Critical Thinking

Learned or Inherent?

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Disclaimer

- This presentation is a compilation of research, review, experience, and professional perceptions. Our intention is to provide an *overview* of principles, not a lone solution, but requiring further research, review, and trial by participants in their unique work environment.

Overview

- Critical Thinking is a concept and a core element of patient management.
- The terminal objective of this session is to provide insight to effectively teaching this concept to EMS professionals.

Objectives

1. Understand the three core components and definitions of critical thinking.

2. Differentiate between an EMS Technician and the EMS Clinician.

3. Developing a differential diagnosis and patient care plans utilizing critical thinking.

4. Formulate practical, educationally sound objectives to assist with implementing and evaluating critical thinking.

Sections

1. Introduction, Overview and Definitions
2. Technician or Clinician
3. Developing Differential Diagnosis and Patient Care Plans
4. Teaching Critical Thinking

Section One

INTRODUCTIONS, OVERVIEW AND DEFINITIONS

Definitions

- **Critical Thinking is a <u>CONCEPT</u>***(1 of 4)*

  - A mode of thinking about any subject, content or problem in which the thinker improves the quality of their thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them

  - Is self-directed, self-disciplined, self-motivated, and self-corrective thinking

  - Involves effective communication and problem solving abilities

  - Is more than a process – it is a mind-set

  - Is <u>Higher Level Thinking</u>

- Is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and or evaluating information gathered from or generated by observation, experience, reflection, reasoning, communication, or the patient assessment process

- Is never universal from one individual to another individual

- Is greatly dependant upon the quality and depth of experience in a given domain of thinking

- No one is a critical thinker through and through for we all have tendencies to display irrational thought or undisciplined thought patterns

- *Excellent in thought* – Critical Thinking – must be systematically cultivated

It is for the aforementioned reasons, the development of critical thinking skills and dispositions is a life-long endeavor.


AMBULANCE

Section Two

TECHNICIAN OR CLINICIAN?

The Critical Thinker

- Raises vital questions and problems, formulating them clearly and precisely
- Gathers and assess relevant information, using abstract ideas to interpret it effectively comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards
- Thinks open mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and
- Communicates effectively with others in figuring out solutions to complex problems

EMT As A Technician

- Not expected to use high levels of reasoning skills
- Protocol driven – linear followers
  - Responds to patient when certain or a group of signs or symptoms are present
- Examples:

EMT As A Clinician – A Critical Thinker

- Applies clinical reasoning to a patient
  - Differential Diagnosis
  - Uses Analysis of the event based upon knowledge, comprehension and application of sound medical principles

In Essence…….

- The critical thinker uses the differential diagnosis process:
  - considers a variety of possible causes, to
  - determine a number of intervention possibilities waying the expected outcomes against the potential risks/side effects, then
  - formulates the most beneficial intervention that will best improve the patient outcome

The Critical Thinking Process

- **IS NOT:**
  - limited to advanced level providers, or
  - based on license level
- **IS:**
  - Driven by sound initial training, *followed up with*
  - Fundamental clinical mentoring, *and*
  - Quality continuing education, *plus*
  - Field experience *and* a positive continuous quality improvement program

Section Three

DEVELOPING DIFFERENTIAL DIAGNOSIS AND PATIENT CARE PLANS

Critical Thinking V. Care Plans

- **Four Steps to Developing Critical Thinking**
  - Knowledge
  - Comprehension
  - Application
  - Analysis

Four Steps to Developing Critical Thinking Habits

1. Knowledge

- Identification and recall
  - Signs and symptoms of chest pain
    - Mid sternal chest pressure
    - Dyspnea
    - Nausea
    - Pain radiating down the arm
    - Onset and duration

Four Steps to Developing Critical Thinking Habits

2. Comprehension

- Ability to interpret and paraphrase
  - Ex: ability to interpret the signs and symptoms and explain the physiological process
    - WHY the patient is displaying the signs and symptoms
    - Explain the difference between Heart Attack, Angina, Anxiety, Indigestion,

Four Steps to Developing Critical Thinking Habits

3. Application

- Use all knowledge, information, and experience to determine additional information, solve any problems and explain actions
  - Prescribed NTG and max'd out, extensive cardiac Hx, is obese, with diabetes, HTN, CVA 6 yrs ago, COPD, smoker, regular use of alcohol, and has no feeling in right foot.

Four Steps to Developing Critical Thinking Habits

4. Analysis

- Prioritize and initiate appropriate treatment
  - Prescribed NTG and max'd out, extensive cardiac Hx, is obese, diabetes, HTN, prior CVA, COPD, smoker, regular use of alcohol, and has no feeling in right foot.
  - Develop a treatment care plan based up on critical thinking skills/applications

Section Four

TEACHING CRITICAL THINKING

Simulation and Scenarios

- Include role-playing of realistic situations
  - Real patient actors with moulage, make-up, background noise, bystanders
  - Real props
  - Responding crew with equipment, supplies, and radios
  - Realistic environments
    - Elevators, stairwells
    - Cars, trucks, trains, busses, ATVs, etc
  - Allows students to make mistakes in a clean environment

Classroom

- Begin class with case studies or scenarios
- Ask students to summarize lessons
- Assign or allow student to choose a topic, research it, present it either from a pro or con, and have them defend choice.
  - One topic for two students; one pro, the other con
- Summative evaluations: all choices should be reasonably close but only one is most correct.

Socratic Method

- Constant use and implementation
- Present a case where a concept is illustrated
- Students work to operationalize
  - What are the issues?
  - What are other options?
  - Why did the student choose ____?
  - Can the student prove or provide evidence for their decision?
  - How can this be evaluated for correctness/accuracy?

Summary

- Critical thinking is a concept
- Is systematically cultivated from initial training through field experience with QA/CQI follow-through
- A critical thinker is self-directed, self-disciplined, self-motivated, and self-corrective
- EMS educators and instructors should in- fuse the education standards with complex scenarios and problems to stimulate students' critical thinking and problem-solving development.

Questions?

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