CRITICAL THINKING IN THE ICU: IMPLEMENTING BEST PRACTICES

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OBJECTIVES

✓ Discuss best practices in advanced nursing assessment and critical thinking that can result in positive patient outcomes in the ICU

✓ Demonstrate critical thinking while considering variables that will positively influence the patient’s clinical condition and nursing care planning in the ICU
DEFINITION OF CRITICAL THINKING

FORMAL DEFINITION

Cognitive process during which an individual reviews data and considers potential explanations and outcomes before forming an opinion or making a decision.

“Critical thinking in nursing practice is a discipline specific, reflective reasoning process that guides the nurse in generating, implementing, and evaluating approaches for dealing with client care and professional concerns.” NLN 2000
CRITICAL THINKING:
THE ART OF THINKING ABOUT YOUR THINKING

While you are thinking in order to make your thinking better: more clear, more accurate, or more defensible.
Reasoning process by which individuals reflect on and analyze their own thoughts, actions, & decisions and those of others.
A NURSE WHO IS A CRITICAL THINKER WILL:

✓ Identify and raise vital questions and problems related to an issue that is presently before them, formulating the issue clearly and precisely;

✓ Gather and assess relevant information (past and present), using abstract thinking (a chess move) to interpret the issue effectively and come to a well-reasoned conclusion and/or solution, testing their reasoning against relevant nursing criteria and standards;

✓ Think open-mindedly within alternative systems of thought (different nursing theories, interdisciplinary approach, etc), recognizing and assessing, as need be, the assumptions, implications, and practical consequences of their conclusions; and

✓ Communicate effectively with others in creating and implementing a plan of care to address healthcare problems
LET’S SUMMARIZE:
CRITICAL THINKING AND NURSING JUDGMENT

Decision making is the skill that separates the professional nurse from technical or ancillary staff

Critical thinking is NOT a linear step by step process (skills check list), but a process of looking at what is in front of you now, and bringing all of your past knowledge and experiences into the present situation to solve the present problem

Adult thinking and adult education is premised on an active curiosity toward coming up with the best solution for a situation
ATTITUDES THAT FOSTER CRITICAL THINKING

- Independence—don’t rely on computerized drop-downs
- Fair-mindedness
- Insight into ethnocentricity
- Intellectual humility—you don’t always know the answer
- Intellectual courage to challenge status quo
- Integrity
- Perseverance—look to alternatives
- Confidence
- Curiosity that fosters questioning and good problem solving skills
Barriers to Critical Thinking

Five **Powerful Barriers** to Critical Thinking:

- **Egocentrism**
  - Self-centered thinking
    - self-interested thinking
    - self-serving bias

- **Sociocentrism**
  - Group-centered thinking
    - Group bias
    - Conformism

- **Unwarranted Assumptions**
  - Beliefs that are presumed to be true without adequate evidence or justification
    - Assumption
    - Stereotyping

- **Wishful Thinking**
  - Believing that something is true because one wishes it were true.
    - The truth is “just a matter of opinion”
    - Relativism
      - Subjectivism
      - Cultural relativism

- **Relativistic Thinking**

Critical thinking is thinking about your thinking, while you’re thinking in order to make your thinking better.

— Richard Paul
CRITICAL THINKING IN NURSING....

- Purposeful, outcome-directed
- Based on principles of nursing process and the scientific method
- Guided by professional standards and code of ethics
- Requires strategies that maximize potential and compensate for problems
- Constantly reevaluating, self-correcting, and striving to improve individual practice
HOW DO NURSE'S ACCOMPLISH CRITICAL THINKING?

- Learn to be flexible in clinical decision making
- Reflect on past experiences and previous knowledge
- Get input from others
- Identify the nature of the problem
- Select the best solution for improving client’s health
- Review literature
BEHIND THE SCENES OF CRITICAL THINKING
WHAT IS THE NURSING PROCESS

• Systematic approach that is used by all nurses to gather data, critically examine and analyze the data, identify client responses, design outcomes, take appropriate action, then evaluate the effectiveness of action

• Involves the use of critical thinking skills

• Common language for nurses to “think through” clinical problems
BREAKING DOWN THE NURSING PROCESS EVEN FURTHER, THE CRITICAL-THINKING PATTERN OF EXAMINATION IN THE DATA COLLECTION STAGE WOULD LOOK LIKE THIS:

![Diagram of client's health history dimensions for gathering data](image-url)
BREAKING DOWN THE NURSING PROCESS EVEN FURTHER, THE CRITICAL-THINKING PATTERN OF EXAMINATION IN THE **NURSING DIAGNOSIS** STAGE WOULD LOOK LIKE THIS:
BREAKING DOWN THE NURSING PROCESS EVEN FURTHER, THE CRITICAL-THINKING PATTERN OF EXAMINATION IN THE GOAL SETTING STAGE WOULD LOOK LIKE THIS:

![Diagram](image-url)

**Figure 15-3** Relationship between diagnostic statement and format.
Redrawn from Hickey P. *Nursing process handbook*, St. Louis, 1990, Mosby.

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BREAKING DOWN THE NURSING PROCESS EVEN FURTHER, THE CRITICAL-THINKING PATTERN OF EXAMINATION IN THE NURSING PLANNING AND INTERVENTION STAGES WOULD LOOK LIKE THIS:

![Diagram of nursing process stages]

Figure 16-1 From diagnosis to outcome. Redrawn from Gordon M: Nursing diagnosis: process and application, ed 3, St. Louis, 1994, Mosby.

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CRITICAL THINKING AND THE NURSING PROCESS: HOW DO THEY RELATE TO ONE ANOTHER?

- Identify health care needs
- Determine Priorities
- Establish goals & expected outcomes
- Provide appropriate interventions
- Evaluate effectiveness
CRITICAL THINKING AND NURSING CARE PLANS: HOW DO THEY RELATE TO ONE ANOTHER?

- Written guidelines for client care
- Organized so nurse can quickly identify nursing actions to be delivered
- Coordinates resources for care
- Enhances the continuity of care
- Organizes information for change of shift report

<table>
<thead>
<tr>
<th>Name: Mrs. Rita Walters</th>
<th>Age: 66</th>
<th>Date of Admission: 11/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis on admission: CVA left-sided weakness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing diagnoses: impaired physical mobility, high risk for injury, situational low self-esteem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term goals: independent mobility using walker or quad cane, record of personal safety, positive self-regard</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DATE</th>
<th>PROBLEM</th>
<th>GOAL</th>
<th>TARGET DATE</th>
<th>NURSING ORDERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/10</td>
<td>#1 Impaired Physical Mobility related to left-sided weakness, manifested by decreased motor strength in left leg and arm, slowed gait, dragging feet.</td>
<td>The client will stand and transfer to wheelchair or commode</td>
<td>11/24</td>
<td>1) Propose ROM q.15 to left arm and leg 2) Physical therapy q.1 at the practice of parallel bars 3) Apply left leg brace and sling to left arm when up 4) Assist in transfers on right leg at bedside before and after physical therapy class</td>
</tr>
<tr>
<td>11/10</td>
<td>#2 Risk for injury related to motor deficit.</td>
<td>The client will transfer/DNR to ambulate without injury</td>
<td>12/7</td>
<td>1) Keep side rails up and supervise over bed 2) Defer use of walker until patient can sit up straight (hip, knee, and ankle flexed) before transfer 3) Tug for 3 minutes before attempting to stand 4) Look behind on ambulating before transfer 5) Obtain help of second assistant 6) Block left foot to avoid stepping on leg 7) Place right foot on right sit-bath with both feet off the floor</td>
</tr>
<tr>
<td>12/1</td>
<td>#3 Situational Low Self-Esteem related to dependence on others as expected by others.</td>
<td>The client will identify one or more examples of improved mobility and self-care</td>
<td>12/18</td>
<td>1) Assist to carryExpress feelings without interpretation or interrupting 2) Reinforce effort that the right side of body is functional 3) Help the client set and achieve realistic, measurable goal daily</td>
</tr>
</tbody>
</table>

Figure 2-4 Sample nursing care plan.

BROKEN DOWN INTO THE ELEMENTS OF THE NURSING PROCESS, THE CRITICAL THINKING PATTERN OF EXAMINATION WOULD LOOK LIKE THIS.

<table>
<thead>
<tr>
<th>Section</th>
<th>Information to Include</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction (patient and problem)</strong></td>
<td>Identify who the patient is (Age, gender, etc.)</td>
</tr>
<tr>
<td></td>
<td>Identify what the problem is (What was he/she diagnosed with, or what happened?)</td>
</tr>
<tr>
<td></td>
<td>Look for abnormal functions</td>
</tr>
<tr>
<td></td>
<td>Triage the care (What should the nurse focus on or do in successive order? What problems are immediate—what can wait?)</td>
</tr>
<tr>
<td></td>
<td>What problems can nursing focus on, what problems can be delegated? What problems require multi-disciplinary approach?</td>
</tr>
<tr>
<td><strong>Data Collection</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pathophysiology</strong></td>
<td>Describe the disease (What are the symptoms? What causes it?)</td>
</tr>
<tr>
<td><strong>Data Collection</strong></td>
<td>What does my past experience tell me about this disease? Do I need to know more?</td>
</tr>
<tr>
<td><strong>Health History</strong></td>
<td>Describe what health problems the patient has (Has she/he been diagnosed with other diseases?)</td>
</tr>
<tr>
<td><strong>Data Collection</strong></td>
<td>What are the risk factors that may contribute to health problems, such as smoking?</td>
</tr>
<tr>
<td></td>
<td>Detail any and all previous treatments (Has she/he had any prior surgeries or is he/she on medication?)</td>
</tr>
<tr>
<td></td>
<td>What are the patient’s strengths, weaknesses?</td>
</tr>
<tr>
<td><strong>Nursing Physical Assessment and Issue Identify</strong></td>
<td>What information do I need?</td>
</tr>
<tr>
<td></td>
<td>How do I get the information I need? Are there other questions I should ask?</td>
</tr>
<tr>
<td></td>
<td>Data gather. List all the patient’s health stats with specific numbers/levels (Blood pressure, bowel sounds, ambulation, etc.).</td>
</tr>
<tr>
<td></td>
<td>Is my data valid?</td>
</tr>
<tr>
<td></td>
<td>Identify and list actual and potential nursing issues.</td>
</tr>
<tr>
<td><strong>Related Treatments</strong></td>
<td>Recognize what treatments the patient is receiving because of his/her disease</td>
</tr>
<tr>
<td><strong>Nursing Diagnosis &amp; Patient Goal</strong></td>
<td>What does the data mean?, Is the data based on fact? What should I do?</td>
</tr>
<tr>
<td></td>
<td>Identify what the nursing diagnosis should be (What is the main problem for this patient? What needed to be addressed?)</td>
</tr>
<tr>
<td></td>
<td>Describe what the goal should be for helping the patient recover (What should the patient accomplish? What needs to change for the patient? What time frame?)</td>
</tr>
<tr>
<td><strong>Nursing Care Plan</strong></td>
<td>Outline a care plan—what interventions should be put into action? Is the plan specialized?</td>
</tr>
<tr>
<td></td>
<td>Ask: is this the best way to deal with the issue?</td>
</tr>
<tr>
<td><strong>Nursing Interventions</strong></td>
<td>Explain how the nursing goals can be accomplished, and support this with citations (Reference the literature)</td>
</tr>
<tr>
<td></td>
<td>Is there a change in status that needs an immediate change in the plan?</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>Explain how effective the nursing intervention was (What happened after the nursing intervention? Did the patient get better?)—What are you going to report? What are you going to chart?</td>
</tr>
<tr>
<td><strong>Recommendations</strong></td>
<td>Explain what the patient or nurse should do in the future to continue recovery/improvement</td>
</tr>
<tr>
<td>Assessment Data</td>
<td>Nursing Diagnosis</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Physical Assessment</td>
<td>* See: Complete List of NANDA Nursing Diagnoses online</td>
</tr>
<tr>
<td>Q &amp; A</td>
<td></td>
</tr>
</tbody>
</table>

* See Impact of poor documentation
# NURSING CARE PLANS

<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>NURSING DIAGNOSIS</th>
<th>PLANNING</th>
<th>IMPLEMENTATION</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>(supportive data)</td>
<td>(patient's need)</td>
<td>(nursing care needed)</td>
<td>(documentation of care)</td>
<td>(status of the goal)</td>
</tr>
</tbody>
</table>

## FACTUAL DATA

Supports your problem. This information has to be current, or perhaps past history and NOT “make believe”. Think of it as supportive data that proves you have an actual or potential problem. It must have at least 2 pieces of information to support problem.

Ask yourself, “Why do I think this is a problem?”

Think about your pt’s:
1. Medical Diagnoses
   - S & S from Dx that your pt is having right now
   - If no S&S right now, just list the Dx as support
2. Medication List
   - Side effects?
3. Abnormal Lab?

## PROBLEM STATEMENT

This is the name you give the problem. Ask yourself, “What is the problem?” You can use the NANDA list of problem statements OR if none apply, make a problem statement using one of the words:
- Alteration
- Impaired
- Deficit
- Ineffective
- Dysfunction
- Intolerance
- Excess

Refrain from using:
- Decreased Cardiac Output
- Disuse Syndrome
- Impaired Gas Exchange
- Impaired Physical Mobility
- Decreased Mobility (of any kind)
- Risk for Infection
- Risk for Ineffective Management of Therapeutic Regimen

*These problems must have specific data, measurements, lab tests, etc. in order to use these problems.

*There may be some very specific cases where it may be applicable. Think, what can an “infection” cause? Use that as a problem instead.

## NURSING PLAN FOR PROBLEM

Ask yourself, “What can I do for the problem?”

These are not to be numbered.

Think about the following:
- Observations you make related to this problem. (include assessment of the pt re: to the body systeme: this problem, diagnostic tests, and reporting of findings to charge nurse. (Use your senses).
- Tasks you can do (things you can do to prevent, repair, or reduce the problem). This includes medication adyn, oxygen, dressing changes, turning, enema, catheter insertion, nutrition, fluids, etc.

Teaching of patient & family (includes not only what the doctors orders but what you as the “nurse” will teach the patient. Also should include how you will determine the patient’s understanding of the teaching.)

Be very SPECIFIC and very THOROUGH. Include details like how much, frequency (how often), etc.

DATE REVISIONS OR ADDITIONS EVERY DAY!

## IMPLEMENTATION

Ask, “What will I document?”

Any information that pertains to the problem.

This is your actual narrative charting notes just like on your Assessment Sheet in Level 1 or charted observations in the nurses notes in the chart. NOTE: This is NOT a restatement of your plan in the past tense! Also it DOES NOT have to address each part of the plan. DO NOT number this section or leave spaces. Also any conclusions, or judgments that are improper in charting are not proper here.

Students have best results in learning how to word this section when they do not even look at the planning section.

Document: Date/Time
1. Observations you made
2. Reporting observations and changes in condition to appropriate personnel
3. Care given to the patient
4. Response of the pt to the care
5. Results of your actions, diagnostic tests, medications administered, etc.
6. Teaching specific to patient meds, needs, problems, preventative care.

DATE ENTRY EVERY DAY!

## EVALUATION

Ask yourself, “Did I accomplish my goal?”

1. Look at your goal & ask yourself a question related to it - whether your Goal was met completely, met partially, or not met at all. Write this down.
2. Answer the question in a Summarized Evaluation Statement and relate it to the Measurable Part of the Goal. Write this down.
3. Does the problem or potential for the problem still exist? Write this down.
4. Then, state if you will Continue with your plan - either as stated or as revised or Discontinue Plan. Write this down.

**NOTE:** You must have something to back up this evaluation in your documentation in the Implementation column (Implementation supports or proves your evaluation statement).

Example:
Goal was partially met. The patient washed his face but did not brush his teeth himself. The problem still exists. Continue with the plan as revised.
Impact of Poor Documentation

Inadequate or Incomplete charting → Lack of communication between members of the care team →

- Errors that contribute to patient harm
- Patient dissatisfaction
- Staff frustration & dissatisfaction
- Disciplinary action

Legal Implications
CASE SCENARIO

Maria is a 70-year-old woman who developed 5/10 sub-sternal chest pain (on a 0-10 pain scale) and shortness of breath.

Upon arrival in the ED, Maria was somewhat anxious. The ER nurse assessment included:

- Vital signs: 110/70 mm Hg, 92 bpm and regular, afebrile, saturating at 92% on supplemental oxygen.
- Weight was 190 pounds; body mass index (BMI), 32.
- A jugular venous pressure (JVP) at 5 cm above the clavicle and a laterally displaced point of maximal impulse, S4 and S3, and a 3/6 systolic murmur of mitral regurgitation.
- Hepatojugular reflux (HJR).
- 1+ pitting edema to mid shin bilaterally.

She is admitted to a medical floor with an initial diagnosis of congestive heart failure (CHF).

Upon arrival to the floor, she is received with the following orders from the admitting physician:

- Heart monitor
- Insert INT needle
- Heparin drip at 1200 units per hour
- VS q 4 hours and prn
- OOB TID
- Low Na+ diet
- Insert foley catheter
- I & O

The medical admitting nurse assesses the following:

- alert and oriented x 3, color pale, skin warm and dry
- BP 100/60, HR 80 and regular, RR-26, Temp 97
- mild oxygen desaturation on room air at 88%.
- 2+ pedal edema and pedal pulses present (2+ PT and DP)
- EKG showed normal sinus rhythm with no acute abnormalities
- abdomen soft and tender
CASE SCENARIO

History included hypertension for 40 years, mild obesity, and hyperlipidemia. She has a 30-pack year history of smoking and no history of alcohol or illicit drug abuse.

She has no diabetes, kidney disease, or family history of early heart disease. Her medications include hydrochlorothiazide (HCTZ) 25 mg daily, which she has taken for the last 10 years, and simvastatin 20 mg daily.

Recent history includes one month of progressive dyspnea on exertion, fatigue, abdominal bloating, and lower extremity edema without anginal symptoms, diaphoresis, nausea, palpitations, or dizziness. Over the past week, she had a few episodes of paroxysmal nocturnal dyspnea and orthopnea.

Diagnostic findings included:

- an elevated brain natriuretic peptide (BNP) at 1,100 picograms per milliliter
- serial troponins and other labs were negative
- chest x-ray revealed an enlarged cardiac silhouette, mild pulmonary edema without effusion, and consolidation
- echocardiogram revealed a LVEF of 32%, with dilatation, no wall motion abnormalities
- serial EKGs were normal

During her hospitalization, Maria received diuretic therapy with improvement in her symptoms. Her BNP dropped to 200 picograms per milliliter; other labs remained stable; oxygen saturation normalized on room air.

At discharge, her exam demonstrated a 10-pound weight loss with resolution of the HJR and lower extremity edema. Cardiac exam was significant for ongoing lateral point of maximal impulse PMI, or apical impulse, 3/6 systolic murmur of mitral regurgitation, and resolution of the S3. The JVP was at the clavicle.

Discharge medications included furosemide 20 mg PO daily, lisinopril 10 mg daily, simvastatin 20 mg daily at bedtime, and carvedilol 3.125 mg twice a day. The side effects and reasons for use for each medication were reviewed.
SMALL GROUP INTERACTION

Calculate how many cc’s/hour the heparin drip should infuse to deliver 1200 units per hour (the pharmacy sends a heparin drip that contains 25,000 units of heparin in 250cc D5W).

Heparin Drip Calculation Reference
(sample calculations for reference only!)

Heparin Infusion Rate: Total Units (in IV bag) = Units/hour
Total Volume (ml) X (ml/hour)

Your patient has a DVT is ordered for a heparin infusion to start at 18 units/kg/hour per the practitioner's order. His weight is 75kg. The heparin infusion comes in a 500ml bag with 25,000 units. Calculate the starting rate of the infusion (ml/hour).

Step 1: Calculate the starting units per hour.
18 units X 75 kg = 1350 units/hour

Step 2: Calculate the starting rate of the Infusion (solve for X).

Heparin Infusion Rate: 25,000 units = 1350 units/hour
500ml X (ml/hour)

25,000 units (X ml/hr) = 675,000
X ml/hr = 675,000
25,000

X = 27 ml/hour

Your patient’s PTT result is 55. Per the Intravenous High Intensity Heparin Nomogram (for DVT/PE), the infusion dose should be increased by 2 units/kg/hour. Your patient is currently receiving an infusion based on 18/units/kg/hour. What is the new rate for the infusion (note: use the same initial weight to calculate the new rate).

Step 1: Calculate the new units per hour.
18 units/kg/hour + 2 units/kg/hour = 20 units/kg/hour
20 units X 75 kg = 1500 units/hour

Step 2: Calculate the new rate of the infusion (solve for X).

Heparin Infusion Rate: 25,000 units = 1500 units/hour
500ml X (ml/hour)

25,000 units (X ml/hr) = 750,000
X ml/hr = 750,000
25,000

X = 30 ml/hour
STOP AND THINK

<table>
<thead>
<tr>
<th>Condition: Heart Failure</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender/Age</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Legal/Ethical</td>
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<tr>
<td>Socioeconomic</td>
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<tr>
<td>Cultural Considerations</td>
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<tr>
<td>Communication Orientation</td>
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<tr>
<td>Pre/Co-existing conditions</td>
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<tr>
<td>Present Condition Prioritization</td>
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<tr>
<td>Pharmacologic</td>
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<tr>
<td>Alternative Therapy</td>
<td></td>
</tr>
<tr>
<td>Delegation of care</td>
<td></td>
</tr>
</tbody>
</table>

What do you know?

What do you need to know?
What abnormal assessment findings are present upon admission to the ER?

What abnormal assessment findings are present upon admission to the medical floor?

What potential problems could occur?

What 2 nursing diagnoses can you identify?

What 2 nursing interventions would be appropriate for this patient?

How do you use BNP measurements to guide diagnosis and treatment of heart failure?

The patient was discharged on a diuretic. Why was potassium not started?

Why was a beta-blocker started?

What assessments should be done at the first outpatient visit?
PLEASE FILL OUT YOUR EVALUATION