Crew Resource Management in EMS Operations

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Objectives:

• Review Critical Thinking
• Discuss Crew Resource Management
• Introduce Culture of Safety
• Discuss Operations Applications
Critical Thinking

The process of determining the authenticity, accuracy and value of something; characterized by the ability to seek reasons and alternatives, perceive the total situation and change one's view based on evidence.
• EMS education focuses on manual skills by algorithmic protocols
• We should focus on
  – Honing our Assessment
  – Clinical Reasoning
  – Critical Thinking
“Pre-Loss” Strategies

Things we can do before a loss occurs.
Heuristics

- Rules that explain how people make decisions, come to judgments, and solve problems.
- Can predispose a specific response to certain situations.
The goal is to unmask cognitive errors in the patient assessment process for the development of debiasing techniques.
Confirmation Bias

• “Cherry Picking”

• Look for evidence that confirms the assessment we’ve made

• We fail to consider persuasive evidence that changes that assessment.
Decision Momentum

The attached a label
tends to stick—
Even if it’s erroneous.
Anchoring

The tendency to lock onto the initial impression
Overconfidence Bias:
The tendency to believe we know more than we actually do.
Search Satisfying

The tendency to call off a search once something is found
(comes from not being methodical)
Reducing Errors

• Recognize our biases
• Work with the insight gained.
• Always consider alternatives.
• Ask what else might be going on.
• Learn to step back.
Reducing Errors

• Scenario-based training
• Simulations
• Focus less on algorithmic protocols
• Focus more on critical thinking and reasoning skills
Crew Resource Management

Training system for industries where human error can have devastating errors that focuses interpersonal communication, leadership, and decision making.
United Flight 173
CRM – What is the Goal?

To achieve Optimal Performance from a team executing multiple, complex tasks.
GOAL: OPTIMAL PERFORMANCE

Error Management is the “What”

CRM is the “How”
You Can Not Engage In Human Activity Without Introducing Human Error

So, Can We Reach The Goal of CRM Without Eliminating Error?
Human Factor Error Causes
Gordon Dupont’s “Dirty Dozen”

- Lack of Communication
- Complacency
- Lack of Knowledge
- Distraction
- Lack of Teamwork
- Fatigue
- Lack of Resources
- Pressure
- Lack of Assertiveness
- Stress
- Lack of Awareness
- Norms
Error Management

Helmreich’s Error Management Model

- AVOID
- TRAP
- MITIGATE

Where Error Lives

- LATENT – *present but not visible*… hidden in the things we do routinely

- ACTIVE – *present, in use*… individual error
“In the ten years it will take CRM to be introduced nationally, we will attend 1000 firefighter funerals...

I can’t get that out of my mind.”

Gary Briese,
Executive Director
IAFC
Multiple Perspectives

- Origin from Military Aviation 30 years
- Integrated to Commercial Aviation 20 years
- Discussed as a tool in medicine 10 years
- Fire Service text from 2004
Basic Premises

• Technology minimizes “Tool Error”.
• Human Factors primary cause for errors
• Rigid, hierarchal organizations prone to failure
Basic Elements

- Adaptability / Flexibility
- Assertiveness
- Communication
- Decision Making
- Leadership
- Mission Analysis
- Situational Awareness
ADAPTABILITY

The ability to alter a course of action when new information becomes available.
EMT: "Hey, Bob. The patient doesn't look well. His skin is turning blue. Are you sure that tube is in the trachea?"

Paramedic: "I saw it pass through the cords."

EMT: "Well, we've carried him down the stairs since then. What do you say we re-assess breath sounds and apply an ETCO2 detector?"

Paramedic: "Good idea, Jill. Let's do that."
Assertiveness

- The willingness/readiness to actively participate,
- state and maintain a position, until convinced by the facts that other options are better”

Requires the initiative and the courage to act.
Comfort level is the degree to which you feel comfortable with what is happening, while taking into account that flying a mission can be dangerous and demanding.

Whenever comfort level is exceeded, "Speak Up".
BEHAVIOR CONTINUUM

- Passive
- Assertive
- Over Aggressive
Passive

• Overly courteous
• "Beats around the bush"
• Avoids Conflicts
• "Along for the ride."

assertive

- Active Involvement
- Readiness to take action
- Provide useful information
- Makes suggestions
OVER AGGRESSIVE

- Domination
- Intimidation
- Abusive / Hostile
Communication is the clear and accurate sending and receiving of information, instructions, or commands, and providing useful feedback.
Effective decision making refers to the ability to use logical and sound judgment to make decisions based on available information.
John Boyd’s OODA Loop

- Observe
- Orientate
- Decide
- Act
Barriers to Good Decision Making

- Time
- Inaccurate / Ambiguous information
- Pressure to perform
- Rank Difference
Promote Good Decision Making

• Teamwork
• Time to decision
• Alert crew members
• Decision strategies and experience
Key to Success

- Good decisions optimize risk management and minimize errors
- Poor decision making is a leading cause of mishaps
- Each decision affects future options
FF/EMT Webb continues to open the spreader on the front hinge in spite of obvious indications that he is endangering the patient.
WHAT IS LEADERSHIP?

The ability to direct and coordinate the activities of other crew members and to encourage the crew to work together as a team.
Types of Leadership

• Designated
  – Appointed Leader
  – Typical Design
  – FDM

• Functional
  – Leadership by Knowledge or Experience
  – Occurs when need arises
RESPONSIBILITIES OF LEADERSHIP

• Crew Performance
• Direct Actions
• Ask for Assistance
Traits of Effective Leaders

- Respected
  - Builds Team Spirit
- Decisive
  - Open to Suggestions
- Delegates Tasks
- Provides Feedback
- Leads by Example
- Keeps Crew Informed
Mission Analysis refers to the ability to develop short term, long-term and contingency plans, as well as to coordinate, allocate and monitor crew and resources.
Mission Preparation

• Before
• During
• After
Situational Awareness refers to the degree of accuracy by which one's perception of his / her current environment mirrors reality.
PERCEPTION vs REALITY

- View of Situation
- Incoming Information
- Expectations and Biases
- Incoming Information vs Expectations
How does this relate to us?
EMS Examples

- Insufficient Communication
- Fatigue/Stress
- Task Overload
- Task Underload
- Group Mindset
- “Press on Regardless”
- Degraded Operating Conditions
Situational Awareness

Point where perception and reality collide

• Reality *always* wins

• Beware of loss factors
  – Ambiguity
  – Distraction
  – Fixation
  – Overload
  – Complacency
  – Unresolved discrepancy
Good Situational Awareness

- Good crew coordination
- Proper task completion
- Understanding
- Appropriate communication
- *Use of checklists*
Checklists (example)

First Responder Cardiac Arrest Checklist:

- Pt moved to adequate working area
- Communications advised CPR in progress
- Pit crew positions identified
- Continuous compressions being performed
- BVM is attached to oxygen and flowing
- AED / Defibrillator applied
- Sufficient personnel or additional requested
Checklists (example)

ALS Cardiac Arrest Checklist:
• Pit crew positions identified
• Continuous compressions being performed
• BVM is attached to oxygen and flowing
• Monitor visible and in paddles mode
• Code Commander is identified and positioned at the monitor
• ETCO2 waveform is present and being monitored
• IV/IO access has been obtained
• Gastric distention has been considered/addressed
• Family is receiving care and is at the patient’s side
Preventing Loss of SA

Crew mental joggers

• “What do we have?”
• “What’s going on?”
• “How are we doing?”
• “Does this look right?”
Preventing loss of SA

- Personal mental joggers
  - “What do I know that they need to know?”
  - “What do they know that I need to know?”
  - “What do we all need to know?”
The Principle of CRM is Communication.

Say what you Mean and Mean what you Say.
CRM Evolved

Crew Resource Management
For
Fire / EMS
Safety Culture

• “Not another program!”
• Individual Responsibility
• Non-Punitive Culture and Policy
Culture of Safety

- EMScultureofsafty.org
- National Directive
- Change “Culture”
Roadblocks to CRM

- Negative human factors
- Ingrained habits
- Personal attitudes
- 4 ft 8 ½ in
Roadblocks to CRM

• NORMS: Unwritten Rules
• ODD MAN OUT: Ignore input from a particular member
• HIDDEN AGENDA: Intentionally withholding information about intentions or plans from the rest of the crew.
A Near Miss is simply an Incident Not Yet Occurred.
“Mandatory refresher training wastes the instructor’s time, the firefighter’s time and the citizen’s dollars. Saving “a problem” for refresher training is a disservice to our firefighters and the public we protect.”
Reporting Programs

• Self Reporting
• Anonymous
• Operations Feedback
• Rewarded for Ideas
Vehicle Operations

- Call Prioritization
- Response Mode
- Transport Mode
- Quality Improvement
  - Road Safety
  - Black Box
Response / Scene Times

• No Evidence
• Load and Go
  – Time Sensitive
  – What to do?
• Public Perception
Stretcher Operations

- Lifting
- Securing Patient
- Transporting
- Loading/Unloading
Crew Safety

• Ambulance Operations
• Safety Designs
  – KKK Specs
• Restraint Devices
• Transporting Modes
Questions in Life are Guaranteed.

Answers Aren't