Risk Versus Benefit

Challenging Traditional Response Methodology

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Booker EMS
Booker, Texas
Booker EMS

- Converted from City run volunteer service to Hospital District operated career department in 2010
- 911 response for >400 sq miles. No hospital in response area.
- Nearest Level 4 is 19 miles away
- Nearest Level 3 is 145 miles away
Organizational Intangibles

1. Leadership
2. Teamwork
3. Creativity/Critical Thinking/Divergent Thinking
Bloom’s Taxonomy

- **Remembering**: Recalling relevant knowledge from long term memory
- **Understanding**: Making sense of the material you have learned
- **Applying**: Use the knowledge gained in new ways
- **Analysing**: Breaking the concept into parts and understand how each part is related to one another
- **Evaluating**: Making judgements based on a set of guidelines
- **Creating**: Putting information together in an innovative way
Bloom’s Taxonomy (Revised)

- **Remembering**: Can the student recall or remember the information?
  - define, duplicate, list, memorize, recall, repeat, state

- **Understanding**: Can the student explain ideas or concepts?
  - classify, describe, discuss, explain, identify, locate, recognize, report, select, translate, paraphrase

- **Applying**: Can the student use information in a new way?
  - choose, demonstrate, dramatize, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write

- **Analyzing**: Can the student distinguish between different parts?
  - appraise, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test

- **Evaluating**: Can the student justify a stand or decision?
  - appraise, argue, defend, judge, select, support, value, evaluate

- **Creating**: Can the student create a new product or point of view?
  - assemble, construct, create, design, develop, formulate, write
Bloom’s Taxonomy (1956)

< Knowledge & Understanding

Knowledge
- Recalling important information
  - define
  - repeat
  - record
  - list
  - recall
  - name
  - relate
  - underline

Comprehension
- Explaining important information
  - translate
  - restate
  - discuss
  - describe
  - recognize
  - explain
  - express
  - identify
  - locate
  - report
  - review
  - tell

Application
- Solving closed-ended problems
  - interpret
  - apply
  - employ
  - use
  - demonstrate
  - dramatize
  - practise
  - illustrate
  - operate
  - schedule
  - sketch

Analysis
- Solving open-ended problems
  - distinguish
  - analyse
  - differentiate
  - appraise
  - calculate
  - experiment
  - test
  - compare
  - contrast
  - criticize
  - diagram
  - inspect
  - debate
  - question
  - relate
  - solve
  - examine
  - categorize

Synthesis
- Creating ‘unique’ answers to problems
  - compose
  - plan
  - propose
  - design
  - formulate
  - arrange
  - assemble
  - collect
  - construct
  - create
  - set up
  - organize
  - manage
  - prepare

Evaluation
- Making critical judgments based on a sound knowledge base
  - judge
  - appraise
  - evaluate
  - rate
  - compare
  - revise
  - assess
  - estimate
What Questions do we focus on?

- Who?
- What?
- When?
- Where?
- How?
- Why???

- We tend to focus on the first 4 for policy, and the 5th for procedure, but we often forget the last altogether.
Divergent thinking

• To see multiple correct answers instead of one…

• Break point and Beyond (Book)
Top to bottom, focusing on the why

• By changing our focus to the question of why, we force ourselves to think more critically about what we do, and how we do it.

• If the answer to why is “because that’s how we have always done it” THEN IT IS PROBABLY WRONG!

• Who in your organization understands why? Executive? Management? Top to bottom?
RvB: One Tool for Critical Thinking

- Risk vs. Benefit is traditionally a formula used to evaluate investment strategies.
- We utilize the concept to try to consider everything we do, operational and clinically
- Subjective
- Dynamic
- Unique and Individual
### RvB: How Do You Do It?

<table>
<thead>
<tr>
<th><strong>Risks</strong></th>
<th><strong>Benefits</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assess potential risks</td>
<td>• Assess potential benefits</td>
</tr>
<tr>
<td>• Quantify</td>
<td>• Quantify</td>
</tr>
<tr>
<td>• Try to assess from multiple</td>
<td>• Consider a risk of failing</td>
</tr>
<tr>
<td>standpoints</td>
<td>to act a benefit</td>
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</tbody>
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Evaluate and determine the best course of action. Mitigate risks as best as possible, while maximizing benefits.
RvB: Code 3 Response (90 vs 75mph)

**Risks**
- Increased risk of MVA with injury (approximately 72% greater*)
- Increased risk of mortality
- Increased risk to pt if care is delayed
- Loss of unit, equipment, and staff
- Risk to “bystanders”

**Benefits**
- Response averaging 90mph vs. 75mph = 8:00 vs 9:36
- Public opinion
- Political outcry
• As a result of doing this RvB, we have virtually eliminated Code 3 transports, and drastically reduced Code 3 responses.
RvB: Code 3 Transport

Risks:
- Increased risk of MVA *
- Increased risk of mortality in the event of MVA *
- Increased risk to pt if care is disrupted by MVA
- Loss of unit, equipment, and staff to MVA
- Increased risk to general population of MVA

Benefits:
- Saves a few seconds or possibly minutes of transport time
- Decreases time out of service for another call by seconds/minutes.
- That’s what we do right!?!?!
Code 3 Transport

- Though I have not been able to find any large studies related to code 3 transport in EMS, there is a plethora of data that indicates the inherent dangers of this practice.

- Per a WHO study, an increase in speed of 1 km/hr associates a 3% increase in the risk of a crash with injury.

- NHTSA report:
WHEN AMBULANCES CRASH
EMS Provider & Patient Safety
DATA COLLECTED BETWEEN 1992-2011

4,500 vehicle traffic crashes involving an ambulance per year
ESTIMATED ANNUAL AVERAGE

34% resulted in injuries

33 people killed per year

Injury Severity and Use of Safety Restraints in EMS Providers*

84% OF EMS PROVIDERS IN THE PATIENT COMPARTMENT WERE NOT RESTRAINED

ONLY 33% OF PATIENTS WERE SECURED WITH SHOULDER AND LAP RESTRAINTS

44% of patients were ejected from the cot in serious crashes*

61% restrained with lateral belts only*

38% shoulder harnesses were available but were not used*

SIT DOWN & BUCKLE UP!
Secure Your Patients. They Rely on You!

This safety message brought to you by NHTSA's Office of EMS.

ems.gov
Bottom Line:

• Creating an organizational mentality of critical thinking will enrich your service and provide intangible benefits, both operationally, and clinically.

• RvB is one of many tools available to use
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