Cognitive Bias, Medical Error, and EMS

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Conflicts of Interest
• None

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Did you know…. 

At one point in time, it was a given that the practice of medicine would result in occasional errors. This was considered an "acceptable risk" inherent in medical treatment.

98,000 deaths per year
But that data is from hospitals.....

EMS is better than that.
And that's just medication errors...

The Diagnostic Process

By: [Author Names], [Publication Date], [Journal Title].
• Anchor Bias
• Automation Bias
• Availability Heuristic
• Confirmation Bias

IKEA Effect: The tendency for people to place a disproportionately high value on objects that they partially assembled themselves, such as furniture from IKEA, regardless of the quality of the end result.
System 1
(Reacting without thinking)

System 2
(Thinking without doing)

Recognition-Primed Decisions

- How do we make time-sensitive critical decisions?
  - Encounter a decision point in a stressful situation
  - Match the situation to a similar situation from your personal bank of experience
  - Apply the successful actions from the similar situation to the current situation
Recognition-Primed Decision

• What could possibly go wrong?
  • Lack of adequate experience
  • Failure of the situation to play out according to expectations
  • Failure to recognize the limitations of assumptions

So what can we do?

• Provide experience
So what can we do?
• Provide experience
• Increase awareness

- Is fatigue impacting my actions or thinking?
- Was I influenced too much by information received from dispatch, the patient, or a bystander?
- Did I accept the first diagnosis I thought of?
- Have I ruled out other possible diagnoses?
So what can we do?
• Provide experience
• Increase awareness
• Offload cognitive tasks
So what can we do?
• Provide experience
• Increase awareness
• Offload cognitive tasks
• Checklists!
### Table 1: Impact of a stepwise approach on medication administration

<table>
<thead>
<tr>
<th>Medication Administration Area</th>
<th>Stepwise Approach</th>
<th>Stepwise Plus Checklist</th>
<th>Traditional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients</td>
<td>50 (30%)</td>
<td>30 (15%)</td>
<td>20 (13%)</td>
</tr>
<tr>
<td>Medication errors</td>
<td>3 (6%)</td>
<td>1 (2%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>Total time saved</td>
<td>30 minutes</td>
<td>15 minutes</td>
<td>45 minutes</td>
</tr>
</tbody>
</table>

### Table 2: Impact of a stepwise approach on medication administration

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**Checklist to reduce diagnostic errors.**

- Complete cardiac workup
- Evaluate for disease progression
- Consider additional diagnostic tests
- Review patient history
- Discuss with colleagues

**Developing checklists to prevent diagnostic errors in Emergency Room settings.**

- **Checklist:** The checklist reduces diagnostic errors by ensuring that all critical steps are considered.
- **Results:** A decrease in diagnostic errors by 50% after implementing the checklist.

**A portable checklist to facilitate reducing diagnostic errors.**

- **Checklist:** Compact, easy to carry, and update.
- **Benefits:** Improved diagnostic accuracy and patient safety.

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**Gary Klein**

**Daniel Kahneman**

**Dr. Atul Gawande**

**Dr. Pat Croskerry**

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Take-home Points:
• Experience is a key factor in critical decision-making
• Cognitive bias can be managed through awareness and the use of heuristics
• Checklists and other tools can help enhance patient safety by reducing cognitive tasks