Knowledge and utilization of the perioperative nursing data set by perioperative staff nurses in southeastern Michigan

Jill Ortmann

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Knowledge and Utilization of the Perioperative Nursing Data Set by Perioperative Staff Nurses in Southeastern Michigan

by

Jill Ortmann, RN, BSN, CNOR

Thesis

Submitted to the School of Nursing
College of Health and Human Services
Eastern Michigan University
in partial fulfillment of the requirements
For the degree of

MASTER OF SCIENCE
in
Nursing

Thesis Committee:

Lorraine M. Wilson, RN, PhD, Chair

Virginia Lan, RN, PhD

January 7, 2008

Ypsilanti, Michigan
Dedication

This thesis is dedicated to my husband, Walt, and my children, Jacob and Sarah. I never would have been able to complete this thesis without their patience, support, and cooperation. They are the cornerstones of my life and enable me to accomplish my goals with an eye on what is really important in life.
Acknowledgements

I would like to thank all of the people who helped, guided, and gave me insight to this “foreign” world of clinical research. I would like to thank Dr. Doug Feldman, of the Veterans Affairs Ann Arbor Medical Center, for guiding me through my first clinical human subjects application. Without his input, advice, and patience, I might never have gone on to submit my project to two other health care systems. I would also like to thank David Ronig for his statistical advice as he looked over my data and analysis. Finally, I would like to thank all of my colleagues at the VA. They were my “guinea pigs,” if you will, and completed the test run of my survey with enthusiasm and support.

At the University of Michigan Healthcare System, I would like to thank Belinda Adamson, M.Ed, CCRC, CIP, Senior Associate Regulatory Analyst, Shawn Murphy, RN, BSN, MSN, CNOR, Director of Nursing OR/PACU and Rudi Rabe, RN, BSN, OR Manager, East Ann Arbor Ambulatory Surgery Center. Belinda helped me get through the IRB process at the University of Michigan Healthcare System. She was prompt and knowledgeable in dealing with my multitude of questions and made the process much more clear. Rudi became my sponsor for the study at the University of Michigan. This enabled me to be able to conduct my study at the University of Michigan. Shawn scheduled the times for my presentations, which allowed me to complete my survey in all five of the perioperative areas within a time span of three weeks. Her dynamic support of my research was essential in my ability to collect important data from this large group of perioperative nurses.

Michelle Diepenhorst, RN, the charge nurses at St. Joseph’s Mercy Hospital, and
Robin were crucial to the success of my study at the St. Joseph Mercy Healthcare System. They enabled me to meet with their staff and present my study to both the Main OR and the Ambulatory Surgery unit, taking time from their busy in-service agenda.

I would also like to thank all of the perioperative nurses who volunteered to participate in this study. Their input about the Perioperative Nursing Data Set is tremendously valuable and can be utilized in order to improve the care we all can give for our clients experiencing a surgical procedure.

Finally, I am deeply grateful to Dr. Lorraine Wilson, Dr. Virginia Lan, and Dr. Susan Pfoutz for all of their tremendous help and support. Without them, I would never have been able to complete this thesis project. They are extremely dedicated to their students. Their faith in the value of this research never wavered. Their willingness to help me throughout the entire project and their patience in dealing with my frustration kept me going.
Abstract

The purpose of this descriptive/correlational study was to describe what perioperative nurses practicing in southeastern Michigan know about the Perioperative Nursing Data Set (PNDS), how they are utilizing the PNDS, and their opinion of the PNDS, and also to examine the relationship between these variables and demographic data. Four research questions were addressed by the use of a questionnaire.

The results of this study were drawn from the return of 151 questionnaires out of a possible 319 questionnaires submitted to practicing perioperative registered nurses (RNs) in southeastern Michigan (47 percent return rate). These results showed that overall, perioperative RNs did not know much about the PNDS; however, their perceived knowledge of the PNDS was not significantly correlated with their actual knowledge of the PNDS. RNs holding a certificate in nursing in the operating room (CNOR) were significantly more knowledgeable about the PNDS. In the area of utilization, most RNs indicated that they did not know if their facility was using the PNDS in areas such as documentation, either electronically or by paper record, in orientation programs, in staff competencies, or in research. The opinion section showed, however, a general agreement that the PNDS could be beneficial to their practice as perioperative RNs. The opinion section also indicated that most RNs agree they would like to learn more about the PNDS.
# TABLE OF CONTENTS

Dedication ........................................................................................................... ii

Acknowledgements ............................................................................................ iii

Abstract ............................................................................................................... v

List of Tables ....................................................................................................... xi

List of Figures ..................................................................................................... xii

Chapter I: Introduction ....................................................................................... 1

  Significance of the Study .................................................................................. 2
  Significance for nursing ...................................................................................... 2
  Significance for perioperative nursing ................................................................. 2
  Significance of the Perioperative Nursing Data Set (PNDS) .............................. 5

Significance for this Study .................................................................................... 6

Research Problem ............................................................................................... 6

Research Purpose ............................................................................................... 7

Research Questions ............................................................................................. 8

Chapter II: Literature Review ........................................................................... 9

  Overview .......................................................................................................... 9

  Standardized Nursing Language ........................................................................ 9

  Standardized Language for Perioperative Nursing ............................................ 10

    Knowledge of the PNDS .................................................................................. 10

    Utilization of the PNDS .................................................................................. 10

    Opinion of the PNDS ...................................................................................... 11

  Summary .......................................................................................................... 12
Chapter III: Framework ................................................................. 13

Association of periOperative Registered Nurse’s Conceptual Framework ..... 13

Application of the Perioperative Patient Focused Model ......................... 14

Knowledge of the Perioperative Nursing Data Set (PNDS) ....................... 14

Utilization of the PNDS ............................................................... 14

Opinion of the PNDS ................................................................ 16

Demographic data .................................................................. 16

Study Framework ................................................................. 16

Research questions .............................................................. 16

Relevant terms and assumptions .............................................. 19

Chapter IV: Methods ............................................................... 22

Study Design ...................................................................... 22

Rationale .............................................................................. 22

Sample and Setting ............................................................. 23

Sample type ........................................................................ 23

Sample size ........................................................................ 23

Inclusion and exclusion criteria .............................................. 24

Rationale .............................................................................. 24

Measurement ...................................................................... 24

Demographic data ............................................................... 25

Knowledge .......................................................................... 25

Utilization ............................................................................ 25

Opinion ................................................................................ 25
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability and Validity</td>
<td>26</td>
</tr>
<tr>
<td>Reliability</td>
<td>26</td>
</tr>
<tr>
<td>Validity</td>
<td>26</td>
</tr>
<tr>
<td>Data Collection</td>
<td>27</td>
</tr>
<tr>
<td>Ethical Considerations</td>
<td>28</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>29</td>
</tr>
<tr>
<td>Demographic data</td>
<td>29</td>
</tr>
<tr>
<td>Knowledge</td>
<td>29</td>
</tr>
<tr>
<td>Utilization</td>
<td>30</td>
</tr>
<tr>
<td>Opinion</td>
<td>30</td>
</tr>
<tr>
<td>Limitations</td>
<td>30</td>
</tr>
<tr>
<td>Design limitations</td>
<td>30</td>
</tr>
<tr>
<td>Sample limitations</td>
<td>30</td>
</tr>
<tr>
<td>Instrument limitations</td>
<td>31</td>
</tr>
<tr>
<td>Chapter V: Results</td>
<td>32</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>32</td>
</tr>
<tr>
<td>Demographic Data</td>
<td>32</td>
</tr>
<tr>
<td>Facility demographics</td>
<td>32</td>
</tr>
<tr>
<td>Participant demographics</td>
<td>33</td>
</tr>
<tr>
<td>Research Question #1</td>
<td>35</td>
</tr>
<tr>
<td>Research Question #2</td>
<td>36</td>
</tr>
<tr>
<td>Research Question #3</td>
<td>40</td>
</tr>
</tbody>
</table>
Appendix D: Department of Veteran Affairs Human Research and Development Approval Letter ................................................................. 69

Appendix E: College of Health and Human Services Human Subject Review Committee Approval Letter for Main Study ............................... 72

Appendix F: Saint Joseph Mercy Health System Institutional Review Board Approval Letter ................................................................. 73

Appendix G: University of Michigan Institutional Review Board Approval Letter ................................................................................... 75
## List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ANA Recognized Terminologies and Data Element Sets</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>Variable Definitions</td>
<td>18</td>
</tr>
<tr>
<td>3.</td>
<td>New Facility Types</td>
<td>33</td>
</tr>
<tr>
<td>4.</td>
<td>Frequency Distribution of Demographic Variables</td>
<td>34</td>
</tr>
<tr>
<td>5.</td>
<td>Participant Demographic Data of Age, Years in Nursing and Years in Perioperative Nursing</td>
<td>35</td>
</tr>
<tr>
<td>6.</td>
<td>Frequency and Percentage Distribution of Responses to Knowledge Items</td>
<td>37</td>
</tr>
<tr>
<td>7.</td>
<td>Utilization of the PNDS Frequencies and Percentages</td>
<td>38</td>
</tr>
<tr>
<td>8.</td>
<td>Comparison of Facility Type with Utilization of the PNDS</td>
<td>41</td>
</tr>
<tr>
<td>9.</td>
<td>Opinion about the PNDS – Means and Standard Deviations</td>
<td>43</td>
</tr>
<tr>
<td>10.</td>
<td>Comparison of the Total Knowledge Score and AORN Membership</td>
<td>44</td>
</tr>
<tr>
<td>11.</td>
<td>Opinion about the PNDS and CNOR Membership</td>
<td>46</td>
</tr>
</tbody>
</table>
List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Perioperative Patient Focused Model..........................15</td>
</tr>
<tr>
<td>2</td>
<td>Conceptual and Operational Definitions of the Study Variables........20</td>
</tr>
</tbody>
</table>
Chapter I: Introduction

The healthcare system today is a dynamic and evolving entity, changing from a fee-for-service and documentation of services to a managed system centered on process examination and outcomes evaluation (Mead & Henry, 1997). The utilization of an integrated electronic health record (EHR) also impacts how healthcare is accessed and delivered today. As healthcare costs continue to escalate to crisis proportions, demands are being made to quantify and validate the care health professionals provide. In order to accomplish the validation and quantification of care, a need has been identified to develop standard terminologies and define strategies and methods for achieving specified health-related goals or outcomes (Bakken, Parker, Konicek & Campbell, 2000).

What does this mean for nursing in general and perioperative nursing specifically? The answer lies in the development of a common language or terminology to describe precisely what nurses do, for what types of client problems and with what specific outcomes for that client (Clark, 1999). The Association of periOperative Registered Nurses (AORN) has developed such a language for use in all perioperative settings. It is called the Perioperative Nursing Data Set (PNDS) and was the first specialty terminology approved in 1999 by the American Nurses Association (ANA) (Beyea, 2000). The question is raised, however, about the understanding, utilization, and relevance given to such nursing terminologies by the clinical staff nurse working day to day.
Significance of the Study

Significance for nursing. The nursing shortage, limited data about nursing contributions to patient outcomes, and decreasing resources have all led to registered nurse (RN) positions being eliminated or remaining vacant (AORN, 2002). A contributor to the above problems has been the lack of a standardized nursing language (AORN, 2002). This lack is not a recent problem within the nursing profession, either. Florence Nightingale addressed this problem 150 years ago when she said she was not able to find any hospital records that were able to be compared with each other (AORN, 2002). It has also been stated that if nursing cannot name something, it cannot be controlled, taught, financed, researched, or put into public policy (Beyea, 1999). The ANA has defined standard terminologies as being foundational to the standardization of nursing documentation (ANA, 2006b). These standard terminologies will lead to a reduction in errors as well as an increase in quality and continuity of care (ANA). Table 1 shows the Terminologies and Data Element Sets currently recognized by the ANA.

Significance for perioperative nursing. The need for a RN in the surgical setting has been questioned numerous times. Even though recent reports show the value and cost effectiveness of RNs, in general, in lower morbidity and mortality rates (Needleman & Buerhaus, 2002), the use of RNs in the “technical” setting of surgery is still questioned. To validate the need for RNs in the perioperative setting, nursing documentation must reflect professional nursing practice (Beyea, 2001). Perioperative documentation must be more than the check list of tasks and interventions that could be accomplished by a licensed practical nurse (LPN).
<table>
<thead>
<tr>
<th>Data Element Sets</th>
<th>Setting Where Developed</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. NMDS – Nursing Minimum Data Set, currently recognized</td>
<td>All nursing</td>
<td>Clinical data elements</td>
</tr>
<tr>
<td>2. NMMDS – Nursing Management Minimum Data Set, currently recognized</td>
<td>All settings</td>
<td>Nursing administrative data elements</td>
</tr>
<tr>
<td>3. CCC – Clinical Care Classification, currently recognized</td>
<td>Home care</td>
<td>Diagnoses, interventions, and outcomes</td>
</tr>
<tr>
<td>4. ICNP® – International Classification of Nursing Practice, currently recognized</td>
<td>All nursing</td>
<td>Diagnoses, interventions, and outcomes</td>
</tr>
<tr>
<td>5. NANDA – NANDA International, currently recognized</td>
<td>All nursing</td>
<td>Diagnoses</td>
</tr>
<tr>
<td>6. NIC – Nursing Intervention Classification, currently recognized</td>
<td>All nursing</td>
<td>Interventions</td>
</tr>
<tr>
<td>7. NOC – Nursing Outcome Classification, currently recognized</td>
<td>All nursing</td>
<td>Outcomes</td>
</tr>
<tr>
<td>8. OMAHA – Omaha Home Health Care System, currently recognized</td>
<td>Home care</td>
<td>Diagnoses, interventions, and outcomes</td>
</tr>
</tbody>
</table>
Table 1 (continued)

<table>
<thead>
<tr>
<th>ANA Recognized Terminologies and Data Element Sets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting Where Developed</td>
</tr>
<tr>
<td>Content</td>
</tr>
</tbody>
</table>

9. PCDS – Patient Care Data Set, retired
   - Acute care
   - Diagnoses, interventions, and outcomes

10. PNDS – Perioperative Nursing Data
    - Perioperative
    - Diagnoses, interventions, and outcomes

Multidisciplinary Terminologies

11. ABC – Alternative Billing Codes, currently recognized
    - Nursing and other
    - Interventions

12. LOINC® - Logical Observation Identifiers Names and Codes, currently recognized
    - Nursing and other
    - Outcomes and assessments

13. SNOMED CT – Systematic Nomenclature of Medicine Clinical Terms, currently recognized
    - Nursing and other
    - Diagnoses, interventions, and outcomes

(ANA, 2006a)

RNs are licensed health professionals who are independently accountable for their own actions in nursing (Michigan Nurses Association [MNA], 1999). Only the RN has the knowledge to make nursing assessments and identify nursing diagnoses according to most of the 50 state nurse practice acts (Beyea, 2001). Intra-operative RNs must ensure that their documentation reflects their professional role (Beyea, 2001).
Significance of the Perioperative Nursing Data Set. In order to provide an understanding and significance of the PNDS, a brief section on its development will follow. Within the scope of perioperative nursing, a nursing terminology was needed to address the specific issues to nurses working in this area. AORN recognized this need for perioperative nurses. The Task Force on Perioperative Data Elements was established to address this need (AORN, 2002). After reviewing several existing standardized nursing data sets, the Task Force determined that no existing nursing language or data set addressed the specific phenomenon of concern to perioperative nurses. The North American Nursing Diagnosis Association (NANDA) taxonomy did address specific issues of concern to perioperative nursing (AORN), but NANDA addressed only the diagnostic step of the nursing process (AORN). The Task Force then decided to utilize the framework of the Nursing Minimum Data Set (NMDS) for data collection and language development (AORN). The NMDS key components were nursing diagnoses, nursing interventions, nursing outcomes, and intensity of nursing care (AORN).

Next the Task Force identified the need to define data elements. A data element is characterized by being the smallest unit of information that retains meaning and describes the concept without requiring further interpretation or information (AORN, 2002). The Task Force became the Data Elements Coordinating Committee (DECC). This committee focused on identifying the data elements that defined and described nursing activities that contribute to patient outcomes in the perioperative setting (AORN). There were four individual data elements that, when combined, became the framework for the PNDS. These elements are diagnoses, interventions, outcomes and structural elements (AORN).
An extensive process was then performed to establish validity and reliability of each data element within the data set (AORN, 2002). The discussion of that process is beyond the scope of this research paper. The DECC was able to define and validate a specific perioperative nursing language, the PNDS. This standardized language involving three of the four data elements was submitted in 1999 to the ANA as a standard terminology for perioperative nursing (AORN). The three data elements submitted were diagnoses, interventions, and outcomes. The fourth structural data element was not submitted to the ANA because the process utilized to validate the Structural Data Elements included the Association of Anesthesia Clinical Directors (AACD) and possessed a multi-disciplinary perspective (AORN). The result of that AACD validation was copyrighted by the AACD (AORN).

**Significance for this Study**

The significance of this proposed study was to show what perioperative nurses in southeastern Michigan know about the PNDS, how they might be using it in practice, and what their opinion is about it. The relationship between specific demographic data and knowledge, utilization, and opinion about the PNDS was also examined. The results from this study can then be utilized by AORN and local facilities to improve the dissemination of the PNDS in Washtenaw County in order to improve perioperative patient care.

**Research Problem**

The development of such a specialty-specific nursing language, such as the PNDS, could be utilized in many areas by members working in that specialty. It could be utilized in documenting professional nursing care either as a paper document or
electronic health record document. This language could be utilized in education, for orientation purposes, and to maintain competencies. It could also be utilized in management to define staffing mixes, benchmarking ideas, and areas for quality improvement. Why is this not being done? AORN has admitted that the PNDS has not been widely disseminated throughout the country (S. Kleinbeck, personal communication February 21, 2006). Do perioperative staff nurses in the southeastern Michigan area know about the PNDS? Is the PNDS being utilized in the above areas by perioperative staff nurses in southeastern Michigan in order to quantify the care that is provided to this patient population? What are the perioperative staff nurses’ opinions about the PNDS in this locale?

Research Purpose

The purpose of this descriptive/correlational study was to describe what perioperative nurses practicing in southeastern Michigan know about the PNDS, how they are utilizing the PNDS, and what their opinion of the PNDS is, and also to examine the relationship between these variables and demographic data. First, the study examined what perioperative registered nurses knew about the PNDS and how familiar they were with the PNDS. The second goal was to examine the utilization of the PNDS in current practice in any or all of the following areas: documentation, education, and research. Third, the study asked perioperative staff nurses their opinion of the PNDS. Finally, specific demographic data were examined to determine the relationship between that data and the previous three variables. The population was current perioperative staff nurses practicing in any surgical clinical setting in Washtenaw County. The four variables
examined were knowledge of the PNDS, utilization of the PNDS in practice, opinion of the PNDS, and basic demographic data.

Research Questions

The questions explored by this study were as follows:

1. What do perioperative RNs in southeastern Michigan know about the PNDS?
2. How is the PNDS utilized by perioperative RNs in southeastern Michigan?
3. What opinions do perioperative RNs in southeastern Michigan have about the PNDS?
4. What is the relationship between the demographic data and knowledge and opinion about the PNDS?
Chapter II: Literature Review

Overview

The literature review was conducted utilizing a topic of standardized language for nursing in general and then for perioperative nursing, specifically. The Cumulative Index for Nursing and Allied Health (CINAHL) was utilized to conduct the search. Keywords utilized for the search were standardized language, data set, standardized terminology, perioperative, and Perioperative Nursing Data Set (PNDS).

Standardized Nursing Language

Several articles and web sites were reviewed regarding the importance of a standardized nursing language and validating the significance of this study. Clark addressed a standardized language for nursing, in general, in her article published in *Nursing Standard* (1999). She identified that medicine has recognized the need for a standardized language for decades (Clark, 1999). For example, the International Classification of Diseases (ICD) was in its tenth revision in 1992 (Clark). Clark also identified another widely utilized medical language, Systematized Nomenclature of Human and Veterinary Medicine (SNOMED). SNOMED is intended to be a general purpose, comprehensive, and computer-processable terminology to represent virtually all of the data elements found in the medical record (Clark). She also discussed the fact that a standardized nursing language does not mean standardized nursing but that it is an essential prerequisite for communicating what nursing does (Clark).

The American Nurses Association (ANA) web site was another avenue explored in identifying the importance of a standardized nursing terminology. The ANA web site has a whole area on nursing practice information infrastructure (ANA, 2006b). They
provide sections on background, terminologies data, recognition criteria, and frequently asked questions regarding standardized terminologies (ANA). This area is updated frequently, so the information is current to today’s practicing RNs.

*Standardized Language for Perioperative Nursing*

**Knowledge of the PNDS.** In exploring the literature related specifically to the perioperative setting, no sources were identified that measured the knowledge that perioperative nurses have about the PNDS. An informal survey taken of area perioperative nurses by this researcher indicated that not many staff nurses or perioperative nurse educators know about the PNDS.

**Utilization of the PNDS.** Not many sources, outside of the Association of periOperative Registered Nurses (AORN) organization, were found that have utilized and studied the effectiveness of the PNDS. A chapter in the *Perioperative Nursing Data Set: The Perioperative Nursing Vocabulary* identified the application of the PNDS to the “real world.” These articles guided the decision of what utilization variables to examine in this study. Battie wrote about the utilization of the PNDS at the University of Washington Medical Center in Seattle (AORN, 2002). The Washington Medical Center seemed to embrace the PNDS entirely. They successfully utilized the PNDS in nurse competencies, outcomes as quality indicators, department policy and procedural development, clinical pathways, and in their electronic health record (EHR) documentation (AORN). Other articles in this chapter of the PNDS studied the outcomes of utilizing the PNDS in areas of benchmarking, policies and procedures, competencies for staff, teaching a perioperative component in a nursing curriculum, and measuring quality improvement processes (AORN). All of these areas have been effective in other settings and
demonstrate the validity of the PNDS at those settings, mostly on the west coast of the country. The utilization variables of education, both orientation and staff competencies, and documentation were chosen based on these articles.

Outside of the AORN PNDS publication, two journal articles were found discussing this topic of utilization of a standardized language in perioperative nursing. Beyea (2001) discussed the fact that language in perioperative nursing has never communicated the same clinical problems clearly, concisely, or consistently. She also stated that clinical information systems require standardized terms and definitions to help with documentation in the EHR (Beyea). Utilizing a standardized language will enable nurses to manage perioperative nursing data in a computerized record and ensure that nursing contributions are an integral component of a client’s medical record (Beyea). Beyea stated, in another article, that nurses should use a standardized language, such as the PNDS, in the same way as physicians do, to describe diagnoses or problems, interventions and outcomes (Beyea, 1999). Utilization of the PNDS in outcomes and interventions research was also examined in this study.

Opinion of the PNDS. The articles published in the Perioperative Nursing Data Set: The Perioperative Nursing Vocabulary (AORN, 2002) all reported a successful implementation of the PNDS in a variety of areas such as education, documentation, benchmarking, and research. The opinion held by these perioperative staff RNs was very high in regards to the PNDS (AORN). Shea (AORN) stated in her article that “the Perioperative Patient Focused Model and the PNDS are magnificent gifts for the specialty of perioperative nursing” (p. 47). Morton also stated that the language of the PNDS is clearly understood and can be a great reference for perioperative RNs (AORN).
Summary

The literature review demonstrated the importance of a standardized terminology. It also showed areas of the country that have utilized the PNDS in practice and found that data set to be effective in all perioperative settings. One would believe, with such an extensive, valid, and specialty-specific data set in place, it would be widely utilized within the variables listed for this study. However, upon an informal oral survey of colleagues within two area hospitals, I learned that staff nurses are not aware of the PNDS in this locale. AORN would also like to know the specific knowledge perioperative nurses have in regards to the PNDS and their opinion about the PNDS (S. Kleinbeck, personal communication February 21, 2006). This research was conducted to find out what local perioperative nurses knew about the PNDS and how it was utilized here in Southeastern Michigan. The results of this study could lead to educational opportunities to implement components of the PNDS in the variety of the areas identified. Then, further research could be done to examine the effectiveness and outcomes of utilizing the PNDS in everyday practice.
Chapter III: Framework

Association of periOperative Registered Nurse’s (AORN) Conceptual Framework

The Perioperative Patient Focused Model is based on the conceptual framework developed by the Data Elements Coordinating Committee (DECC) in the formulation of the Perioperative Nursing Data Set (PNDS; Rothrock & Smith, 2000). The model is divided into four quadrants. At the center of these quadrants is the patient. The four domains of this model are safety, physiological responses, behavioral responses of the family and the individual, and the health system. The three domains of safety, physiological responses and behavioral responses of patient and family, represent the important characteristics of the nature of perioperative patient care and critical areas for any patient undergoing a surgical or invasive procedure (Rothrock and Smith, 2000). The health system domain represents the elements, such as staff, supplies, and equipment, which must be in the environment to support the patient and lead to successful surgical intervention (Rothrock & Smith, 2000; AORN, 2002). The model focuses on outcomes and places outcomes immediately adjacent to patient care domains. Nursing diagnoses and interventions then follow (Rothrock & Smith). Figure 1 represents the Perioperative Patient Focused Model. This model holistically encompasses the care given to patients and their families as they undergo surgery or any invasive procedure, as well as illustrates the dynamic perioperative patient experience and the presence of nursing throughout that experience (Rothrock, 2003). Because the model is outcomes-focused, it addresses the fact that perioperative nurses possess a unique knowledge base of desired outcomes in the perioperative setting that applies to all perioperative patients (Rothrock, 2003).
The knowledge a perioperative nurse utilizes is that any surgical or invasive procedure carries many inherent risks (Rothrock, 2003). The perioperative nurse identifies these risks and potential problems in advance and directs nursing care aimed at prevention, while keeping in mind all four domains of the Patient Focused Model (Rothrock, 2003).

Application of the Perioperative Patient Focused Model

The Perioperative Patient Focused Model is the conceptual framework that was the background for this descriptive/correlational study on the use of the PNDS locally, here in southeastern Michigan. The PNDS was written within the framework of these four domains of patient safety, physiological response, behavioral response, and health system. The variables of knowledge, utilization, and opinion interact with the four domains in the model.

Knowledge of the Perioperative Nursing Data Set (PNDS). The knowledge perioperative nurses have of the PNDS impacts the domains of patient safety, physiological responses, and behavioral responses. The PNDS provides specific actions to guide perioperative care, document that care, and be able to quantify the impact of the professional nurse in the perioperative setting. Knowing the language of the PNDS would allow for consistent and high quality care for perioperative patients in this locale.

Utilization of the PNDS. The variable of utilization is also reflected in the perioperative domains of patient safety, physiological response, and behavioral response. Using this data set in providing perioperative care in the areas of documentation, education, and research allows nurses to have a consistent terminology in order to make documentation accurately reflect what care the professional nurse provides, maintain consistency of orientation programs, and maintain competencies. It also
Figure 1

The Perioperative Patient Focused Model

Perioperative Patient Focused Model©

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impacts the health system by allowing for nursing research to be conducted consistently for outcomes or interventional research to improve the perioperative care that facility is providing.

Opinion of the PNDS. The opinion of perioperative nurses interacts with all four domains, as well. This interaction might be positive or negative. The correlational portion of the study will determine the relationship between this variable and the demographic data. If perioperative nurses in Washtenaw County have a high opinion about the PNDS, they will be more likely to utilize it in their practice. This researcher also believes that utilization of the PNDS would possibly lead to the following results: improved patient safety and the provision of better care in order to meet the physiological and behavioral responses of the perioperative patient to surgery. This would then lead to better patient outcomes for the health system.

Demographic data. The demographic data comprises a part of the health system domain by determining the perioperative RN characteristics for that facility. The correlation of the demographic data and the other variables will determine a relationship regarding the PNDS in terms of knowledge, utilization, and opinion, in this study.

Study Framework

Research questions. The questions explored by this study are as follows:

1. What do perioperative RNs in southeastern Michigan know about the PNDS?
2. How is the PNDS utilized by perioperative RNs in southeastern Michigan?
3. What opinions do perioperative RNs in southeastern Michigan have about the PNDS?
4. What is the relationship between the demographic data and knowledge and opinion about the PNDS?

The four variables that were examined are demographic data, knowledge of the PNDS, utilization of the PNDS, and opinion about the PNDS. Demographic variables are the description of the subjects in the study sample (Burns & Grove, 2005). The demographic variables explored by this study are age, gender, position, years in nursing, years in perioperative nursing, AORN member, Certified Operating Room Nurse (CNOR), and education level in nursing. The knowledge of the PNDS is what general information the subjects have about this topic. Knowledge was defined as the ability to identify the best definition of the PNDS and state the domains of perioperative nursing. Utilization of the PNDS identifies how the perioperative staff nurses use this data set in their current clinical practice. Three areas of utilization were examined: documentation, education, and research. The opinion about the PNDS is the judgment or value given to this specific concept. The opinion was defined as a level of agreement regarding the importance of being able to measure professional nursing care in the perioperative setting; the value of the PNDS as a resource in the provision of professional nursing care in this setting; the ease of using the PNDS in education, documentation, and research; and, finally, the desire to learn more about the PNDS. Table 2 provides the conceptual and operational definitions of the variables.

Figure 2, on page 20, identifies the study variables, how they were operationalized, and the possible relationships to be examined by use of a questionnaire as a tool in this descriptive/correlational study. In Figure 2, the conceptual definitions
Table 2

**Variable Definitions**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definitions</th>
</tr>
</thead>
</table>
| Demographic Data of Perioperative RNs in Washtenaw County | Conceptual Definition: Perioperative RN characteristics for the facility   
Operational Definition: Age, gender, years in nursing, years in OR nursing, AORN member, CNOR, educational level in nursing, position (staff, manager, educator) as measured by the PNDS Questionnaire – Demographic Data (PNDSQ-D) |
| Knowledge of the Perioperative Nursing Data Set (PNDS) | Conceptual Definition: General information and knowledge perioperative RNs have about the PNDS   
Operational Definition: Knowledge will be tested by the RN’s ability to determine the best definition of the PNDS and their ability to identify the four domains of perioperative nursing, as well as a Likert Scale determining their familiarity as measured by the PNDS Questionnaire – Knowledge (PNDSQ-K) |
| Utilization of the PNDS                        | Conceptual Definition: Use of the data set in current perioperative practice in Washtenaw County   
Operational Definition: Use of the PNDS in documentation (EHR or paper), education (orientation, competencies), and/or research (outcomes, interventional) as measured by the PNDS Questionnaire – Utilization (PNDSQ-U) |
Table 2 (continued)

**Variable Definitions**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opinion of the PNDS</td>
<td><strong>Conceptual Definition:</strong> The judgment or value given to the PNDS by perioperative RNs in Washtenaw County</td>
</tr>
<tr>
<td></td>
<td><strong>Operational Definition:</strong> A Likert scale determining the level of agreement on the importance of quantification of perioperative nursing care; the value of the PNDS as a resource in the provision of professional nursing care for the perioperative patient; ease of utilization in documentation, education, and research; and the desire to learn more about the PNDS as measured by the PNDS Questionnaire - Opinion (PNDSQ-O)</td>
</tr>
</tbody>
</table>

are shown in blue, and the operational definitions are shown in red. The operational definitions of knowledge, utilization, and opinion are further delineated by the terms shown in green. These terms, shown in green for the variables of knowledge, utilization, and opinion and red for the demographic data, are the specific areas this study measured by use of a questionnaire.

**Relevant terms and assumptions.** Perioperative nursing encompasses all care provided by RNs in any surgical setting. Surgical settings include but are not limited to hospital operating room facilities, ambulatory surgery centers, and clinics and units where conscious sedation is required. According to Rothrock, “The various perioperative nursing roles all subsume elements of the behaviors and technical practices that characterize professional nursing” (2003, p.1). Perioperative nurses are expected to meet
Figure 2
Conceptual and Operational Definitions of the Study Variables
the standards of professional nursing as well as the standards of the specialty organization, AORN, by use of the nursing process to provide high quality care for the patient undergoing any surgical procedure.
Chapter IV: Methods

Study Design

The study design was descriptive/correlational. The data were gathered by using a paper and pencil questionnaire. The descriptive design was utilized in this study because there was not much information available on this topic in question (Burns & Grove, 2005). The variables within a descriptive design are not manipulated and no attempt was made to establish causality (Burns & Grove). In a descriptive/correlational study, the relationships that exist in a situation are examined (Burns & Grove). This helped to facilitate the identification of many interrelationships that were present in this specific situation regarding the Perioperative Nursing Data Set (PNDS; Burns & Grove).

The descriptive part of this study described the demographic data, knowledge, utilization, and opinion about the PNDS by perioperative nurses practicing in Washtenaw County in the state of Michigan. The correlational part of the study examined the relationship between the demographic data and the study variables of knowledge and opinion. Because utilization of the PNDS is health system driven, a relationship was not examined in regards to the individual RN but in regards to the facility characteristics. The facility characteristics were defined as community facilities, federal facilities, Level 1 trauma centers, outpatient facilities, or specialty facilities. These designations were assigned by the researcher. For final data analysis, federal facilities and community facilities were grouped under specialty facilities due to the low number of respondents.

Rationale. This type of design was selected to gather the most new information possible about this topic concerning the PNDS in Southeastern Michigan. The strength of the descriptive design is the ability to gather information on a topic when there has not
been much research done on the topic (Burns & Grove, 2005). Two of the strengths of the correlational piece of the design were the ability to discover if the variables were related to each other and the ability to generalize the findings of the study to the population (Wood & Ross-Kerr, 2006). Descriptive/correlational studies are also used to generate ideas for future study (Burns & Grove), and the results from this study might be able to guide educational efforts to increase the use of the PNDS in Washtenaw County.

Weaknesses for these types of studies are that they are exploratory studies and do not determine cause and effect (Burns & Grove, 2005). There is no manipulation of variables and no determination of differences between the variables (Burns & Grove). These strengths and weaknesses applied to this specific study.

Sample and Setting

Sample type. A non-probability convenience sample was drawn from perioperative Registered Nurses (RNs) practicing in the Southeastern Michigan area at all types of surgical settings. There were a total of nine sites included in the study. These sites provided a good mix of organizational types from community hospitals, specialty facilities, federal facilities, outpatient facilities, and Level 1 trauma centers.

Sample size. The sample needed to be large because of the level and design of the study (Burns & Grove, 2005). The goal was for at least a 60 percent questionnaire return from each facility. The specific numbers at each facility were determined after approaching the facilities for review board approval. Out of a possible 319 questionnaires handed out, 151 were returned. This gives an overall return rate of 47.7 percent, which did not meet the goal of 60 percent. The facility types were re-grouped into three main categories of Outpatient, Level 1 Trauma Centers and Specialty centers. The return rate
per facility type was as follows: Outpatient had a return rate of 43.1 percent, Level 1 Trauma Centers had a return rate of 48.8 percent, and the Specialty Centers had a return rate of 46.9 percent.

Inclusion and exclusion criteria. The inclusion requirements were as follows: the RN was a staff nurse, nurse manager, or nurse educator in the perioperative area and employed by that facility. Agency or travel RNs temporarily staffing at that facility were excluded.

Rationale. The strengths of choosing these sample facilities are numerous. The facilities include a wide variety of organizations from Level 1 trauma centers to community hospitals. There was also a federal facility included. The facilities were located relatively close geographically and were a manageable sample in regards to time and transportation issues. This facility list also provided a large sample representative of perioperative RNs practicing in Washtenaw County.

A weakness of the facility list was that it did not include a small clinic that performed minor cosmetic/plastic surgery procedures. Another weakness was the necessity of regrouping the facility list once the data were collected because there were not enough data to analyze separately from both the federal facility and the community hospital. A third weakness was that off-shift RNs were not as well represented because the researcher spoke only to the staff RNs present during the day shift.

Measurement

A paper and pencil questionnaire was administered to the subjects. No previous research had been found to assess this specific topic, so a new tool was developed. The
The study questionnaire is located in Appendix B. The questionnaire is divided into four parts correlating with the four study variables.

Demographic data. The demographic data was very specific to what the study was trying to explore. The following information was requested on the questionnaire: gender, age, years in nursing, years in perioperative nursing, AORN membership, CNOR certification, highest educational level, and current position. The respondents provided their answer by checking or filling in the appropriate blanks.

Knowledge. To measure the variable of knowledge, a Likert scale was used to determine the perceived familiarity the RN had in regards to the PNDS. This variable also included being able to determine a definition of the PNDS and being able to recognize the four nursing domains of the Perioperative Patient Focused Model. This was a measurement of the actual knowledge the subject had regarding the PNDS. The respondents were to select the best definition for the PNDS and circle the four domains of perioperative nursing. On the third question in this section, scoring was assessed by how many domains the RN correctly identified. The total knowledge score was determined by adding the scores from questions two and three together and correlating it with the first question.

Utilization. Utilization of the PNDS was measured by the staff RN stating whether their facility used the PNDS in documentation, education, or research. There were six questions relating to this topic. The answer choices were yes, no, or do not know.

Opinion. The opinion about the PNDS was assessed by a five point Likert scale agreement level to the specific statements on the tool. There were a total of six questions.
Reliability and Validity

Reliability. Internal reliability or consistency was determined by a Cronbach’s alpha coefficient. A Cronbach’s alpha coefficient was conducted to determine the internal consistency for the opinion variable. The result of the Cronbach’s alpha was 0.842 for the opinion items and 0.893 for the utilization items. This value is above 0.7, so the scale can be considered reliable with the sample (Pallant, 2005). It was not possible to determine the reliability for the knowledge variable, so content validity was established.

Validity. According to Burns & Grove (2005), face validity basically verifies that the instrument looks like it might be valid. It is important to establish this type of validity because the willingness of subjects to complete the tool is related to the fact that they feel the tool measures the information they agreed to provide (Burns & Grove, 2005). Face validity was established by having colleagues review the questions, as well as Eastern Michigan University faculty and the research advisors for this study. Content validity was determined by having an expert at the Association of periOperative Registered Nurses (AORN) review the tool. Susan Kleinbeck RN, PhD, CNOR, PNDS Nursing Consultant at AORN reviewed the final instrument and provided feedback to further guide this study.

A weakness of using this tool included a poor response rate for questionnaires in general, the omission of an important alternative response, the possibility of the subjects not answering all questions, and the potential for respondents to write comments in the margins (Burns & Grove, 2005). Safeguards in place to prevent the above from occurring included consistently presenting the study in a pleasant, positive, and non-
aggressive manner, administering the questionnaire at a convenient time for the staff to complete, keeping the questionnaire relatively short, and providing a small incentive. The presence of the researcher helped if the respondents had any questions. Having many people review the tool before it was administered determined any problems with specific questions or targeted an omitted response. A weakness of the tool presented itself after the data were analyzed. The knowledge score was lower overall than expected by this researcher. This low knowledge score impacted how the respondents were able to answer the subsequent sections of utilization and opinion.

Data Collection

A pilot test, involving a population of 17 RNs, was conducted at the researcher’s facility to determine the reliability of the tool. The researcher analyzed the data from this pilot study using the Statistical Package of the Social Scientists (SPSS) statistical software. The tool was found to be reliable, so the researcher proceeded with the study after obtaining permission from the College of Health and Human Sciences (CHHS) Human Subjects Review Board at Eastern Michigan University. Permission was then obtained from each facility’s Research Review Board. The researcher then contacted each Operating Room manager to set up a time to present the study questionnaire to the perioperative staff during their weekly in-service time. The cover letter and questionnaire took less than 20 minutes to read and complete. The perioperative staff was given a pen to complete the survey with and keep, as well as candy to be passed around. They had a week to complete the questionnaire in order to include off-shift RNs. There was a sealed envelope to place each questionnaire in and a sealed drop container placed in a convenient location within the facility’s surgical department. The researcher picked the
questionnaires up at the end of five business days. The study was presented and the data collected from all eight sites during the months of June and July.

*Ethical Considerations*

The study proposal was presented twice for review at Eastern Michigan University and once at each Human Subjects Review Board for the clinical facilities. The researcher completed all necessary training required by each facility regarding the treatment of human subjects. Once passed by the appropriate review boards, the researcher approached the managers of the Surgical Area to discuss the study, determine the number of RN staff, and arrange for a time to hand out the questionnaires. At one Level I Trauma center, the researcher was asked to present the study to all the Nurse Managers prior to the study.

The following steps were taken in order to protect the confidentiality of the subjects. The facility was coded with a number, and the perioperative RN staff was coded with the facility number and subject number. The Eastern Michigan University Request for Approval of Research Involving Human Subjects forms were completed and submitted with the proposal. All data were reported in aggregate form. The data are stored and protected in a locked, fireproof box at the researcher’s place of residence. This study was of low risk to participants and to their facilities. The only risk was anxiety associated with responding to a survey. The study participants received a cover letter with their questionnaire explaining the study. Appendix B shows the cover letter and questionnaire.
Data Analysis

Data were entered into the Statistical Package of the Social Scientists (SPSS) software by the researcher. All raw data were double checked for errors.

Demographic data. Demographic data at the nominal level were analyzed for frequencies and percentages. These nominal data were gender, AORN membership, Certified Nurse Operating Room (CNOR), educational level, and position. The data results from age, years in nursing, and years in perioperative nursing were analyzed using means and standard deviations. The results are presented in a table format in Chapter V.

Knowledge. Data collected from the first question in this section were analyzed using means and standard deviations (Burns & Grove, 2005) and measured perceived knowledge. The second question was scored with a zero for the wrong answer and a one for the right response. The third question in this section was scored with a 0 for not identifying any of the domains, a one for identifying one domain, a two for identifying two domains, a three for identifying three of the domains, and a four for identifying all four of the domains of perioperative nursing. The responses to questions two and three were added together for a measurement of actual total knowledge and correlated with question one in this section. Tables are used to present the results in Chapter V. A t-test was used to show the relationship between the total knowledge score and the demographic variables of AORN membership, CNOR certification, and educational level. A Pearson’s correlation and Spearman’s rho calculation were used to determine the correlation between years in perioperative nursing and total knowledge.
Utilization. Data collected about utilization were at the nominal level. Frequencies and percentages were calculated for the five questions in this section. Results are presented in table format in Chapter V.

Correlation of this data with the type of facility was done using a chi-square test of independence calculation. This was done to examine whether there was a relationship between the types of facility and whether the PNDS is utilized in the areas of documentation, education, or research. The researcher coded the facility type in the following categories: specialty clinic, outpatient facility, or Level 1 trauma center for the final data analysis.

Opinion. Data collected for this variable were at the ordinal level because a five-point Likert scale was utilized. Means and standard deviations were determined. A t-test calculation was performed between this data set and the demographic variables of AORN membership and CNOR certification.

Limitations

Design limitation. The descriptive/correlational study design is a level one type of project that is limited by its inability to determine cause and effect. It was an appropriate design for this study, however, because there is not much information available concerning this topic.

Sample limitations. The sample did not include a small clinic for plastic/cosmetic surgery. Therefore, the results from this study could not be generalized to that type of facility. Also RNs who work on the off-hours may not be as receptive to completing the questionnaire because the researcher did not directly present the study to those groups. The ability to generalize the findings to other parts of the country is also a limitation.
Perioperative nurses practicing in Washtenaw County in the State of Michigan may not be representative of RNs practicing in perioperative settings across the nation.

Instrument limitations. Another limitation lies in the instrument. Questionnaires, in general, have a poor response rate. Another limitation is the instrument itself. There was no tool or instrument found in the research literature that examined these study variables. This tool was developed by the researcher. Content validity had been established by the PNDS expert at AORN, however. There also seemed to be minimal difficulty shown by the participants in completing this questionnaire. The section concerning the utilization of the PNDS was a limitation. If the participants did not have much knowledge, they would not be using or they would not know if their facility was using the PNDS. Also, in regards to the utilization in research, the participant might not know what research, if any, was being done at their facility.
Chapter V: Results

Data Analysis

The Statistical Package of the Social Scientists (SPSS) for Windows, Student Version 13.0, was used to analyze the quantitative data. There were a total of 319 questionnaires distributed to nine different perioperative facilities. The total number of questionnaires returned was 151. This gave an overall return rate of 47.3 percent. The facility types were regrouped into three main categories of Outpatient, Level 1 Trauma Centers, and Specialty Centers. The return rate per facility type was as follows: Outpatient 43.1 percent, Level 1 Trauma Centers 48.8 percent, and the Specialty Centers 46.9 percent. This did not meet this researcher’s goal of a 60 percent return rate, but it provided enough data to gain a good description of what Registered Nurses (RNs) in southeastern Michigan know about the Perioperative Nursing Data Set (PNDS), how they are using the PNDS, what their opinion of the PNDS is, and the basic demographics of this population.

Demographic Data

Facility demographics. There were a total of nine perioperative sites utilized in this study. The facility types included a federal facility, two Level One Trauma Centers, one community facility, two outpatient facilities, and three specialty facilities. The facility types were combined in the final analysis to the following types because of a low participant number: Two Level One Trauma Centers, five specialty centers, and two outpatient facilities. Table 3 shows the breakdown of the new facility types.
Table 3

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 151</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outpatient</td>
<td>22</td>
<td>14.6</td>
</tr>
<tr>
<td>Level One Trauma Center</td>
<td>84</td>
<td>55.6</td>
</tr>
<tr>
<td>Specialty</td>
<td>45</td>
<td>29.8</td>
</tr>
</tbody>
</table>

Participant demographics. As stated above, a total of 319 questionnaires were distributed, and 151 were returned. There were some items in the questionnaire that had missing responses. These results were entered within the SPSS software as missing data. Table 5.2 shows the frequency distribution of the demographic variables. Twenty-five of the participants were male (17%), 122 were female (83%), and four were missing responses. The participants’ age ranged from 23 to 66 years, and the mean age was 45.9 years with a standard deviation (SD) of 10.6. Years of experience in nursing ranged from 0.5 years to 44 years with a mean of 18.8 years (SD=12.1). The years of experience in perioperative nursing ranged from 0.5 to 40 years with a mean of 12.7 years (SD=10). For the demographic variable of highest educational level in nursing, the original five categories were combined into two categories, Diploma and Associate Degree in Nursing (ADN), and Bachelor of Science in Nursing (BSN) and above. About 52% were diploma or ADN graduates, and about 48% had a BSN or higher educational level. There were five missing responses from this category. The demographic variable of position was combined to two categories: staff nurse (77.4%) and other (22.6%).
“other” included charge nurse or team leader, manager, or educator. Participant demographic data is presented in Tables 4 and 5.

Table 4

**Frequency Distribution of Demographic Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25</td>
<td>17</td>
</tr>
<tr>
<td>Female</td>
<td>122</td>
<td>83</td>
</tr>
<tr>
<td>Total</td>
<td>147</td>
<td>100</td>
</tr>
<tr>
<td><strong>AORN Membership</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>59</td>
<td>39.1</td>
</tr>
<tr>
<td>No</td>
<td>92</td>
<td>60.9</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100</td>
</tr>
<tr>
<td><strong>CNOR certification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>12.2</td>
</tr>
<tr>
<td>No</td>
<td>130</td>
<td>87.8</td>
</tr>
<tr>
<td>Total</td>
<td>148</td>
<td>100</td>
</tr>
<tr>
<td><strong>Highest Educational Level in Nursing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma/ADN</td>
<td>76</td>
<td>52.1</td>
</tr>
<tr>
<td>BSN or greater</td>
<td>70</td>
<td>47.9</td>
</tr>
<tr>
<td>Total</td>
<td>146</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 4 (continued)

Frequency Distribution of Demographic Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>113</td>
<td>77.4</td>
</tr>
<tr>
<td>Other</td>
<td>33</td>
<td>22.6</td>
</tr>
<tr>
<td>Total</td>
<td>146</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 5

Participant Demographic Data of Age, Years in Nursing, and Years in Perioperative Nursing

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>148</td>
<td>45.9</td>
<td>10.6</td>
</tr>
<tr>
<td>Years in Nursing</td>
<td>150</td>
<td>18.8</td>
<td>12.1</td>
</tr>
<tr>
<td>Years in Perioperative</td>
<td>146</td>
<td>12.7</td>
<td>10</td>
</tr>
</tbody>
</table>

Research Question One – What knowledge do perioperative RNs have about the PNDS?

The first item in the knowledge portion of the questionnaire measured perceived knowledge of the PNDS. There were a total of 148 participants who answered this question. The answers ranged from 1 (not at all familiar with the PNDS) to 5 (totally familiar with the PNDS). The group mean was 1.98 (SD=1.4). This reflects that perioperative nurses practicing in southeastern Michigan feel they are slightly familiar
with the PNDS. The following two items measured knowledge of the PNDS: one question asked for a definition of the PNDS and the other asked for the identification of the four domains of the Perioperative Patient Focused Model. The responses to these two items were added together to give a total knowledge score. Table 6 shows the responses to questions two and three and the total knowledge score. There was a range of scores from one to five once questions two and three were added together. About 74% of the RNs responded correctly to 2-3 items. Only 3.2% responded correctly to all items. The mean score was 2.7 (SD=0.92, n=125).

Using both parametric and nonparametric statistics, perceived knowledge was not significantly correlated with actual knowledge of the PNDS. The $p$ value was 0.66 with a Pearson’s correlation coefficient of 0.039, N=124. The Spearman rho coefficient was not significant with a $p$ value of 0.237 and correlation coefficient of 0.107.

**Research Question Two – How is the PNDS utilized?**

The utilization section of the questionnaire examined whether the PNDS was used in the areas of documentation, both electronic and paper, orientation, staff competencies, interventional research and/or outcomes research. The participants could choose between yes, no or do not know on the questionnaire. The results are shown in Table 7.
Table 6

*Frequency and Percentage Distribution of Responses to Knowledge Items*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition of the PNDS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>96</td>
<td>72.2</td>
</tr>
<tr>
<td>Incorrect</td>
<td>37</td>
<td>27.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>133</td>
<td></td>
</tr>
<tr>
<td><strong>Four domains of Perioperative Nursing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 correct</td>
<td>37</td>
<td>28.0</td>
</tr>
<tr>
<td>2 correct</td>
<td>59</td>
<td>44.7</td>
</tr>
<tr>
<td>3 correct</td>
<td>32</td>
<td>24.3</td>
</tr>
<tr>
<td>4 correct</td>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>132</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total Knowledge Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>5.6</td>
</tr>
<tr>
<td>2</td>
<td>46</td>
<td>36.8</td>
</tr>
<tr>
<td>3</td>
<td>46</td>
<td>36.8</td>
</tr>
<tr>
<td>4</td>
<td>22</td>
<td>17.6</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>125</td>
<td>100.0</td>
</tr>
<tr>
<td>Variable</td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------</td>
<td>---------</td>
</tr>
<tr>
<td>Electronic Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>19</td>
<td>12.6</td>
</tr>
<tr>
<td>No</td>
<td>37</td>
<td>24.5</td>
</tr>
<tr>
<td>Do Not Know</td>
<td>95</td>
<td>62.9</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100</td>
</tr>
<tr>
<td>Paper Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>No</td>
<td>42</td>
<td>28</td>
</tr>
<tr>
<td>Do Not Know</td>
<td>90</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100</td>
</tr>
<tr>
<td>Orientation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>11.9</td>
</tr>
<tr>
<td>No</td>
<td>28</td>
<td>18.5</td>
</tr>
<tr>
<td>Do Not Know</td>
<td>105</td>
<td>69.6</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100</td>
</tr>
<tr>
<td>Staff Competencies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>21</td>
<td>13.9</td>
</tr>
<tr>
<td>No</td>
<td>33</td>
<td>21.9</td>
</tr>
<tr>
<td>Do Not Know</td>
<td>97</td>
<td>64.2</td>
</tr>
<tr>
<td>Total</td>
<td>151</td>
<td>100</td>
</tr>
</tbody>
</table>
### Table 7 (continued)

| Utilization of the PNDS Frequencies and Percentages |
|---------------------------------|---|---|
| Variable                        | Frequency | Percent |
| Intervenational Research        |       |       |
| Yes                             | 6     | 4.0   |
| No                              | 28    | 18.5  |
| Do Not Know                     | 117   | 77.5  |
| Total                           | 151   | 100   |
| Outcomes Research               |       |       |
| Yes                             | 5     | 3.3   |
| No                              | 24    | 15.9  |
| Do Not Know                     | 122   | 80.8  |
| Total                           | 151   | 100   |

These results concerning the utilization of the PNDS show that most perioperative RNs do not know if their facility is using the PNDS. A Chi-Square test was run to examine the relationship between facility type and the six utilization items of the PNDS. Table 8 shows the results of the chi-square analyses. The results indicate that there is a significant difference between each type of facility and their use of the PNDS. In items 1a, concerning the use of the PNDS in electronic documentation, and 1b, concerning the use of the PNDS in paper documentation of care, the specialty centers reported a higher percentage of use, with 20 and 22.2 percent respectively. The same results were evident for questions 2 and 3 concerning the use of the PNDS in orientation and staff competencies. The specialty centers indicated a utilization percentage of 20 for
orientation and 26.7 for staff competencies. The last two questions in this section indicated that the Level One Trauma centers were more likely to utilize the PNDS in research, 6 percent for interventional research and 4.8 percent for outcomes research.

**Research Question Three – What is the opinion about the PNDS?**

The opinion section of the PNDS questionnaire was composed of six items, each on a five-point Likert scale. The responses ranged from 1 (strongly disagree) to 5 (strongly agree). The first item explored whether the participants felt it was important for professional nursing care to have the ability to be measured in order to document the impact an RN has on care for the perioperative patient by using a standardized terminology such as the PNDS. The responses ranged from 1 (strongly disagree) to 5 (strongly agree) with a group mean of 3.96 (SD=0.91, n=137).

The second item measured whether or not the PNDS is a valuable resource in providing professional nursing care for the perioperative patient. This item was worded negatively and the answers were recoded to fit the format of the other items in this section. The range went from 1 (strongly disagree) to 5 (strongly agree). The mean for the 138 participants was 3.47 (SD=0.82).

The third item examined whether the perioperative RNs believed the PNDS could be used in the documentation of patient care. The mean was 3.57 (SD=0.75, n=138).

The fourth item discussed the use of the PNDS in the education of perioperative nurses. This time the 138 participants had a range from 2 (disagree) to 5 (strongly agree). The mean was 3.7 (SD=0.73).
Table 8

*Comparison of Facility Type with Utilization of the PNDS*

<table>
<thead>
<tr>
<th>Utilization</th>
<th>Outpatient Percent</th>
<th>Level I Percent</th>
<th>Specialty Percent</th>
<th>Chi-Square</th>
<th>df</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic documentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4.5</td>
<td>10.7</td>
<td>20</td>
<td>19.310</td>
<td>4</td>
<td>0.001</td>
</tr>
<tr>
<td>No</td>
<td>27.3</td>
<td>14.3</td>
<td>42.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>68.2</td>
<td>75</td>
<td>37.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>9.1</td>
<td>7.2</td>
<td>22.2</td>
<td>12.141</td>
<td>4</td>
<td>0.016</td>
</tr>
<tr>
<td>No</td>
<td>22.7</td>
<td>24.1</td>
<td>37.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>68.2</td>
<td>68.7</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orientation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>9.1</td>
<td>8.3</td>
<td>20</td>
<td>19.414</td>
<td>4</td>
<td>0.001</td>
</tr>
<tr>
<td>No</td>
<td>9.1</td>
<td>11.9</td>
<td>35.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>81.8</td>
<td>79.8</td>
<td>44.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>9.1</td>
<td>8.3</td>
<td>26.7</td>
<td>20.792</td>
<td>4</td>
<td>0.000</td>
</tr>
<tr>
<td>No</td>
<td>9.1</td>
<td>17.9</td>
<td>35.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>81.8</td>
<td>73.8</td>
<td>37.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interventional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0</td>
<td>6</td>
<td>2.2</td>
<td>14.229</td>
<td>4</td>
<td>0.007</td>
</tr>
<tr>
<td>No</td>
<td>9.1</td>
<td>11.9</td>
<td>35.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0</td>
<td>4.8</td>
<td>2.2</td>
<td>9.476</td>
<td>4</td>
<td>0.05</td>
</tr>
<tr>
<td>No</td>
<td>9.1</td>
<td>10.7</td>
<td>28.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>90.9</td>
<td>84.5</td>
<td>68.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant p ≤ 0.05.
The fifth item determined whether the participants felt the PNDS could be used in perioperative research. There was a full range of responses. The 138 participants had a mean of 3.56 (SD=0.75).

The final item in this section asked whether they would like to learn more about the PNDS. The range went from 2 (disagree) to 5 (strongly agree). There were 142 participants completing this question. The mean was 4.04 (SD=0.76). Table 9 outlines the results of the opinion section on the PNDS questionnaire.

These results show that the participants are almost in agreement of the value of the PNDS as a standard terminology and the value of the PNDS in documentation, education, and research. Furthermore, the participants strongly agree that they want to learn more about the PNDS.

*Research Question Four – Relationships between Demographic Data and Knowledge and Opinion about the PNDS.*

*Knowledge and AORN membership.* Using a t-Test for Independent samples, the relationship was calculated between total knowledge of the PNDS and AORN membership. AORN members had a mean knowledge score of 3.07 (SD= 1.02, n=46) compared to non-members who had a mean of 2.58 (SD= 0.81, n=79). The results indicate that AORN members’ knowledge of the PNDS is greater than non-members’ (t=2.917, df =123, p=0.004). The results of the t-test analyses are shown in Table 10.
Table 9

*Opinion about the PNDS – Means and Standard Deviations*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of Standard Terminology</td>
<td>137</td>
<td>3.96</td>
<td>0.91</td>
</tr>
<tr>
<td>Value of the PNDS</td>
<td>138</td>
<td>3.47</td>
<td>0.82</td>
</tr>
<tr>
<td>Use of the PNDS in documentation</td>
<td>138</td>
<td>3.57</td>
<td>0.75</td>
</tr>
<tr>
<td>Use of the PNDS in education</td>
<td>138</td>
<td>3.7</td>
<td>0.73</td>
</tr>
<tr>
<td>Use of the PNDS in research</td>
<td>138</td>
<td>3.56</td>
<td>0.75</td>
</tr>
<tr>
<td>Learn more about the PNDS</td>
<td>142</td>
<td>4.04</td>
<td>0.76</td>
</tr>
</tbody>
</table>

*Knowledge and CNOR certification.* The t-Test for Independent samples was used to examine the relationship between total knowledge and CNOR certification. Of the participants who completed the knowledge questions, 16 were CNOR certified and 106 were not. The mean knowledge scores of the CNOR certified was 3.69 (SD=0.87) and those who were not certified was 2.61 (SD= 0.85). The participants who were CNOR certified had a higher total knowledge score than those who were not (t= 4.72, p=0.000).

*Knowledge and educational level.* The t-Test showed that there was not a statistically significant difference between educational level and total knowledge of the PNDS. The number of the participants with a diploma or ADN educational level had a mean of 2.72 (SD=0.98). The participants with a BSN or higher had a mean of 2.76 (SD= 0.86). The t value was -0.25 with a p value of 0.80.
Table 10

Comparison of the Total Knowledge Score and AORN Membership

<table>
<thead>
<tr>
<th>Variable</th>
<th>Member</th>
<th>Number</th>
<th>Mean</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>AORN member</td>
<td>Yes</td>
<td>46</td>
<td>3.07</td>
<td>2.917</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>79</td>
<td>2.58</td>
<td>(2.746)*</td>
<td>(0.007)*</td>
</tr>
<tr>
<td>CNOR certification</td>
<td>Yes</td>
<td>16</td>
<td>3.69</td>
<td>4.716</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>106</td>
<td>2.61</td>
<td>(4.606)*</td>
<td>(0.000)*</td>
</tr>
<tr>
<td>Educational Level</td>
<td>Diploma/ADN</td>
<td>60</td>
<td>2.72</td>
<td>-0.248</td>
<td>0.804</td>
</tr>
<tr>
<td></td>
<td>BSN &amp; above</td>
<td>62</td>
<td>2.76</td>
<td>(-0.248)*</td>
<td>(0.805)*</td>
</tr>
</tbody>
</table>

*equal variance not assumed

Knowledge and years in perioperative nursing. Pearson’s Product Correlation and Spearman Rank-Order Correlation were performed to determine the relationship between years in perioperative nursing and the total knowledge of the PNDS. There was no statistical significant relationship found between these two variables ($r=.024$, $p=0.80$, $n=120$).

Opinion and AORN membership. A $t$-Test for Independent samples was performed to examine the relationship between AORN membership and opinion concerning the PNDS. There was no statistically significant difference found in any of the opinion items.

Opinion and CNOR membership. A $t$-Test for Independent samples was performed to examine the relationship between the participants having a CNOR certification and their opinion about the PNDS. For opinion items one through five — importance of standardized terminology, value of the PNDS, use of the PNDS in documentation, use of the PNDS in education, and use of the PNDS in research — there
was no statistically significant difference found. For question six, concerning the desire to learn more about the PNDS, however, the participant with a CNOR showed a statistically significant result of having no opinion regarding an increase in knowledge of the PNDS. Table 11 shows these results.
Table 11

*Opinion About PNDS and CNOR Membership*

<table>
<thead>
<tr>
<th>CNOR certification</th>
<th>Number</th>
<th>Mean</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>Yes</td>
<td>17</td>
<td>4.18</td>
<td>0.997</td>
</tr>
<tr>
<td>Terminology</td>
<td>No</td>
<td>117</td>
<td>3.95</td>
<td>(0.994)*</td>
</tr>
<tr>
<td>Value of the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNDS</td>
<td>Yes</td>
<td>17</td>
<td>3.71</td>
<td>1.267</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>118</td>
<td>3.44</td>
<td>(1.213)*</td>
</tr>
<tr>
<td>Use of the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNDS in documentation</td>
<td>Yes</td>
<td>17</td>
<td>3.71</td>
<td>0.829</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>118</td>
<td>3.54</td>
<td>(0.818)*</td>
</tr>
<tr>
<td>Use of the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNDS in education</td>
<td>Yes</td>
<td>17</td>
<td>3.71</td>
<td>0.057</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>118</td>
<td>3.69</td>
<td>(0.055)*</td>
</tr>
<tr>
<td>Use of the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNDS in research</td>
<td>Yes</td>
<td>17</td>
<td>3.65</td>
<td>0.537</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>118</td>
<td>3.54</td>
<td>(0.517)*</td>
</tr>
<tr>
<td>Learn more</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>about the PNDS</td>
<td>Yes</td>
<td>17</td>
<td>3.59</td>
<td>-2.629</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>118</td>
<td>4.10</td>
<td>(-2.746)*</td>
</tr>
</tbody>
</table>

*(equal variances not assumed), **p≤ 0.05 statistically significant
Chapter VI: Discussion

The primary goal of this descriptive/correlational study was to describe what perioperative nurses practicing in southeastern Michigan know about the Perioperative Nursing Data Set (PNDS), how they are utilizing the PNDS, and their opinion of the PNDS and also to examine the relationship between these variables and demographic data. The discussion will be organized based on the four research questions for this study.

Research Question One – What do perioperative nurses know about the PNDS?

Most perioperative registered nurses (RNs) did not know much about the PNDS as measured by their total knowledge score. The perceived knowledge was shown by the perioperative RNs in southeastern Michigan being slightly familiar with the PNDS. The data showed that the perioperative RNs could actually pick out a definition for the PNDS but were able to correctly identify only one or two of the domains of perioperative nursing as defined within the PNDS by the Association of periOperative Registered Nurses (AORN). When added together, the total knowledge score was a medium score of two or three out of a possible five total points.

Research Question Two – How is the PNDS utilized?

The majority of the perioperative RNs in southeastern Michigan did not know if their facility was utilizing the PNDS in the six areas assessed by the questionnaire. Specialty facilities showed more positive responses for the areas utilizing the PNDS in electronic documentation, paper documentation, orientation, and staff competencies. Level I Trauma facilities indicated a positive response in both interventional and
outcomes research. This might be because the Level I Trauma centers are more likely than outpatient and specialty centers to conduct a greater amount of research.

There is a concern, however, about the results in the utilization section. Those few participants indicating yes for all of the areas of utilization might have indicated a positive response erroneously. Because the knowledge score was low across the data, RNs indicating a positive utilization might be doing so under the presumption that the PNDS was more of a plan of care rather than a specific data set providing a standard terminology for perioperative care. The managers at the facilities also had indicated to the researcher that their facility was not utilizing the PNDS in any of the areas examined. The area of utilization could be examined again, in further research, once education has been provided to increase knowledge about the PNDS.

*Research Question Three – What is the opinion about the PNDS?*

Overall, the results of this study indicated a fairly favorable opinion concerning the PNDS. The results showed that the perioperative RNs in southeastern Michigan were almost in agreement concerning the positive value of perioperative professional nursing care to be measured using a standardized terminology, the use of the PNDS as a valuable resource, and the use of the PNDS in documentation of care, education, and research. There was a solid agreement, however, that perioperative RNs in southeastern Michigan would like to learn more about the PNDS. There was a lot of missing data, however, in this section because the participants indicated they could not give an opinion concerning the PNDS because they did not know what it was. The low knowledge regarding the PNDS impacted the results of this section as well.
Research Question Four – Relationships between Demographic Data and Knowledge and Opinion about the PNDS.

The hypothesis held by the researcher was that there would be a positive relationship between knowledge of the PNDS and AORN membership, CNOR certification, and years in perioperative nursing. This proved to be true in regards to AORN membership and showed an even stronger relationship with those participants holding a CNOR certification. There was, however, no significant relationship between years in perioperative nursing and knowledge of the PNDS. This lack of relationship might be explained because only 39 percent of the participants were members of AORN and only 12 percent were CNOR certified. Clearly any knowledge perioperative RNs possess concerning the PNDS comes mostly from AORN publications, local chapter events, and seminars.

When examining the relationship between opinion of the PNDS and AORN membership, no significant difference was found in all the questions in the opinion section of the PNDS. When this relationship was examined in regards to CNOR certification, the same was true for the first five questions. The sixth question, however, showed that those participants with a CNOR certification were less likely to want to learn more about the PNDS. This finding could be true because the CNOR group had the most knowledge about the PNDS and felt secure in that knowledge.

Limitations of this Study

It is always necessary to identify the limitations of a study when interpreting study findings. The limitations of this study were discussed in Chapter IV: Methods.
Those limitations will be briefly discussed here, again. The study design of a descriptive/correlational study is a level one type of study marked by its inability to determine cause and effect. It was appropriate for use in this study because there was not much information available concerning this topic. The sample was limited by not including a clinic for plastic/cosmetic surgery. The results from this study could not be generalized to that type of facility. Also, registered nurses (RNs) working the off-shifts were not addressed directly by the researcher, so they might not have been as receptive to completing the questionnaire. There was only a 47 percent return rate from the questionnaire. This may not be a high enough number to be able to generalize the findings to all nurses practicing in southeastern Michigan. Finally, perioperative nurses practicing in southeastern Michigan may not be representative of RNs practicing in perioperative settings across the country. The instrument was also a limitation because it was developed by the researcher. Content validity had been established by the Perioperative Nursing Data Set (PNDS) expert at the Association of periOperative Registered Nurses (AORN). However, because the knowledge score was low in general, other sections may not give accurate results. Because the participants did not really have a good understanding of what the PNDS was, their answers to the utilization of the PNDS and opinion about the PNDS could be inaccurate.

Implications for Clinical Practice

The findings of this research study clearly show that the PNDS has not been well disseminated to this part of the country. The literature review showed, however, that those facilities utilizing the PNDS had better patient outcomes, can document the care that the professional perioperative nurse provided for the patient more succinctly and
accurately, can better track education for the orientee, can better monitor staff
competencies, and can perform research within this data set. Clearly, education
concerning the PNDS needs to be provided, as there is interest in learning more about the
PNDS in southeastern Michigan. The local chapter of AORN is the most logical place to
start. Those members can host experts from the national AORN headquarters in Denver
to discuss the many uses of the PNDS at the monthly chapter meetings. Members
attending those meetings can bring that information back to their facilities for education
and implementation. Each facility’s practice committee can then review the information
and implement it within the determined areas.

There was an important demographic finding in this study that might impede this
process. This study showed that only 39 percent of participants belong to their
professional organization, AORN. Membership in AORN clearly increased the
knowledge concerning the PNDS. This low membership rate will affect not only this
topic of the PNDS but all topics related to perioperative nursing. Facilities need to
encourage participation in all professional nursing organizations either by some incentive
or dues compensation or promotional advantage. Professional organizations, such as
AORN, provide current research, new evidence-based practices, information, and
education to its members. This, in turn, will help improve patient outcomes within that
facility. However, that topic is another research area.

Plan for Dissemination

The plans to disseminate the findings from this study include a summary provided
to each participating facility during its in-service time or a designated time set up by the
manager for each facility. Academic presentations at Eastern Michigan University’s
(EMU) Annual Scholarly Achievement Day and EMU’s Graduate Research Fair are also
planned to disseminate these results. The findings could also be discussed at the local
AORN Chapter meeting held monthly during the school year. The findings will also be
shared with AORN at the national level, with possible submission to the *AORN Journal.*
A poster presentation at Congress, AORN’s annual week-long conference, could also be
used to show the findings from this project.

*Implications for Research*

Since the initiation of this study, AORN has published another edition of the
PNDS. Included in this new edition are many more examples of the benefits of this
standardized perioperative terminology as the utilization becomes greater throughout the
country. This could lead to many implications for research. For example, once further
education has been done at the chapter level and the PNDS has been implemented in
specific areas within a facility, interventional and outcomes research could be done
concerning the effectiveness of the PNDS in that area of its implementation. Almost all
facilities in this geographical area have or are going to have totally computerized
documentation of patient care. The software utilizing the PNDS could be put in place
within the facility system as this process is occurring and the results tracked within the
system. A qualitative study could be done in regards to the ease of documenting the
professional care that is completed by perioperative RNs everyday within the framework
of the PNDS. These are just some examples of further research that could be done in
regards to the PNDS.

In conclusion, clearly the PNDS is a valuable tool that has been developed by
AORN to provide a perioperative vocabulary for perioperative nurses to be able to
quantify the care they provide on a daily basis. Without measurable data that supports having the professional nurse in the surgical setting, that role will constantly be questioned and threatened (AORN, 2002). The PNDS can provide that valuable and reliable nursing data that measures the value of nursing contributions to perioperative care. Dissemination of this resource has to quickly improve. Perioperative nurses in southeastern Michigan want to learn more about the PNDS. The results of this study show that RNs recognize there is a need for a standard terminology specific to their perioperative clinical setting. Local and national AORN leaders can take this shown interest and start to educate and implement this data set at the grassroots level with those nurses providing direct care for the patient undergoing any surgical procedure.
References


Appendices
Appendix A

Permission letter from AORN

October 24, 2007

Jill Ortmann
45 East Willis Rd
Saline, MI 48176

Dear Ms. Ortmann:

Thank you for requesting permission to reprint the Perioperative Patient Focused Model in your study about the use of the Perioperative Nursing Data Set in Michigan. We are pleased you have selected AORN materials.

Reprint permission is granted for use of the Perioperative Patient Focused Model in either full-color or in black & white. If you choose to use the Model in black & white, there is some text that must accompany the Model in your publication because the black & white version of the Model loses meaning (without the color). Please note - this text is required and will be enclosed with this letter. Also, please be sure to include the copyright information under the Model along with the copyright symbol on the title.

Please use the following credit line, as well as the copyright symbol:

Used with permission from AORN. Perioperative Nursing Data Set, 2nd ed.
Copyright 2002 © AORN, Inc., 2170 S Parker Rd, Suite 400, Denver, CO 80231. All rights reserved.

Permission is valid for one year from the date of this letter. If you have any questions, please contact me or our Assistant Editor, Elizabeth Lones.

Sincerely,

[Signature]

Joan A. Aseman
Editorial Manager
Appendix B Cover Letter and Study Questionnaire

Dear Participant:

I am conducting a study in partial fulfillment of my Masters of Science in Nursing degree. Below is a description of the study, its benefits, its risks and how I plan to use the results. Please read the information provided, and feel free to ask any questions. Thank you in advance for your time.

**Project title:**
Knowledge and Utilization of the Perioperative Nursing Data Set by Perioperative Staff Nurses in Southeastern Michigan

**Investigator:** Jill Ortmann, Eastern Michigan University  
**Co-Investigator:** Lorraine Wilson, PhD, RN

**Purpose of the Study:**
The purpose of this descriptive/correlational study is to describe what perioperative nurses practicing in southeastern Michigan know about the Perioperative Nursing Data Set (PNDS), how they are utilizing the PNDS, their opinion of the PNDS and also to examine the relationship between these variables and the demographic data.

**Procedure:**
The principle investigator will explain the study to you and answer any questions you may have. You must be a registered nurse (RN) working as a staff nurse, manager or nurse educator in the perioperative area and employed by your facility to take part in this study.

The study involves a paper and pencil questionnaire. The first section is demographic data of interest to this study. The second section involves questions related to your knowledge about the PNDS. The third section pertains to utilization of the PNDS in your facility. The fourth section determines your opinion of the PNDS. The entire questionnaire should take approximately 20 minutes to complete. Please place the completed questionnaire in the envelope, seal it, and place the envelope in the sealed container. I will return in five business days to collect the container.

**Confidentiality:**
A code number will be the only identifier on your questionnaire.

All information will be kept in locked file cabinets of the study investigator for a time period not to exceed five years. The questionnaires will then be shredded at that time.

**Expected Risks:** There are no foreseeable risks to you if you decide to participate in this study. All results will be kept completely confidential and be reported in an aggregate format.

**Expected Benefits:**
I am hoping to increase awareness of this valuable tool that has been developed by the Association of periOperative Registered Nurses (AORN). The PNDS could be utilized in so many areas to facilitate the care provided by the professional nurse in the perioperative setting.
**Voluntary Participation:**
Your participation in this study is completely voluntary. You may choose not to participate without any consequences. Your completion of the questionnaire indicates your consent to participate in this study.

**Use of research results:**
Results will be presented in aggregate form only. No names or individually identifying information will be revealed. Results may be presented at research meetings and conferences, in scientific publications, and as part of a master’s thesis being conducted by the principle investigator. The results of the study will be available at the conclusion of the study. Lorraine Wilson, RN PhD can be contacted at Eastern Michigan University, Department of Nursing for these results (734) 487-7232.

For questions regarding institutional approval of this study, please contact the CHHS Human Subjects Review Committee via email at (stephen.sonstein@emich.edu)

Thank you for taking the time to participate in this study.

Jill Ortmann, RN
Your completion of this questionnaire indicates your consent to participate in this study.

Perioperative Nursing Data Set Questionnaire (PNDSQ)

DEMOGRAPHIC DATA – (PNDSQ-D)

Facility Identification Number

Facility Type

Subject Identification Number

Gender

Male

Female

Age (in years to the nearest birthday)

Years in Nursing

Years in Perioperative Nursing

AORN Member

Yes

No

CNOR

Yes

No
Highest Educational Level Completed in Nursing (Choose one)

Diploma

Associates Degree in Nursing

BSN

MSN

NP

Doctorate

Position (Choose one)

Staff

Charge Nurse/Team Leader

Manager

Educator

Other (please specify)
Perioperative Nursing Data Set Questionnaire (PNDSQ)

KNOWLEDGE (PNDSQ-K)

1. How familiar are you with the Perioperative Nursing Data Set? (Circle one)

   Not at all familiar  Slightly familiar  Moderately familiar  Very familiar  Totally familiar

   1      2             3    4            5

2. Choose the best definition for the Perioperative Nursing Data Set. (Circle one)

   a. Standardized plans of care for patients undergoing a surgical procedure.

   b. A standardized perioperative nursing terminology that provides a uniform, complete and systematic method of collecting basic elements of perioperative nursing care.

   c. A perioperative data set that can only be utilized within an electronic health record.

3. Circle the four domains of concern in AORN’s Perioperative Patient Focused Model.

   Health System
   Equipment Competencies
   Collaboration
   Physiological Responses
   Documentation
   Behavioral Responses: Individual and Family
   Safety
   Positioning
Perioperative Nursing Data Set Questionnaire (PNDSQ)

UTILIZATION (PNDSQ-U)

1a. Does your facility utilize the PNDS to document patient care on the electronic health record?

   Yes ______
   No ______
   Do not know ______

1b. Does your facility utilize the PNDS to document patient care on a paper record?

   Yes ______
   No ______
   Do not know ______

2. Does your facility utilize the PNDS for new staff orientation?

   Yes ______
   No ______
   Do not know ______

3. Does your facility utilize the PNDS for maintaining staff competencies?

   Yes ______
   No ______
   Do not know ______
4. Is your facility currently conducting or has conducted in the past, interventional research utilizing the PNDS?
   Yes ______
   No ______
   Do not know ______

5. Is your facility currently conducting or has conducted in the past, outcomes research utilizing the PNDS?
   Yes ______
   No ______
   Do not know ______
Perioperative Nursing Data Set Questionnaire (PNDSQ)

OPINION – (PNDSQ–O)

Choose one

1. I believe that it is important for professional nursing care to have the ability to be measured in order to document the impact the RN has on care for the perioperative patient by utilizing a standardized terminology such as the PNDS.

   Strongly disagree   Disagree   No Opinion   Agree   Strongly agree

2. I believe that the PNDS is not a valuable resource in providing professional nursing care for the perioperative patient.

   Strongly disagree   Disagree   No Opinion   Agree   Strongly agree

3. I believe that the PNDS can be utilized in documentation of patient care.

   Strongly disagree   Disagree   No Opinion   Agree   Strongly agree

4. I believe that the PNDS can be utilized in the education of perioperative nurses.

   Strongly disagree   Disagree   No Opinion   Agree   Strongly agree
5. I believe that the PNDS can be utilized in the area of perioperative research.

Strongly disagree    Disagree    No Opinion    Agree    Strongly agree

6. I would like to learn more about the PNDS.

Strongly disagree    Disagree    No Opinion    Agree    Strongly agree

Thank you so much for taking the time to fill out this questionnaire!
Appendix C

College of Health and Human Services Human Subject Review Committee Approval

Letter for Pilot Study

EASTERN MICHIGAN UNIVERSITY

November 14, 2006

Jill Ortmann
O/o Dr. Lorraine Wilson
School of Nursing
Eastern Michigan University
Ypsilanti, MI 48197

Dear Ms. Ortmann,

The CHHS Human Subject Review Committee finds that your request entitled
“Knowledge and Utilization of the Perioperative Nursing Data Set by Perioperative
Nurses in Southeastern Michigan” submitted on 11/4/06 meets the Minimal Risk
Standards and is approved for initiation with the following provisions:

- A statement must be included in the Informed Consent document stating how long
  the data will be retained, when and if the data will be destroyed.
- The informed consent document must list Dr. Wilson as the source to be
  contacted for questions concerning the study or a copy of the study results.
- The informed consent document must list the Human Subjects Review Committee
  of the College of Health and Human Services as the source to be contacted for
  questions concerning the approval of the study.

The Committee may request further approval if secondary analysis of the data is
conducted.

Sincerely,

Stephen A. Sontag, PhD
Chair, CHHS Human Subjects Review Committee
Appendix D

Department of Veteran Affairs Human Research and Development Approval Letter

Department of Veterans Affairs

Memorandum

Date: January 10, 2007

From: Chair, Research and Development Committee

Subj: Research Proposal Final Approval - 2006-110477

To: Jill Ortmann, BSN

1. On January 10, 2007, the Research and Development Committee gave final approval to your study, entitled Knowledge and Utilization of the Perioperative Nursing Data Set by Perioperative Staff Nurses in Southeastern Michigan. The study was approved by the Human Studies Committee on December 14, 2006 and the Biosafety Subcommittee on December 14, 2006.

2. The Human Subject risk level is minimal risk. The Human Studies approval period is for one-year. The Human Studies approval period expires on December 14, 2007. Renewal notices for continued approval will be emailed to you approximately 12 weeks prior to the expiration date. In order to avoid any interruptions in your study, continued approvals must be submitted to the RRB Coordinator at least six weeks before the expiration date.

3. Approval carries with it the understanding that:
   a. You will make no modification to this study without prior approval by the Human Studies Committee and the R&D Committee, and all advertisements and supplemental materials will be submitted for approval prior to their use.
   b. You will notify the Human Studies Committee of any serious adverse events that occur.
   c. You will submit documents for continuation approval at least once annually or more often if requested.
   d. If a research consent form is required, you will place a signed form in the patient's hospital medical chart in CPRS, will flag the chart and will enter a progress note stating the patient is entered in the study (study title) and will include the name and phone number of the investigator to contact for further information.

4. Any material submitted for publication that is generated from this study must be submitted for review by the R&D Committee. You must also acknowledge the VA on any published materials generated from this study. For further clarification, the policy is located at: http://www.va.gov/publ/direct/health/handbook/1200.198k.pdf
3. Thank you for your cooperation in helping us adhere to the rules and regulations of the Research and Development Office of the Department of Veterans Affairs in protecting the rights and welfare of human subjects involved in medical research.

Neil B. Alexander, MD
MEMORANDUM

Department of Veterans Affairs
Date: December 18, 2006
To: Ortmann, Jill, BSN
From: Ann Arbor VA Research Service (11R), Subcommittee on Human Studies (FWA# IRB0000264) of the VA Ann Arbor Healthcare System (FWA0000348)
Subj: Project review at the December 14, 2006 meeting, Item #3.09.

3.09 Ortmann, Jill, BSN Knowledge and Utilization of the Perioperative Nursing Data Set by Perioperative Staff Nurses in Southeastern Michigan

11/30/06 The purpose of this descriptive/correlational study is to describe what perioperative nurses practicing in southeastern Michigan know about the Perioperative Nursing Data Set (PNDS), how they are utilizing the PNDS, their opinion of the PNDS and also to examine the relationship between these variables and demographic data.

Even though recent reports show the value and cost-effectiveness of RNs, in general, in lower morbidity and mortality rates, the use of RN in the "technical" setting of surgery is still questioned. To validate the need for RNs in the perioperative setting, nursing documentation must reflect professional nursing practice.

Perioperative documentation must be more than the check list of tasks and interventions that could be accomplished by a licensed practical nurse. The perioperative nurse has to be able to implement nursing actions to ensure and maintain a safe environment for the patient. He or she demonstrates the proper use of all OR equipment such as...electrosurgical equipment, placement of the ESU (electrosurgical equipment) pad and proper placement of SCDs (sequential compression device). The nurse has to have knowledge of the working of and be able to troubleshoot problems with any and all equipment used in the OR's: Microscope, photocoagulation machine, dermatomes, IV pumps, light sources, video equipment (camera, printer, and insufflator). If there is a problem with any of the equipment the nurse has to be able to initiate corrective action for the malfunctioning equipment.

The identity of research will be made anonymous. The facility will be coded with a letter and the perioperative RN staff will be coded with the facility letter and staff number. Results will be reported in aggregate form. The data will be stored in a locked, fireproof box at the principal investigator's place of residence.

[Request Waiver of Signed Informed Consent] (20 subj at VA)

12/14/06 The request for Waiver of Signed Informed Consent is appropriate. The Committee noted that the investigator does not need a VA Consent Form for this study. A signed consent form would be the only link between the survey and the identity of the subject.

ACTION TAKEN:
APPROVED, New Study with Waiver of Signed Informed Consent (20 subj at VA)
The risks are reasonable in relation to benefits to subjects and the knowledge to be gained.
The risks of the study have been minimized to the extent possible.
Continued Approval Status (Month, Exp Date, Risk) 12 12/14/2007 MINIMAL
(8=for, 0=opposed, 0=abstain, 0=not present)

Human Studies Committee regulations require investigators to follow these procedures:
1) You must use copies of the VA IRB-approved Consent Form with the VA logo and date of approval & expiration.
2) You must submit a "Request for Continued Approval of Human Use" at least six weeks before the expiration date.
3) All changes or deviations from the project protocol, consent form or IRB policies must first be approved by the IRB.
4) Report a Serious Adverse Event or Unanticipated Problem that occurs to a local subject within 7 calendar days

See the VA IRB SAE and UAP Reporting Policy at "http://www1.va.gov/vaaaresearch/page.cfm?pg=3"

VA Human Studies IRB Coordinator = Douglas Feldman (734) 761-7951 e-mail = doug.feldman@med.va.gov
R&D FAX = (734) 761-7693 VA Research Web Site = http://www1.va.gov/vaaaresearch

Sincerely,

Carol Kaufman, M.D.
VA Human Studies Chairperson
Appendix E

College of Health and Human Services Human Subject Review Committee Approval

Letter for Main Study

EASTERN MICHIGAN UNIVERSITY

March 13, 2007

Jill Ortmann
C/o Lorraine Wilson, PhD
School of Nursing
Eastern Michigan University
Ypsilanti, MI 48197

Dear Ms. Ortmann,

The CHHS Human Subject Review Committee has reviewed your request entitled “Knowledge and Utilization of the Perioperative Nursing Data Set by perioperative Nurses in Southeastern Michigan”, submitted on 2/19/2007. The Committee unanimously agreed that it meets the Minimal Risk standards and the study can be initiated.

The Committee may request further approval if secondary analysis of the data is conducted.

Sincerely,

Stephen A. Soastein, PhD
Chair, CHHS Human Subjects Review Committee
Appendix F

Saint Joseph Mercy Health System Institutional Review Board Approval Letter

May 31, 2007

Jill Ortmann, RN
2540 Textile Road
Saline, MI 48176

Dear Ms. Ortmann:

On behalf of the SJMHS institutional Review Board, expedited approval was granted on May 29, 2007 for the following new study. The number listed below has been assigned to this protocol.

**HSR-07-0808** Knowledge and Utilization of the Perioperative Nursing Data Set by Perioperative Nurses in Southeastern Michigan

Your study was approved for 12 months.

Federal regulations require that the IRB review each research project at least annually. In approximately one year, or upon completion of your research project, a report will need to be submitted to the IRB that addresses the following points:

1. The current status of the investigation (completed or continuing);
2. A list of subjects participating in the project since its beginning, (using initials, code number or other means to maintain anonymity), and the date of entry for each subject;
3. A description of the experience of the subjects, including adverse reactions, complications, benefits and/or withdrawals from the study;
4. A summary of the research results thus far;
5. A current assessment of the risks and benefits based on study results, including any new information that has come to light since the IRB's last review;
6. A copy of the current consent form, if applicable.

REMARKABLE MEDICINE
REMARKABLE CARE
Approximately four to six weeks in advance of the due date, you will receive a reminder. You should be aware that if the report is delinquent it is IRB policy to close the study and withdraw any intramural funding. You should also know that the IRB periodically audits research projects as part of its quality review process; your agreement to cooperate fully with such an audit is condition of approval.

All changes/amendments to your protocol or consent form require review and approval by the IRB prior to implementation. You are also required to submit a written description for any serious adverse reactions, unexpected events or deaths to the IRB Chairman and appropriate regulatory agencies within 72 hours of the occurrence. You are responsible for complying with these and all other policies and procedures of the SJMH Institutional Review Board.

The SJMHS IRB operates in accordance with the International Conference of Harmonization Good Clinical Practice Guidelines and applicable laws and regulations. If there is any aspect of the policies and procedures about which you would like further information please visit the SJMHS IRB website at http://www.sjmercyhealth.org/body.cfm?id=873. Failure to comply with SJMH policy is in violation of federal regulations and could result in withdrawal of approval and/or funding for your project.

Sincerely,

IRB Coordinator
Saint Joseph Mercy Health System
Reichert Health Building
Suite 2018
Ypsilanti, MI 48197
Appendix G

University of Michigan Institutional Review Board Approval Letter

To: Mr. Jill Ortmann
From: Michael  
John  
Weg
Cc:  
Rudi  
Rabe  
Lorraine  
Wilson

Subject: Initial Study Approval for [HUM00012934]

SUBMISSION INFORMATION:
Study Title: Knowledge and Utilization of the Perioperative Nursing Data Set by Perioperative Nurses in Southeastern Michigan
Full Study Title (if applicable):  
Study eResearch ID: HUM00012934
Date of this Notification from IRB: 5/5/2007
Initial IRB Approval Date: 5/3/2007
Expiration Date: 5/1/2008
UM Federalwide Assurance (FWA): FWA00004969 expiring on 5/10/2003

http://us1840.mail.yahoo.com/ym/ShowLetter?MsgId=4888_5137155_21809_2084_3900_0_4424... 6/5/2007
OHRP IRB Registration Number(s): IRB00001996

NOTICE OF IRB APPROVAL AND CONDITIONS:
The IRB has reviewed and approved the study referenced above. The IRB determined that the proposed research conforms with applicable guidelines, State and federal regulations, and the University of Michigan's Federalwide Assurance (FWA) with the Department of Health and Human Services (HHS). You must conduct this study in accordance with the description and information provided in the approved application and associated documents.

APPROVAL PERIOD AND EXPIRATION:
The approval period for this study is listed above. Please note the expiration date. If the approval lapses, you may not conduct work on this study until appropriate approval has been re-established, except as necessary to eliminate apparent immediate hazards to research subjects. Should the latter occur, you must notify the IRB Office as soon as possible.

IMPORTANT REMINDERS AND ADDITIONAL INFORMATION FOR INVESTIGATORS

APPROVED STUDY DOCUMENTS:
You must use any date-stamped versions of recruitment materials and informed consent documents available in the eResearch workspace (referenced above). Date-stamped materials are available in the "Currently Approved Documents" section on the "Documents" tab.

RENEWAL/TERMINATION:
At least two months prior to the expiration date, you should submit a continuing review application either to renew or terminate the study. Failure to allow sufficient time for IRB review may result in a lapse of approval that may also affect any funding associated with the study.

AMENDMENTS:
All proposed changes to the study (e.g., personnel, procedures, or documents) must be approved in advance by the IRB through the amendment process, except as necessary to eliminate apparent immediate hazards to research subjects. Should the latter occur, you must notify the IRB Office as soon as possible.

AEs/ORIOs:
You must inform the IRB of all unanticipated events, adverse events (AEs), and other reportable information and occurrences (ORIOs). These include but are not limited to events and/or information that may have physical, psychological, social, legal, or economic impact on the research subjects or others.

SUBMITTING VIA eRESEARCH:
You can access the online forms for continuing review, amendments, and AEs/ORIOs in the eResearch workspace for this approved study (referenced above).

MORE INFORMATION:
You can find additional information about UM's Human Research Protection Program (HRPP) in the Operations Manual and other documents available at:

www.research.umich.edu/hrpp.