Exploration of Specialty Certification for Nurse Anesthetists: Nonsurgical Pain Management as a Test Case

Duke University School of Nursing - DNP Capstone

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Setting and Population

- This capstone project was planned in partnership with the National Board on Certification and Recertification of Nurse Anesthetists (NBCRNA)

- Support and resource information was coordinated through the Executive Director of NBCRNA, Dr. Karen Plaus, PhD, CRNA, FAAN

- The population addressed in this capstone project was Certified Registered Nurse Anesthetists (CRNA) who practice in the specialty of non-surgical pain management (NSPM)
Background

• Chronic pain as a physical and psychological disability

• Certified Registered Nurse Anesthetists (CRNA) and the management of chronic pain

• Licensing and credentialing

• The role of the National Board on Certification and Recertification of Nurse Anesthetists (NBCRNA)
APRN Specialties
Preparation in a specialty area of practice is optional, but if included must build on the APRN role/population-focused competencies. Specialty practice represents a much more focused area of preparation and practice than does the APRN role/population focus level. Specialty practice may focus on specific patient populations beyond those identified or health care needs such as oncology, palliative care, substance abuse, or nephrology. The criteria for defining an APRN specialty is built upon the ANA (2004) Criteria for Recognition as a Nursing Specialty (see Appendix B). APRN specialty education and practice build upon and are in addition to the education and practice of the APRN role and population focus. For example, a family CNP could specialize in elder care or nephrology; an Adult-Gerontology CNS could specialize in palliative care; a CRNA could specialize in pain management; or a CNM could specialize in care of the post-menopausal woman. State licensing boards will not regulate the APRN at the level of specialties in this APRN Regulatory Model. Professional certification in the specialty area of practice is strongly recommended.
Problem

• Scope and competency of CRNA practice in non-surgical pain management (NSPM)

• Benefits of competency recognition
Measurement of Competency

- Defined
- Purpose
- Process
- Bridging the gap
Goals

1. Identification of the target group
2. Identification of assessment tools
3. Identification of resources
4. Development of a knowledge and skill set outline
### Target Group

- Self Identified as NSPM practitioner, or
- Meeting minimum Curriculum requirements, or
- Meeting recommended continuing education requirements (100 CEUs in NSPM over 5 years), or
- Meeting minimum Practice requirement (minimum of 320 hrs. per yr. and 10 procedures a week), or
- Combination of two or more of these groups

<table>
<thead>
<tr>
<th>Content</th>
<th>Minimum contact hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical foundation of pain.</td>
<td>10</td>
</tr>
<tr>
<td>Imaging and radiation safety</td>
<td>10</td>
</tr>
<tr>
<td>Assessment/diagnosis/integration/referral.</td>
<td>30</td>
</tr>
<tr>
<td>Pharmacological treatments</td>
<td>10</td>
</tr>
<tr>
<td>Interventional pain strategies</td>
<td>40</td>
</tr>
<tr>
<td>Comprehensive pain treatments</td>
<td>20</td>
</tr>
</tbody>
</table>
Assessment Tools

- Continuing education
- Written exams
- Oral exams
- Peer Review and Quality Assessment
- Chart review
- Reference from other specialists
- Self-assessment
- Holding credentials at an accredited facility
Resources

• Sources used as references for NSPM
Competency Outline

• Theoretical foundation of pain (8% of the test)

• Imaging and radiation safety (8% of the test)

• Assessment/diagnosis/integration/referral (26% of the test)

• Pharmacological treatment (8% of the test)

• Interventional pain strategies (34% of the test)

• Comprehensive pain treatments (16% of the test)
Skill Set Outline

• Recognition of anatomical structure in various planes of view

• Identification of anatomical components under fluoroscopy

• Proper placement of needle for:
  • *Lumbar epidural injection*
  • *Thoracic epidural injection*
  • *Cervical epidural injection*
  • *Sacroiliac joint injection*
  • *Facet injection*
Methodology

• Advisory Panel (AC)
  • Purpose
  • Experts in the field
  • Qualification
Delphi Method

- Defined
- Characteristics
- Process
Statistical Analysis

- Descriptive statistics
- Fidelity
- Validity
- Reliability
Data Set #1 Evaluation

• Target Group
  • Select 1 of 7 options (Question #1)
    1. Any CRNA who self-identifies as practicing in NSPM
    2. Those who can demonstrate they have completed the curriculum content outlined by NBCRNA
    3. Those who have obtained 100 hrs of approved CE credits in NSPM education in the last 5 years
    4. Those who can demonstrate they have practiced in NSPM for a minimum of 320 hours per year with a minimum of 10 procedures per week over the last five years
    5. Those who have meet the requirements of # 2 and #3
    6. Those who have meet the requirements of #2, #3, and #4
    7. Other:

Threshold for consensus (80%)

• Are the practice requirements in #4 appropriate (Question #2)
### Data Set #1 Results (Target Group)

#### Statistical Analysis Question #1 Data Set #1 Round 1

<table>
<thead>
<tr>
<th>Choice</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Exam</td>
<td>0</td>
<td>37.5%</td>
<td>0</td>
<td>0</td>
<td>50.0%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Subsequent Exams</td>
<td>12.5%</td>
<td>25.0%</td>
<td>0</td>
<td>0</td>
<td>37.5%</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

#### Statistical Analysis Question #1 Data Set #1 Round 2

<table>
<thead>
<tr>
<th>Choice</th>
<th>2</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
<td>Initial Exam</td>
<td>75.0%</td>
<td>25.0%</td>
<td>0</td>
</tr>
<tr>
<td>Subsequent Exams</td>
<td>0</td>
<td>37.5%</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

#### Statistical Analysis Question #1 Data Set #1 Round 3

<table>
<thead>
<tr>
<th>Choice</th>
<th>2</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Exam</td>
<td>12.5%</td>
<td>87.5%</td>
</tr>
<tr>
<td>Subsequent Exams</td>
<td>0</td>
<td>100%</td>
</tr>
</tbody>
</table>
Data Set #1 Results (Target Group)

- **Question #2:** Do you feel the number of practice hours and procedures listed in #4 above are too much, and if so, what numbers should they be?

<table>
<thead>
<tr>
<th>Those answering yes to this question</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Those answering no to this question</td>
<td>1</td>
</tr>
<tr>
<td>Mean time suggested</td>
<td>192.0 hrs.</td>
</tr>
<tr>
<td>Mean # of procedure suggested</td>
<td>6.25</td>
</tr>
<tr>
<td>Median time suggested</td>
<td>160.0 hrs.</td>
</tr>
<tr>
<td>Median # of procedure suggested</td>
<td>5</td>
</tr>
<tr>
<td>Standard Deviation (Time)</td>
<td>142.9 hrs.</td>
</tr>
<tr>
<td>Standard Deviation (procedure #)</td>
<td>2.6</td>
</tr>
<tr>
<td># responding to time suggestion</td>
<td>5</td>
</tr>
<tr>
<td># responding to procedure suggestion</td>
<td>4</td>
</tr>
</tbody>
</table>
Hours of Clinical Practice

• Little evidence to suggest that a required number of clinical hours translates into skill acquisition and competency.
  Berg, Hawkins-Walsh, Gaylord, Lindeke, & Docherty, (2011)

• Issues concerning the complexity of clinical experience.
Data Set #2 Evaluation

- Assessment Tools
  - Likert Scale (3 point scale, 1=agree, 2=somewhat agree, 3=disagree)

Threshold for consensus (mean < 2.0, variance <0.5)
## Data Set #2 Results (Assessment tools)

1 = Agree  
2 = Somewhat appropriate  
3 = Inappropriate

<table>
<thead>
<tr>
<th>Assessment Tool</th>
<th>Total 1+ 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuing education requirements prior to credentialing</td>
<td>75.0%</td>
</tr>
<tr>
<td>Written exams</td>
<td>87.5%</td>
</tr>
<tr>
<td>Oral exams</td>
<td>62.5%</td>
</tr>
<tr>
<td>Peer Review and Quality Assessment</td>
<td>75.0%</td>
</tr>
<tr>
<td>Chart review</td>
<td>75.0%</td>
</tr>
<tr>
<td>Reference from other specialists</td>
<td>62.5%</td>
</tr>
<tr>
<td>Self-assessment</td>
<td>62.5%</td>
</tr>
<tr>
<td>Holding credentials at an accredited facility</td>
<td>75.0%</td>
</tr>
<tr>
<td>Demonstration of technical skills</td>
<td>87.5%</td>
</tr>
<tr>
<td>Clinical practice requirements</td>
<td>100%</td>
</tr>
<tr>
<td>Completion of an established curricular content prior to credentialing</td>
<td>87.5%</td>
</tr>
</tbody>
</table>
Data Set #3 Evaluation

• Resources
  • AC to provide a list of best resource material for NSPM
Data Set #4 Evaluation

- Table of Specification (Outline)
  - Same method and threshold as Data Set #2
  - Weighted test domains

Threshold for consensus (mean < 2.0, variance < 0.5)
Data Set #4 Results (Outline)

- **Theoretical foundation of pain (8% of the test)**
- **Clinical Practice**
  - Anatomy and physiology of the spine
  - Factors influencing pain
  - Cellular response to pain and treatment
- **Practice Evaluation and Improvement**
  - Evidence based principles
  - Opportunities for practice improvement
  - Pain classifications
- **Professional Responsibility**
  - Standards of care
  - Sources of contemporary information
Data Set #4 Results (Outline)

- **Imaging and radiation safety (8% of the test)**
  - Clinical Practice
    - Evaluation of equipment
    - Equipment safety
    - Radiation safety
    - Safe practices with imaging equipment
    - Indications for advanced imaging
  - Practice Evaluation and Improvement
    - Patient Safety
    - Provider and Staff Safety
  - Professional Responsibility
    - Statutory requirements
    - Facility regulations
    - Sources of contemporary information
Data Set #4 Results (Outline)

• **Assessment/diagnosis/integration/referral (26% of the test)**
• **Clinical Practice**
  • Pathophysiology
  • Physical Examination
  • Health History
  • Diagnostic studies
  • Documentation
  • Data interpretation
• **Practice Evaluation and Improvement**
  • Evaluation of clinical judgment
  • Consultation
  • Care coordination
  • Reporting
• **Professional Responsibility**
  • Statutory requirements
  • Facility regulations
Data Set #4 Results (Outline)

- Pharmacological treatment (8% of the test)
- Clinical Practice
  - Pharmacology of pain
  - Drugs for pain intervention
  - Drug interactions
  - Risks and benefits of drug therapy
- Practice Evaluation and Improvement
  - Patient safety
- Professional Responsibility
  - Statutory requirements
  - Safe drug practices
Data Set #4 Results (Outline)

- Interventional pain strategies (34% of the test)
- Clinical Practice
  - Diagnosis of pain generators
  - Targeted treatment of pain
  - Global treatment of pain
  - Development of care plan
  - Implementation of care plan
  - Consideration of patient’s health status
  - Treating myofascial pain
  - Trigger point pathology and treatment
  - Imaging strategies
  - Intervention for complications
- Practice Evaluation and Improvement
  - Treatment goals
- Professional Responsibility
  - Collaboration strategies
  - Sources of contemporary information
Data Set #4 Results (Outline)

- **Comprehensive pain treatments (16% of the test)**
- **Clinical Practice**
  - Informed Consent
  - Protection of patient rights
  - Patient monitoring
  - Consideration of patient needs
  - Post-procedure follow-up
  - Multidisciplinary pain management
- **Practice Evaluation and Improvement**
  - Outcome measurements
  - Patient follow-up
- **Professional Responsibility**
  - Multidimensional pain management
  - Sources of contemporary information
Data Set #4 Results (Outline)

**Skill Set**
- Recognition of anatomical structure in various planes of view
- Identification of anatomical components under fluoroscopy
- Proper placement of needle for:
  - *Transforaminal epidural injection*
  - *Thoracic epidural injection*
  - *Cervical epidural injection*
  - *Sacroiliac joint injection*
  - *Facet injection*
Data Set #4 Results (Outline)

- All components *appropriate* for weight, curriculum content, and technical skills. (87.5%)

- Content should be directed toward theoretical foundations of pain and pharmacology. (12.5%)
CRNA Sample Survey

- CRNAs self Identified as practicing NSPM
  - n= 611
- Surveys returned
  - n=155 (25.36%)
- Acceptance threshold: 80%
- Interrater reliability
  - Kappa = .68
  - Substantial level of agreement
Recommendations

CRNAs who qualify to be certified and/or recertified in NSPM should demonstrate the following:

1. Completion of a curriculum content outlined by the NBCRNA

2. Successfully complete a written examination and technical demonstration of skills, for NSPM

3. Completion of 100 hours of approved Continuing Education in the prior 5 year period

4. Have an active practice in pain management
Considerations

• Demonstration of active clinical practice
• Verification of an active clinical practice
• Examinations should be conducted by peers
• Continuing education
• Access to educational programs
• Development of curriculum
Validity / Reliability / Fidelity

- **Validity** – *Delphi Method*
- **Reliability** – CRNA survey sample
- **Fidelity** – NBCRNA
Conclusion

• NBCRNA vision

• Recognition

• Sustainability
Questions?