Transition from Knowledge to Clinical Reasoning

Marianne Spurgeon, MSN, RN
Director, Education Enrichment Services

Upon completion of this session, participant will be able to:

• Examine differences between foundational thinking, critical thinking, clinical judgment, and clinical reasoning

• Explore the importance of clinical reasoning in nursing practice.

• Discuss the use of virtual patients as a strategy to promote clinical reasoning.

Group Activity (5 minutes)

• What is knowledge, critical thinking, clinical reasoning, and clinical judgment?

• How do they differ from one another?

• Why are they important to the practice of nursing?

• Why is it important to begin teaching these skills early in the program?
Group Reports

- Knowledge
- Critical Thinking
- Clinical Reasoning
- Clinical Judgment
- Relationship to practice of nursing?
- Significance of teaching these skills early in the program?

Transition from Knowledge to Clinical Reasoning/Clinical Judgment

Knowledge
- Acquisition of facts and principles
- Recall – being able to retrieve previously learned knowledge; does not require an understanding of the information
  - Example: The normal parameters for blood glucose is between 70-105 mg/dL.
- Comprehension - being able to understand the knowledge retrieved and verbalize or use it in some manner. “Understanding” is another term used for comprehension.
  - Example: The nurse comprehends/understands/ that this reading is below the expected range and that the blood glucose is low.
Critical Thinking

• The set of thinking skills used when analyzing client issues and problems
  – Interpretation
  – Analysis
  – Evaluation
  – Inference
  – Explanation

• Facilitates the critical analysis of an issue

• Requires student/nurse to be able to:
  – Think abstractly
  – Generalize/transfer information
  – Apply knowledge to client situations

(REgaben-McAlpine & Clark, 2002)

RELATIONSHIP Between Knowledge and Critical Thinking

<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>Clinical Reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interpretation</strong></td>
<td>The findings of a blood glucose of 56 mg/dL, hunger, difficulty concentrating, and tachycardia could indicate hypoglycemia.</td>
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<tr>
<td><strong>Analysis</strong></td>
<td>Upon review of the chart, the nurse finds that the client received 12 units of NPH Humulin insulin this morning at 0730. The client only ate 50% of her lunch and has not eaten anything since.</td>
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<tr>
<td><strong>Evaluation</strong></td>
<td>The NPH Humulin insulin could be peaking and client’s caloric load has been inadequate for amount of insulin given.</td>
</tr>
<tr>
<td><strong>Inference</strong></td>
<td>Client is experiencing hypoglycemia.</td>
</tr>
<tr>
<td><strong>Explanation</strong></td>
<td>Hypoglycemia is occurring because the NPH Humulin insulin is peaking and client’s caloric load is inadequate for amount of insulin on board.</td>
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Clinical Reasoning

• Mental process used when analyzing and evaluating all elements of a clinical situation and deciding on the best action to take

(Tanner, 2006)

  – Identifying and collecting critical/relevant data
  – Processing information
  – Analyzing/interpreting data
  – Inferring possible conclusions
  – Planning and implementing interventions
  – Evaluating and reflecting on outcomes
RELATIONSHIP Between Critical Thinking and Clinical Reasoning

- Analysis is one of the most important cognitive skills of a critical thinker.

- It involves:
  - Scrutinizing all of the data surrounding a clinical situation
  - Determining the significance of each piece of data
  - Distinguishing relevant from irrelevant data.
  - Considering various interventions in relation to:
    - Potential outcomes
    - Risk of positive and negative consequences

Clinical Judgment

- Decision made regarding patient needs and action to be taken based on clinical reasoning.

RELATIONSHIP Between Clinical Reasoning and Clinical Judgment

- Clinical reasoning supports clinical judgments by:
  - guiding the nurse through the process of assessing and compiling data,
  - selecting and discarding various bits of data based on their relevance to the client care situation
  - making decisions regarding client care based on nursing knowledge
**Group Activity – 5 minutes**

- Outline the clinical reasoning process required by a student in relation to the following example:
  - Client’s IV is infiltrated but it is time to hang an IVPB antibiotic. What decisions must the student make to resolve this issue?
- What difference would you expect to see in how a beginning versus an advanced student handles the situation?

**Group Reports**

- Decision making process related to infiltrated IV and scheduled antibiotic
- Difference in clinical reasoning skills between beginning and advanced students

**Clinical Reasoning Requirements**

- Active engagement
- Deliberate practice
- Reflection on activities to improve performance
Group Activity – 10 minutes

- Discuss how you can provide opportunities for students to practice clinical reasoning skills
- Identify what factors influence the quality of these opportunities?

Group Reports

- How you can provide opportunities for students to practice clinical reasoning skills
- What factors influence the quality of these opportunities?

Common Strategies to Promote Clinical Reasoning

- Written case studies
- Role play
- Simulation (low/high fidelity)
- Simulated patients
- Clinical experience
Online Virtual Patients

- Interactive simulations with computer-based patients in simulated clinical encounters
- Virtual patients are currently used in health care education by medicine, physical therapy and other disciplines

Lack in Clinical Reasoning Skills

- Failure to detect impending patient deterioration (del Bueno, 2003)
- Difficulty differentiating between acute problems and those needing immediate attention (O’Neil, 1994)
- Inappropriate judgments (Moods, 2002)
  - Misidentify a situation
  - Faulty logic due to the use of rote habitual action or convention; an unwarranted or faulty intervention
  - Failure to recognize the implications of signs and symptoms identified in the assessment

Implications for Education

Students need to develop clinical reasoning skills

- Bring information to life
  - Distinguish range of manifestations
  - Recognizing changes in condition
  - Evaluate response to treatment
- Ensure exposure to key topics/concepts
  - Shortage of clinical sites
  - Limited control of clinical experiences
- Provide opportunities to practice clinical reasoning skills
References


