



Critical Thinking Strategies From the Book to the Bedside

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Objectives

- Impact of Critical Thinking on Patient Outcomes
- Practical Critical Thinking Strategies for Bedside Practice
- Shock/SIRS/MODS
- Professional Communication
- Documentation of High-Risk patient situations



Critical Thinking


Socrates
Delve Deep...Beneath the Surface



Definitions of Critical Thinking


"an active, purposeful, organized, cognitive process we use to carefully examine our thinking and the thinking of others, in order to clarify and improve our understanding."
J. Chafetz, as cited by M. Cairns

"the ability to think in a systematic and logical manner with openness to question and reflect on the reasoning process used to ensure safe nursing practice and quality care."
Heaslip



Critical Thinking Facts

- Learned behavior
- Active Process
- It is not for everyone at the same level
- Legal implications
 - NLN requirement
 - JCAHO Standards
- Correlation between CT and Competence




Correlation does not always mean Causation

Case study

- 17 year-old 2 days post-op extensive knee surgery
- Symptoms
 - Anxiety, dyspneic, "feels funny"
 - BP175/94, P122, R28
- Correlations
 - Asthma, allergic reaction, fear/anxiety


Pulmonary Embolus



Critical Thinking Requires...

- Inquisitiveness
- Open-mindedness
- Reflection
- Socratic Questioning
- Flexibility

Blessed are the Flexible for they do not get bent out of shape




Mindset of the Critical Thinker

"I don't make decisions until I've thought through everything."

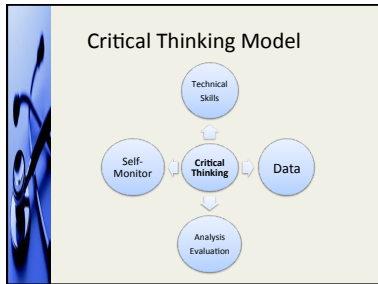
"Rather than relying on someone's word, I like to find out for myself."

"I always do better when I am able to think things out for myself."



Critical Thinking Behaviors

- Obtains supporting evidence for actions or conclusions
- Explore possibilities
- Look for trends, patterns
- Listen to *gut feelings*
- Analyze data



- ### Data Collection/Inference
- Patient/Family/Significant other
 - Co-workers/Team members
 - Diagnostics
 - Labs
 - Radiology
 - Procedures
 - Medical record

- ### Interpretation/Analysis
- Underlying illness
 - Medications
 - Normal-abnormal
 - Additional symptoms
 - Discriminating questions

- ### Self-Regulation
- Double-checking
 - Policies/Procedures
 - Resources
 - Correction/revision
 - Thoughts
 - Actions

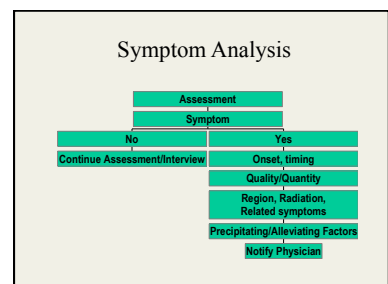
Evaluation

"I'm convinced that what we believe in has to be able to stand the test of evaluation."
J. Chaffee

- ### Critical Thinking is not...
- Being critical or judgmental
 - Common sense
 - Knee-jerk responses
 - Task-oriented
 - Working in isolation
 - Lack of concern for details

Strategies for Implementing Critical Thinking at the Bedside

- ### Symptom Analysis
- Precipitating/Palliative Factors
 - Quality/Quantity
 - Region/Radiation/Related Symptoms
 - Severity
 - Timing
- © A. Davis Company, 2000



Questions that Prompt Critical Thinking

- How will I change my plan of care based on these labs?
- How will I justify my actions (or inactions)?
- How does ___ relate to
- What can I expect to happen?
- What does the data suggest...what else do I need to know?

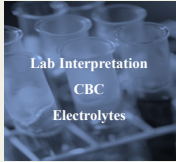
Adapted from www.sru.edu/pages/6386.asp

The 5 Ws

WHO, WHAT, WHERE, WHY, WHEN

Barriers

- Biases
- Environmental distractions
- Rushing, anxiety/stress
- Lack of communication/patient advocacy
- Interpersonal skills



Lab Interpretation
CBC
Electrolytes

Considerations

- Age
- Underlying illness
- Obtain blood sample at same time, regular intervals
- Volume status
- Pregnancy
- Medications

CBC Components

- Red blood cell count (RBC)
- White blood count (WBC)
- Hematocrit (HCT)
- Hemoglobin (Hb or Hgb)
- Platelet count

Red Blood Cells

- Produced by bone marrow
- Provide surface area for hemoglobin
- Reticulocytes
- Comprised of indices: MCV, MCH, MCHC
 - Anemia with normal indices = acute blood loss
 - Anemia with decreased indices = microcytic, hypochromic anemia
 - Anemia with increased indices = macrocytic anemia due to B12 deficiency

Hemoglobin and Hematocrit (H&H)

<p>Hemoglobin (Hgb)</p> <ul style="list-style-type: none"> • 13-18 gm • < 5 = heart failure • >20 = hemoconcentration <p>Protein substance in RBCs</p> <p>Hgb electrophoresis</p> <ul style="list-style-type: none"> • HgbF: Thalassemia • HgbC: Hemolytic Anemia • HgbS: Sickle Cell Anemia 	<p>Hematoerit (Het)</p> <ul style="list-style-type: none"> • 40-54% male; 36-46% female • Determines percentage of RBC in plasma • Main purpose to assess extent of significant blood loss
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White Blood Cells

Neutrophils	First line of defense against infection and physiologic stress.
Eosinophils	Increased with allergic and parasitic conditions. Decreased with steroids, stress.
Basophils	Used to analyze allergic reactions
Monocytes	Second line of defense against infection and foreign substances
Lymphocytes	Primary component of body's immune system Comprised of T & B cells

"Hello Dr. Rollings, I have some labs for you"

Na 145
 Cl 105
 K 3.0
 BUN 22
 Creat 1.3
 Glu 90
 HCT 50



Potassium




- Regulated by kidney
- Functions
 - Neuromuscular activity
 - Acid base balance
 - Intracellular fluid balance

Potassium

- HYPOKALEMIA**
 - Decreased Intake
 - Increased Loss
- HYPERKALEMIA**
 - Renal Disease
 - Traumatic Venipunctures
 - Tissue Damage

Sodium and Chloride





Major extracellular cation

Functions

- Regulation of body fluids
- Helps to maintain acid base balance Helps to maintain balance of electrolyte composition
- Nerve conduction
- Water retention

Sodium

HYPONATREMIA Overhydration Endocrine Disorders Third Spacing	HYPERNATREMIA Fluid Deficit Sodium Excess
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Calcium and Phosphorus

Calcium <ul style="list-style-type: none"> Skeletal, smooth muscle and cardiac contraction Blood coagulation Strengthens capillary membranes Bones and teeth 	Phosphorus <ul style="list-style-type: none"> Metabolism of carbohydrates and fats Acid-base balance Bones and teeth Utilization of B vitamins Nerve and muscle activity
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Calcium

HYPOCALCEMIA <ul style="list-style-type: none"> Inadequate Intake Vitamin D Deficiency Hypoparathyroidism Inadequate Absorption 	HYPERCALCEMIA <ul style="list-style-type: none"> Increased Intake Increased Vitamin D Loss from bones Immobilization
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Magnesium



- Functions
 - Prevents overexcitability of muscles
 - Blood clotting
 - Vitamin B activation
 - Carbohydrate and protein metabolism
 - Influences use of K⁺, Na and Ca

Hypomagnesemia

Causes/Risk Factors

- Gastrointestinal Losses
- Renal Disease
- Diuretics
- Endocrine Disorders
- *Cardiovascular Patients

BUN 8-18 Creatinine 0.6-1.2	
Elevated BUN	Dehydration, GI bleed, renal disease, increased protein intake, medications, heat stroke
Decreased BUN	Severe liver disease, Overhydration, malnutrition
Elevated Creatinine	Renal failure, UTI, DKA, Leukemias
Decreased Creatinine	Pregnancy, aging, muscle wasting, chronic neuromuscular disease

Shock/Sepsis/MODS Facts

- Rangel-Fausto et al*
 - 68% of hospital admissions met criteria for SIRS
- Pittel, et al*
 - 542 cases/1000 hospitalizations
 - 840 cases/1000 hospitalizations
- Angus et al*
 - 2.2 cases/100 hospitalizations

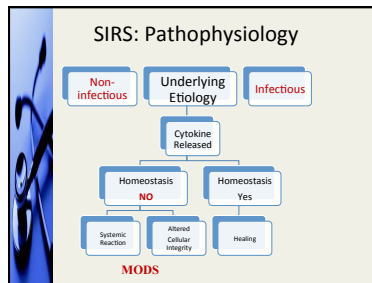
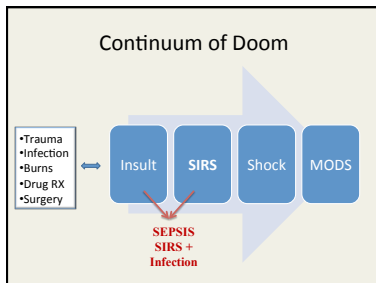
Emedicine, 2010

Understanding the Terms

Sepsis

SHOCK

SIRS **MODS**



SIRS: Clinical Presentation

- SIRS Criteria
 - Temp >100
 - Heart rate > 90
 - RR >20
 - WBC > 12,000 or < 4000
- Systemic Impact
 - Hypoxemia/ARDS
 - Decreased Urinary Output
 - Hypotension
 - Hyperglycemia

SIRS: Main Points

- Characterized by exaggerated inflammation/coagulopathy
- Not always related to infection
- “Equal Opportunist”
 - Age, sex, race
- Early recognition/intervention critical to patient outcome

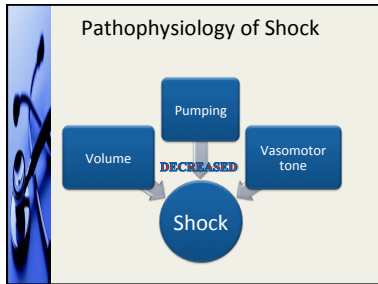
SHOCK

Shock: Types

- Cardiogenic
- Hypovolemic
- Distributive Shock
 - Anaphylactic
 - Septic
 - Neurogenic

↓ BP, Tachycardia

Thirst, cool clammy skin

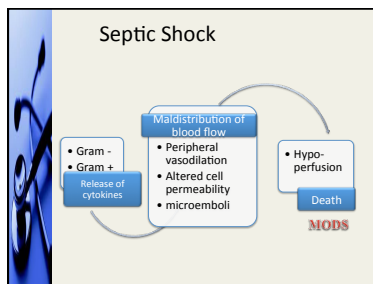
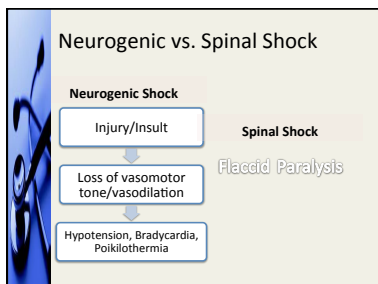
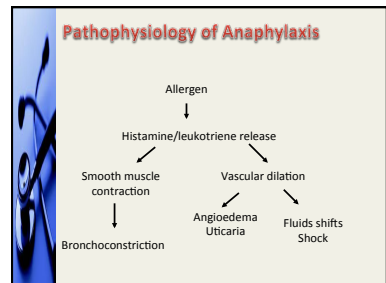
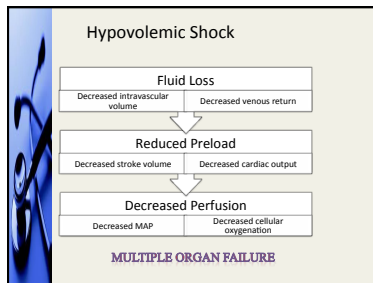


Stages of Shock Clinical Picture

Date/Time	Progress Note
2/2/0000	
[Early] 0800	Re-assessment performed, vss , no change in condition...
[Compensatory] 1420	Restless, states "can't get comfortable," BP 102/62, P92, R22, O2 sat 90-92% on 1L/NC O2. BG 192 (see MAR).
[Late] 1900	BP 90/48, P 102, R 24 even, non-labored, sleeping at longer intervals, arouses to touch...
2215	CODE BLUE called...

Cardiogenic Shock

Cardiogenic Shock



Clinical Picture of Septic Shock


	8	10	12	4	8
CV	120/78 88	110/70 82	100/70 90	100/50 100	88/62 100
RESP	14/96%	14/94%	16/90%	24/90%	24/90%
NEURO	A&O	A&O	"sleepy"	"drowsy"	"lethargic" A&O X 3
RENAL	1000/		1200/400	2000/500	
GI	BS +		BS +		BS -
INTEGU-MENTARY	WNL		WNL	Facial Flushing	Pale, cool

Labs: BG 170, WBC 3,800, BUN 22, CO2 49


Multi Organ Dysfunction
Altered organ function as a result of the progression of SIRS/Sepsis/Shock

- May be first clinical signs of sepsis
- Can be primary or secondary
- Physiological insults are triggers
- Characterized by hypoperfusion
 - Symptoms of shock
 - Bleeding
 - Mental status changes
 - Decreased urinary output
 - Labs: hypoxia/hypoxemia, liver enzymes/creatinine, prolonged PT/PTT


Shock/MODS: Medical Management



Normal saline
Lactated Ringers



O₂



Albumin

Drug Therapy

Vasopressors
Sodium Bicarb
Antibiotics
Steroids
Insulin

Shock: Nursing Management

- Vital signs with O₂ Sat
- I&O (renal/cardiac perfusion)
- Neuro assessment (cerebral perfusion)
- Lung Assessment (pulmonary perfusion)
- Nutrition
 - Enteral/Parenteral
- Labs *monitoring and interpretation
 - Electrolytes, PT/PTT, glucose, CBC

And last but not least...

- Documentation
 - Make sure your documentation accurately reflects the interventions provided!
 - Timing/chronology
 - All interventions provided
 - Patient responses to interventions
 - MD/other notifications

References

- Critical Thinking: To Think Like A Nurse (nd). Retrieved April 3, 2005 from <http://www.cariboo.bc.ca/nursing/faculty/headlp/nrsct.htm>.
- Fincher, C (nd). Critical Thinking Online Inservice. Retrieved April 3, 2005 from <http://216.103.143.181/resources/onlineedu/criticalthinking/criticalthinking>.
- Lewis, S, et al (2007). Medical-Surgical Nursing: Assessment and Management of Clinical Problems, pp. 5-7. St. Louis, MO: Mosby Elsevier.
- Medical-Surgical Nursing made Incredibly Easy (2008). Ambler, PA: Lippincott William & Wilkins.
- Wilson, D. (2008). Manual of Laboratory & Diagnostic Tests. The McGraw-Hill Companies, Inc.

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QUESTIONS