care Delivery

- Consider technology usage
 - Automatic ventilators
 - Mechanical compression devices
 - Lifting assist devices
 - Patient transfer devices
- Have enough resources
- Wearing of seatbelts

39

Strategies

Personal Approach and Accountability

- Take steps to reduce personal risk taking
- Healthy habits
 - No smoking
 - Exercise
 - Healthy diet
 - Sleep
 - De-stress
- Compliance with PPE and BSI

40

Strategies

Communications

- Portable radio limitations
- Calling a mayday
 - EA/EB use and/or ease of use
- Calling emergency signal
- Communications section
- Standardize terminology

41

Strategies

Data Driven Decision Making

- Improved databases with uniform data
- Research
- Development, implementation and evaluation of risk reduction interventions = quality improvement
- Mechanism to share best practices
- Be wary of untested solutions
 - Use of ballistic vests

42

Summary

- Conduct a full size up
 - Risk assessment
 - Decision making
- A trained staff, a properly staffed EMS unit, proper equipment, command structure, communications, and proper risk assessment and decision making all play a role in a successful outcome to an incident response

43



44

Miracle on the Hudson

“For 42 years I had made small, regular deposits of education, training, and experience, and the experience balance was sufficient that on January 15th, I could make a sudden, large withdrawal.”

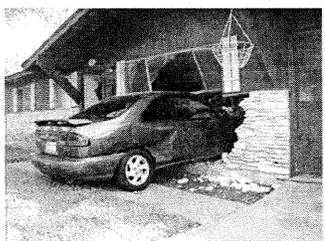
Captain Chelsey “Sully” Sullenberger
US Airways Flight 1549

45



NOW - YOU ARE THE OFFICER!
TELL US WHAT YOUR RISK
ASSESSMENT AND DECISION MAKING
IS...

You Are the Officer...



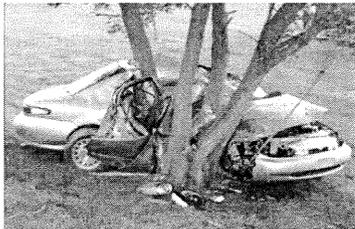
47

You Are the Officer...



48

You Are the Officer...



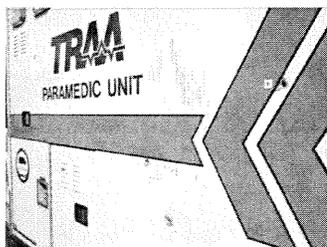
49

You Are the Officer...



50

You Are the Officer...

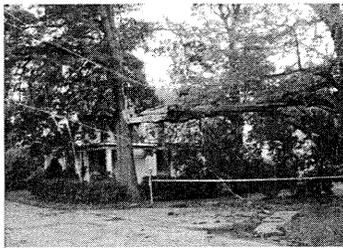


51

You Are the Officer...



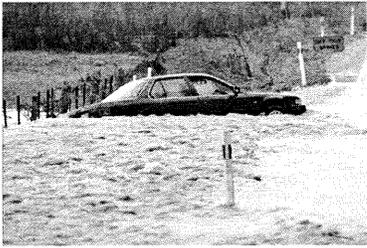
You Are the Officer...



You Are the Officer...

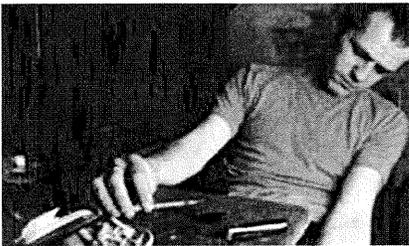


You Are the Officer...



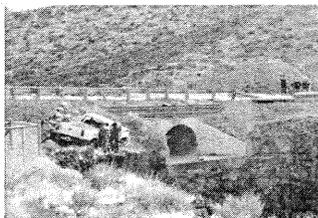
55

You Are the Officer...



56

You Are the Officer...



57

Questions/Comments



Fire Chief Richie Bowers
(Richard.Bowers@montgomerycountymd.gov)



Battalion Chief Jennie Collins
(jcollins@pwcgov.org)

58
