Module 3 Study Guide

NAP 302: Evidence-Based Practice

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Topic: Critical Thinking and Evidence-Based Practice

Required Readings

1. Johns Hopkins Nursing Evidence-Based Practice (JHNEBP), Chapters 2 & 3
2. WHO Safe Surgery Saves Lives Guidelines (2009)
3. Bedwell et al. Perioperative Nurses' Priorities for Perioperative Research in Africa
4. Module 3 Lecture: Critical Thinking and Evidence-Based Practice

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Module 3 Learning Objectives

By the end of this module, you should be able to:

1. Define critical thinking.
2. Explain evidence-based practice (EBP).
3. Describe the Johns Hopkins EBP Model.
4. Explain the PET process.
5. Develop a simple PICO question.
6. Identify the 10 WHO Safe Surgery objectives.
7. Explain the purpose of the WHO Surgical Safety Checklist.
8. Discuss perioperative research priorities in Africa.
9. Identify a priority anesthesia problem in Liberia for an EBP project.
10. Explain how critical thinking improves anesthesia practice.

Part 1: What is Critical Thinking?

Critical thinking is:

> The process of questioning, gathering information, analyzing information, drawing conclusions, and taking action based on evidence.

Critical thinking helps CRNAs make safe clinical decisions.

Examples in Anesthesia

- Managing a difficult airway
- Treating hypotension
- Responding to hypoxia
- Managing blood loss
- Choosing the safest anesthetic technique

A critical thinker asks:

- What is happening?
- Why is it happening?
- What evidence supports my decision?
- Is there another explanation?

Characteristics of Critical Thinkers

Strong critical thinkers are:

- Curious
- Open-minded
- Flexible
- Reflective
- Honest
- Persistent
- Creative
- Confident

These traits lead to safer patient care.

Reasoning, Reflection, and Judgment

Reasoning

Using facts and observations to reach conclusions.

Example:

- Low oxygen saturation
- Increased work of breathing

Reasoning:

The patient may be developing respiratory failure.

Reflection

Thinking deeply about an experience.

Example:

"What caused this complication?"

"How can I improve next time?"

Judgment

Making decisions based on evidence and logic.

Example:

Choosing spinal anesthesia instead of general anesthesia for a patient with severe pulmonary disease.

Four Types of Evidence

CRNAs use four types of evidence:

1. Empirical Evidence

Scientific research and studies.

Example:

Research showing pulse oximetry improves anesthesia safety.

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2. Ethical Evidence

Patient values and preferences.

Example:

Respecting informed consent.

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3. Personal Evidence

Knowledge gained through experience.

Example:

Recognizing signs of difficult intubation.

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4. Aesthetic Evidence

Clinical intuition and understanding.

Example:

Recognizing that a patient appears critically ill despite normal numbers.

Part 2: What is Evidence-Based Practice (EBP)?

Evidence-Based Practice means combining:

1. Best research evidence
2. Clinical expertise
3. Patient values and preferences

to make healthcare decisions.

Why is EBP Important?

EBP helps us:

- Improve patient outcomes
- Reduce complications
- Increase safety
- Reduce mortality
- Use resources wisely
- Reduce unnecessary variations in care

For Liberian CRNAs, EBP helps ensure that anesthesia practice is based on science rather than habit or tradition.

Part 3: The Johns Hopkins Evidence-Based Practice Model

The Johns Hopkins Model helps clinicians answer practice problems in a systematic way.

The model has three major components:

Inquiry

Ask questions.

Practice

Provide care using evidence.

Learning

Continuously improve knowledge.

Inquiry

Inquiry means being curious and questioning practice.

Example:

"Does using the WHO Surgical Checklist reduce complications?"

A spirit of inquiry is the starting point of EBP.

Practice

Practice is what clinicians do every day:

- Assess patients
- Administer anesthesia
- Manage airways
- Monitor vital signs
- Treat complications

The goal is for practice to be based on evidence.

Learning

Healthcare changes constantly.

CRNAs must:

- Read current evidence
- Learn from experience
- Improve skills
- Participate in quality improvement

Evidence-based providers are lifelong learners.

Part 4: The PET Process

The Johns Hopkins Model uses PET:

P = Practice Question

E = Evidence

T = Translation

Step 1: Practice Question

Identify a clinical problem.

Examples:

- Poor pain management
- Inadequate monitoring
- Surgical site infections
- Delays in antibiotics
- Airway complications

The question should be specific and answerable.

Sources of Practice Problems

Problems often come from:

Problem-Focused Triggers

- Poor patient outcomes

- Safety concerns
- High infection rates
- High costs
- Variation in practice

Knowledge-Focused Triggers

- New research
- New guidelines
- New technologies
- New standards

Improvement Science Questions

When studying a clinical problem, ask:

1. What is the problem?

Example: Postoperative pain is poorly controlled.

2. Why is this important?

Poor pain control delays recovery and increases suffering.

3. How will we study or improve it?

Collect data or implement a change.

4. What did we find?

Analyze results.

5. What do the findings mean?

Interpret the evidence.

6. What should we recommend?

Develop practical solutions.

Step 2: Evidence

Search for the best available evidence.

Common sources include:

- PubMed

- CINAHL
- Cochrane Library
- Joanna Briggs Institute
- WHO Guidelines

Step 3: Translation

Apply evidence to practice.

Examples:

- Introduce a checklist
- Improve airway assessment
- Standardize pain protocols
- Improve infection prevention

The goal is better patient outcomes.

Part 5: PICO Questions

PICO helps develop good EBP questions.

Letter	Meaning
P	Patient/Problem
I	Intervention
C	Comparison
O	Outcome

Example PICO Question

P

Adult surgical patients

I

WHO Surgical Safety Checklist

C

No checklist

O

Reduced postoperative complications

Question:

> In adult surgical patients, does use of the WHO Surgical Safety Checklist reduce postoperative complications compared with usual care?

Part 6: Safe Surgery Saves Lives

The WHO identified surgical complications as a major cause of death and disability worldwide. Millions of patients experience preventable complications every year.

To improve outcomes, WHO developed evidence-based safety standards and the Surgical Safety Checklist.

The 10 WHO Safe Surgery Objectives

Know these objectives well.

1. Correct Patient, Correct Procedure, Correct Site

Confirm identity and procedure before surgery.

2. Prevent Harm from Anesthesia

Use safe anesthesia practices and monitoring.

3. Prepare for Airway Emergencies

Assess airway and have backup plans.

4. Prepare for Major Blood Loss

Assess risks and ensure access to blood products.

5. Avoid Medication Errors and Allergic Reactions

Confirm medications and allergies.

6. Prevent Surgical Site Infection

Use sterile technique and antibiotics appropriately.

7. Prevent Retained Instruments and Sponges

Perform correct surgical counts.

8. Properly Label Surgical Specimens

Correct labeling prevents errors.

9. Improve Team Communication

Strong communication improves patient safety.

10. Measure Surgical Outcomes

Collect data to improve quality.

Part 7: WHO Surgical Safety Checklist

The WHO Checklist has three phases.

Sign In

Before anesthesia.

Check:

- Patient identity
- Consent
- Surgical site
- Allergies
- Airway risk
- Blood loss risk

Time Out

Before incision.

Discuss:

- Procedure
- Antibiotics
- Expected challenges
- Team concerns

Sign Out

Before leaving the operating room.

Confirm:

- Procedure completed
- Counts correct
- Specimens labeled
- Recovery plan

Why the Checklist Matters

The checklist:

- Improves communication
- Reduces complications
- Reduces mortality
- Promotes teamwork
- Improves patient safety

Part 8: Priority Perioperative Research Areas in Africa

African perioperative nurses identified major priorities for improving patient care.

Top priorities include:

1. Translating research into practice
2. Building research culture
3. Pain management
4. Critical care resources
5. Sterile technique
6. Staff burnout
7. Infection prevention
8. Communication
9. Surgical safety checklist implementation
10. Quality surgical care

What Does This Mean for Liberia?

Many priorities apply directly to Liberian anesthesia practice:

- Limited workforce
- Limited resources
- Infection prevention challenges
- Postoperative pain management
- Monitoring availability
- Safe surgery checklist use
- Continuing education

These issues may become EBP project topics.

Preparing for Your EBP Project

When discussing project topics, ask:

What problem do we see most often?

Examples:

- Poor postoperative pain management
- Inadequate monitoring
- Delays in antibiotic administration
- Inconsistent use of the surgical checklist
- Limited critical care resources
- Poor communication during handoff

Is there evidence about this problem?

Search:

- WHO guidelines
- Research articles
- African perioperative literature
- Local hospital data

Can this problem be improved?

Choose a project that is meaningful and possible to address.

Key Take-Home Messages

✅ Critical thinking is essential for safe anesthesia care.

✅ Evidence-Based Practice combines research evidence, clinical expertise, and patient values.

✅ The Johns Hopkins Model provides a structured approach to solving clinical problems.

✅ PET stands for Practice Question, Evidence, and Translation.

✅ PICO helps create answerable clinical questions.

✅ Safe surgery requires teamwork and communication.

✅ The WHO Surgical Checklist improves patient outcomes.

✅ Liberia faces many perioperative challenges that can be improved through EBP.

✅ CRNAs are leaders in improving patient safety through evidence-based care.

Self-Study Questions

1. What is critical thinking?
2. What are reasoning, reflection, and judgment?
3. What are the four types of evidence?
4. Define Evidence-Based Practice.
5. What are the three components of the Johns Hopkins Model?
6. What does PET stand for?
7. What does PICO stand for?
8. What is the difference between problem-focused and knowledge-focused triggers?
9. What are the 10 WHO Safe Surgery objectives?
10. What are the three phases of the WHO Surgical Safety Checklist?
11. Why is communication important in patient safety?
12. What perioperative problems are priorities in Africa?
13. Which of these priorities are important in Liberia?
14. What anesthesia-related problem would you select for your EBP project and why?

Sources: the review is drawn from the required reading.