



UNIT I

Preparing for Your Capstone Project

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CHAPTER 1

The Importance of Research in the Doctor of Nursing Practice Degree

OBJECTIVES

Upon completion of this chapter, the reader should be prepared to:

1. Describe the fundamental differences between a practice-oriented doctorate and the traditional research-focused doctorate.
2. Discuss the seven primary areas of content that the American Association of Colleges of Nursing has recommended be included in all doctor of nursing practice (DNP) programs.
3. Review the timeline that led to the development of the DNP degree.
4. Discuss the concerns that have arisen regarding implementation of the DNP degree.
5. Review the primary areas of content of any DNP program.
6. Describe how the DNP graduate should be prepared to function as an agent for quality improvement.
7. Describe how the DNP graduate should be prepared to act as an advocate for health care through use of healthcare policy.
8. Describe how the DNP graduate should be prepared to function as an advanced practice nurse in a specialty.
9. Describe how the DNP graduate should be prepared to utilize information systems and technology.
10. Describe how the DNP graduate functions while assuming an aggregate focus.
11. Discuss the relationship of the DNP graduate's clinical scholarship to evidence-based practice.
12. Differentiate between a systematic review and the development of clinical practice guidelines.
13. Describe the process of evidence-based decision making.
14. Be familiar with websites that can provide additional information related to evidence-based practice.

► Introduction to the Doctor of Nursing Practice Degree

The doctor of nursing practice (DNP) degree is a terminal practice degree that has the goal of preparing nurses to assume leadership roles in clinical practice, clinical teaching environments, and action research arenas. It is a graduate degree that builds on the generalist foundation produced through the acquisition of a baccalaureate and master's degree in nursing (National Association of Neonatal Nurses, n.d.). The degree provides less emphasis on theoretical underpinnings and research initiation and greater emphasis on advanced clinical practice, utilization of research, and accurate evaluation of both practice and care delivery models (Association of Operating Room Nurses, 2011). According to the American Association of Colleges of Nursing (AACN), the DNP degree has tremendous momentum—whereas in 2005, eight programs were admitting DNP students and 80 institutions were considering the development of such programs, by 2013, 222 colleges had developed DNP programs and were accepting students (AACN, 2013).

Timeline for the Development of the DNP Degree

Although the concept of a practice doctorate in nursing is not a new one, the timeline for the creation of the DNP degree extends more than 20 years. In fact, the first practice-focused nursing doctorate was offered in 1979 at Case Western Reserve University. The origins of the DNP degree can be traced back as far as the early 1900s, however, when nurses were first awarded a doctoral degree in education. Doctor of nursing science degree programs began to emerge by 1970. These programs required clinical competence and proficiency as well as scholarly research. Progress toward the ultimate development of the DNP degree continued as the doctor of nursing degree emerged in 1979 to prepare nurses who were assuming the role of the clinical leader.

The next step was the development of the DNP degree, which was initially focused on nurse practitioners. This degree was first developed to prepare nurse practitioners for independent primary care roles in multiple settings but is proving to be valuable for all types of nurses in advanced practice settings. It focuses on direct care, with a concentration in research utilization to improve delivery of care, patient outcomes, and clinical systems management. The AACN has recommended that the DNP degree be the standard for entry into advanced practice for nurse practitioners, nurse-midwives, nurse anesthetists, and clinical nurse specialists by 2015. An anticipated benefit of the DNP degree is a higher rate of reimbursement for the services for advanced practice nurses in the previously mentioned specialties (National Association of Neonatal Nurses, n.d.).

As DNP programs have developed and continue to evolve, certain characteristics have begun to distinguish these practice-oriented programs. Such characteristics include:

- Less content focused on research methodology, focusing instead on the evaluation and usage of research rather than the implementation of the research process.
- Use of a capstone project in most DNP programs that is grounded in clinical practice and designed to solve problems in practice or to add new information to practice.

- Emphasis on clinical practice improvement, innovation and testing of interventions, testing of care delivery models, evaluation of healthcare outcomes, and the expertise to provide leadership in establishing clinical excellence (AACN, 2006).

These differences make the DNP degree the unique educational credential that it is, and they equip the graduate with the knowledge and skills needed to be an active participant in the research process.

The Capstone Project

The previously mentioned capstone project used in the majority of practice-oriented doctorates is an integrative practice experience that results in a practice-focused, written document that will be subjected to peer and/or professional scrutiny. It is the DNP degree's alternative to the research-focused doctorate degree's dissertation. The capstone project is the culmination of the student's academic experience (Rutgers College of Nursing, 2016), and it should make a significant contribution to evidence-based nursing practice or indicate the solution to an existing problem in the healthcare delivery system. The capstone project is integral to the DNP degree because the hallmark of all doctoral education is the completion of a project that both illustrates the synthesis of the student's work and provides the foundation for future scholarship.

Some DNP programs prefer the capstone project to be a practice portfolio that documents the impact of practice initiatives or outcomes resulting from practice. Another frequently used format is that of a practice change initiative. This can consist of a pilot study, a program evaluation, a quality improvement project, an evaluation of a new practice model, or a consultation-type project. Although quantitative research is certainly possible for the DNP graduate and will be discussed in this text, many graduates gravitate toward qualitative research and thus qualify for the expedited category if using human subjects and approaching an institutional review board. An institutional review board will usually consider a research project to qualify for the expedited category if it poses little risk to the human subjects involved (Auburn University at Montgomery, 2016).

A qualitative research project focused on quality improvement can frequently be an excellent choice for a DNP student's capstone project, regardless of the practice setting. This text will focus on the planning, organizing, implementing, and evaluating the capstone project, including the intricacies of navigating through the institutional review board (AACN, 2006).

Other examples of DNP capstone projects that have been utilized in these programs include the submission of manuscripts for publication, involvement in a large institution-wide research project, completion of systematic reviews, and the development of evidence-based clinical practice guidelines. Systematic reviews and clinical practice guidelines will be addressed in more detail later in this chapter.

Regardless of the form it assumes, the final DNP project will be derived from the practice experience of the student and reviewed and evaluated by an academic committee, much in the way that a research-focused doctoral candidate undergoes the defense of a dissertation. The underlying theme in any project should be the use of evidence to improve practice through either healthcare delivery or patient outcomes (AACN, 2006). Thus, it becomes clear that the DNP program cannot be separated from the concept of evidence-based practice and its foundation in research.

Benefits of Implementing the DNP Degree

Implementing the DNP credential for advanced practice nurses may allow these nurses to become even more competent in the multiple roles of practice, faculty, and leadership. As these nurses enhance their knowledge base, they will have the ability to improve their nursing practice as well as their patient outcomes through improved healthcare delivery. Their nursing practice will also be strengthened by their enhanced leadership skills. Nurse educators have identified that the current educational curriculum is inadequate for preparation of advanced practice nurses in light of healthcare's increasingly complex skill set, which incorporates new knowledge in the areas of information systems, technology, healthcare policy development, and epidemiology. At least six areas of practice have been identified as being inadequately addressed in current nursing curricula for advanced practice nurses:

1. Practice management
2. Health policy
3. Use of information technology
4. Risk management
5. Evaluation of evidence
6. Advanced diagnosis and management of the disease process (Apold, 2008)

TOOLBOX

Begin considering various topics that would be of interest to you as a focus for your capstone project. You'll want to begin this process by initially addressing some basic questions:

- Is there a clear need for an area to be changed or improved in your current work environment?
- Are there individuals in your current facility who would be supportive of a project in this area?
- Are there resources that could be made available to assist you, such as personnel or funding?
- Is this idea manageable and realistic? (Determine this by mapping a timeline.)
- Can you verbalize what you would be attempting to achieve by implementing the project?

If you can answer these questions, you are well on the way to developing the topic for your project. If you cannot answer the questions, don't be concerned; you have initiated the important process of determining your project focus. The development of the capstone project will be addressed in further detail later in the text.

These practice areas can be incorporated into DNP programs to prepare the new generation of clinicians.

Concerns Regarding Implementation of the DNP Degree

As would be expected, concerns arose regarding the implementation of this new degree. A primary source of anxiety for clinicians was the title for the graduate of a

DNP program. The DNP degree is intended to be a practice doctorate, so discussion has arisen over the use of the title of “doctor.” In reality, if credentials are clearly displayed by the graduate, there should be no confusion on the part of patients, the public, or practitioners. Advanced practice nurses who complete such a program will retain their specialized credentials but will simply have the enhanced knowledge and leadership skills unique to the DNP program (National Association of Neonatal Nurses, n.d.).

A second concern that has been raised, particularly by practicing nurse practitioners, is the reaction of state boards of nursing if the DNP degree becomes the entry-level degree for nurse practitioner education. This should not be a source of anxiety for any candidate for a DNP program, because no certification agency currently requires the practice-oriented doctorate as an eligibility requirement and regulatory bodies have not drafted a plan to require all nurse practitioners in current practice to obtain the DNP degree (National Association of Neonatal Nurses, n.d.).

A third concern with very practical overtones is the job market for the DNP graduate. What will be the demand for DNP-prepared advanced practice nurses, and would their pay be adequate to justify the expense of the additional education? Research has shown a link between higher levels of nursing education and more positive patient outcomes, so it is thought that DNP-prepared clinicians will prove their worth through their leadership skills, honed critical-thinking ability, and heightened economic and public policy knowledge, in addition to their superior clinical skills (National Association of Neonatal Nurses, n.d.).

In addition, there is a concern that nurses who have acquired the DNP credential may have difficulty finding tenure-track faculty positions, because the PhD has traditionally been considered the entry-level degree for an assistant professor in academia. Because tenure provides professors with unique rights, status, and privileges, in addition to implied longevity in the current position, it will be the responsibility of nursing leaders in academia to ensure that DNP-prepared faculty are not only prepared to apply for tenure but also are thoroughly incorporated into the overall university environment, including committee participation. The DNP graduate who opts to move into a career in academia must select his or her academic appointment carefully to ensure that the position assumed is one that enhances the recently acquired degree rather than diminishes it (Apold, 2008). Many DNP-prepared nurses are already being utilized in academia with great success.

Recommended Content for DNP Programs

Because of the explosive growth in practice-oriented nursing doctoral programs, the AACN developed a task force that was charged with examination of the current status of such programs. The task force recommended that practice-focused doctoral nursing programs include seven primary areas of content:

1. The scientific basis for practice
2. Advanced nursing practice
3. Organization and system leadership/management and quality improvement
4. Analytic methodologies related to practice evaluation and the application of evidence for nursing practice

5. Utilization of both technology and information for the improvement and transformation of health care
6. The development, implementation, and evaluation of health policy
7. Interdisciplinary collaboration for improving patient healthcare outcomes as well as healthcare outcomes for the greater population (AACN, 2006)

Review of these areas of content will reveal the importance of the research process to the DNP student. It is the intent of the DNP curriculum that graduates will have a broad scientific base that can be translated efficiently to influence healthcare delivery and patient outcomes. These outcomes encompass not only direct patient care, but also the needs of the family unit, the community, and, ultimately, the global patient perspective. In order to be able to conceptualize new healthcare delivery models, graduates must be adept at working in both organizational and public policy arenas. The DNP graduate must be particularly proficient in quality management strategies and at functioning as a change agent at both the local organizational level and the greater policy level. He or she must be able to evaluate the cost-effectiveness of a particular aspect of care delivery and have enough knowledge of finance and economics to design realistic, fiscally sound patient care delivery strategies. However, none of these strategies can be accomplished without the presence of a sound scientific base that can translate both effectively and efficiently into patient care delivery (AACN, 2006; Auerbach et al., 2014).

► The DNP-Prepared Nurse in Academia

Although the DNP degree was originally developed as a practice doctorate for nurses, it has evolved into a versatile degree that prepares its graduates to practice in a variety of roles, including leadership roles in advanced practice, research, healthcare policy, and academia. The graduates of DNP programs have proven particularly valuable as faculty members in nursing educational programs. The American Association of Colleges of Nursing's (AACN) 2015 white paper acknowledged that whereas graduates of PhD as well as DNP programs are prepared to generate new knowledge, the DNP graduate has the distinction of generating such knowledge through development of practice innovations, translating evidence into viable bedside practice, and implementing processes of quality improvement in specific practice settings and with specific populations. Such preparation gives the DNP-prepared nurse a unique skill set that translates easily into the academic setting.

Many DNP programs include additional preparation for the nurse educator role, which provides additional preparation for the DNP graduate to fill a faculty role at the collegiate level. The AACN further recommends that nurses who are enrolled in DNP programs who have a goal of functioning as nursing faculty arrange for additional preparation in the educator role as well as instruction on pedagogies to arrange for a smooth transition into the faculty role upon graduation (American Association of Colleges of Nursing, 2015). Although Udulis and Mancuso (2015) identified that there are multiple areas of confusion regarding the applicability of the DNP graduate to function in academic leadership and to provide scholarship, this demonstrates that the DNP degree and the capabilities of its graduates are still developing and may continue to evolve as nursing as a profession changes in the twenty-first century.

► The DNP Graduate as an Agent for Quality Improvement

The concept of the DNP graduate being an agent for quality improvement in a facility through an emphasis on systems thinking is so important that the AACN considers it one of the essential hallmarks of a DNP curriculum. In fact, the AACN states that the DNP program should prepare a graduate to:

- Develop and evaluate patient care delivery approaches to meet both the current and anticipated needs of patient populations; this development and evaluation process should be based on scientific findings in nursing as well as economic theory, political science, and organizational research.
- Ensure accountability for the quality of the health care delivered and the degree of safety of the patient populations with whom the graduate works.
- Use advanced communication skills and processes to lead quality improvement and patient safety initiatives in a healthcare system; these advanced communication processes should include technological skills that would require the graduate to be adept with various forms of computerized communication.
- Use principles of business, finance, economics, and health policy to develop and implement plans to improve the quality of healthcare delivery; these plans may be at the practice level or the system level.
- Develop a budget for practice initiatives for improved delivery of patient care; this includes the ability to monitor the budget for efficient use of the funds.
- Analyze the cost-effectiveness of practice initiatives to improve healthcare outcomes, taking into account the risk involved to both the overall system and the patient population.
- Demonstrate sensitivity to diversity in both patients and providers, both at the cultural level and at the overall patient population level.
- Develop and/or evaluate effective strategies for management of ethical dilemmas that can occur in the course of healthcare delivery, whether in the healthcare organization itself or within the research process. (Modified from American Association of Colleges of Nursing (2006). *The essentials of doctoral education for advanced nursing practice*. Retrieved September 26, 2009, from <http://www.aacn.nche.edu/DNP/pdf/Essentials.pdf>)

An offshoot of the incorporation of quality improvement initiatives for the DNP student is clinical prevention and population health. The AACN defines clinical prevention as health promotion and risk reduction, as well as illness prevention for both individuals and families. Population health is considered to include aggregate, community, environmental, occupational, cultural, and socioeconomic dimensions of health, with aggregates being groups of individuals who can be defined by a shared characteristic such as gender (AACN, 2006). The DNP graduate is focused in the areas of clinical prevention and population health in an effort to improve the overall health status of the population of the United States while continuing to integrate nursing's long-standing emphasis on health promotion and disease prevention. These foci are also consistent with the DNP graduate's focus on evidence-based practice and research because the student should be prepared to analyze epidemiological, biostatistical, occupational, and environmental data. Groundbreaking knowledge of infectious disease processes as well as disaster preparedness and triage also will be integrated into clinical prevention (AACN, 2006).

TOOLBOX

A quality improvement project is a great way to implement your capstone project. Because it frequently is something that a facility such as a hospital would be implementing as part of its overall quality initiative, it may be easy to obtain institutional support for the project. Typically, the more that a project is institutionally driven, the easier it is to move smoothly through the institutional review board process. Can you think of a quality improvement initiative that would benefit your facility and also form a basis for a capstone project?

► The DNP Graduate as an Advocate for Health Care Through Use of Healthcare Policy

The framework for delivery of healthcare services is provided by healthcare policy—whether through governmental regulations, institutional procedures, or the standards of a healthcare organization—and that framework can either enhance or impede healthcare delivery to patients. Although political activism and a commitment to policy development that will lead to delivery of the highest possible quality of health care for patients are integral to the role of the professional nurse, the DNP graduate will be uniquely qualified to assume a leadership role as advocate for both the public and the nursing profession. The DNP graduate will be prepared not only to design and implement new healthcare policies but also to influence existing policies that will significantly affect the financing of health care, practice regulation, access to health care, safety in patient care, quality of care delivered, and efficacy in patient care outcomes. The DNP curriculum should prepare the graduate to analyze the policy process and competently influence policy formation. The graduate's analysis should occur from the perspectives of consumers, nursing, allied and ancillary healthcare professions, and the public, all of whom will be stakeholders in the policy development process. The graduate should be prepared to attempt to influence policy makers through participation on committees at every level, whether institutional or international, so that patients will receive improved delivery of health care and higher level outcomes. Finally, the DNP graduate will educate all stakeholders in conjunction with serving as an advocate for both the nursing profession and patients so the public is informed regarding the need for improved patient care outcomes (AACN, 2006).

Accurate evaluation of healthcare policy frequently occurs most effectively through interprofessional collaboration. The modern healthcare environment depends on the skills of individuals from multiple professions. This means that DNP graduates must have preparation in leadership of teams as well as the establishment of interprofessional teams. Regarding interprofessional collaboration, the DNP program should prepare the graduate to:

- Use effective communication and collaborative skills in both the development and implementation of practice models; these skills should also be utilized in peer review, practice guidelines, health policy, standards of care, and production of other scholarly works.

- Lead interprofessional teams to analyze complex practice and organizational issues.
- Use both consultative and leadership skills with intraprofessional and interprofessional teams to serve as change agents in healthcare delivery systems (AACN, 2006).

TOOLBOX

Do you serve on any interprofessional committees in your facility or in your local healthcare community? If not, check on the availability of areas in which you can serve in the role of advocate. Interprofessional collaboration will result and may also provide you with access to individuals who are ready to assist you as you implement the capstone project. Is the level of interprofessional collaboration in your own facility strong? If not, what could you do in your new role of DNP to strengthen this collaboration?

► The DNP Graduate as an Advanced Practice Nurse

A hallmark of the DNP degree is preparation to practice in a specialized area within the larger, overriding umbrella of the nursing profession. Although in reality no nurse can demonstrate mastery of all advanced roles with a grasp of the knowledge required to function in each of them, DNP programs should prepare the nurse to practice within a distinct specialty that requires both expertise and an advanced knowledge base that includes legal and regulatory issues. In preparation for functioning in a specialty practice role, the DNP program will provide foundational practice competencies such as honed assessment skills and the application of biophysical, psychosocial, behavioral, sociopolitical, cultural, and economic knowledge in practice settings. The DNP graduate functioning as an advanced practice nurse utilizes a holistic perspective to assist patients, families, and communities in decision making, making positive lifestyle changes, and self-care. Because the advanced practice nurse assesses, manages, and evaluates patients at the most independent level of clinical nursing practice, the DNP student is required to take courses in advanced health, physical assessment, advanced physiology and pathophysiology, and advanced pharmacology. These courses will assist the DNP graduate who is practicing as an advanced practice nurse to identify developing practice trends, identify changes occurring at the systemic level, and make improvements in the care of patient populations within their practice systems. In their function as advanced practice nurses, DNP graduates should be adequately prepared to:

- Conduct a comprehensive, systematic assessment of health and illness parameters in complex situations; because these situations may involve individual patient populations, families, communities, nations, or even global populations, the graduate must be able to incorporate cultural sensitivity in diverse scenarios.
- Use nursing science as well as other sciences to design, implement, and evaluate therapeutic interventions and the patient care outcomes that result from them (AACN, 2006).

TOOLBOX

What practice trends can you identify in your local, state, and regional healthcare communities? Do you view these trends as being beneficial and generating positive patient care outcomes, and do you see them as potentially harmful to consumers? Give the rationale for your answer.

► The DNP Graduate as a User of Information Systems and Technology

The DNP graduate is distinguished by the ability to use information systems and technology to provide leadership within a healthcare system or an academic setting. The degree equips the graduate to design, select, and utilize information systems and technology to evaluate programs of healthcare delivery, outcomes of patient care, and systems of care. Incorporation of information systems and technology enables the graduate to use tools regarding budget and productivity as well as Internet-based tools to enhance patient care. The DNP graduate should be prepared to demonstrate both the conceptual ability and technical skills needed to develop and implement a plan for data extraction from databases containing practice information. Once such a plan is implemented, the graduate should be capable of categorizing the data extracted from such databases, using the appropriate computer program to generate statistics, and then accurately interpreting those statistical results. In addition, the graduate should be proficient in using information systems and technological resources as quality improvement initiatives are incorporated into the healthcare delivery system. Finally, the graduate should have knowledge of the standards and principles involved in the evaluation of patient care technology and the ethical, regulatory, and legal issues that surround such an evaluation (AACN, 2006).

TOOLBOX

The public is more technologically adept today than ever before. Does the area where you practice maintain a list of websites that will provide patients with accurate information that they can access once they are discharged? If not, develop this and provide it to patients upon discharge. This will ensure they absorb more accurate information during discharge teaching and also act as follow-up to answer questions that may arise. Are you familiar with the process typically used in your area of practice for discharge teaching? Would you change it if you could, and if so how?

► The DNP Graduate with an Aggregate Focus

The DNP graduate who functions in an administrative, healthcare policy, informatics, or population-based specialty has an aggregate focus, which means the graduate directs his or her attention toward populations, systems, organizations, and state or national policies. Although these specialties may not have direct patient care responsibilities, there will still be the need for problem definition and the design of health

interventions at the aggregate level. The DNP graduate who opts to have an aggregate focus will, out of necessity, be required to be competent in community assessment techniques so that aggregate health or system needs can be identified (AACN, 2006).

TOOLBOX

Envision yourself functioning at the aggregate level and addressing public policy. Are there healthcare policies in your state or at the national level that you would like to address? If so, what are they, and how would you like to change them? How would these changes affect consumers of health care within the next 5 years?

► The DNP Graduate's Clinical Scholarship and Evidence-Based Practice

It has been established that scholarly research is a hallmark of doctoral education. In the case of the DNP graduate, the nurse applies knowledge in the solution of a problem. This is known as the scholarship of practice in nursing. This form of scholarship highlights key activities of DNP graduates—namely, the translation of research into practice, as well as the dissemination and integration of new knowledge. Whereas research-focused nursing doctoral programs provide the research skills needed for discovery of new knowledge in the discipline, DNP programs provide the leadership skills needed for the graduate to engage in evidence-based practice. According to Pipe, Wellik, Buchda, Hansen, and Martyn (2005), evidence-based practice focuses on methods of critically appraising and applying available data and research to achieve a better understanding of clinical decision making. The method integrates research evidence with clinical expertise and patient values, which means that the best available evidence will be combined with clinical judgment. This necessitates competence in knowledge application, which consists of:

- Translating research into practice
- Evaluating practice
- Improving the reliability of healthcare practice and outcome
- Participating in collaborative research

This means DNP programs focus on applying new science and evaluating new knowledge. In addition, DNP graduates use their practice to generate evidence that will serve as parameters in guiding improvements in practice and patient care outcomes (AACN, 2006). Evidence in health care most frequently consists of:

- *Quasi-experimental studies*—Often used because they do not require randomization or control of all variables.
- *Descriptive research*—Considered to be a systematic analysis of an area of interest to the researcher; often uses survey instruments and does not necessarily examine causation.
- *Ex post facto studies*—These can be used very effectively by the DNP graduate once a healthcare trend has been identified; they involve retrospective research that allows the cause-and-effect relationship to be discovered as variables are analyzed. Once the cause-and-effect relationship can be identified, a preventive strategy can be developed (Hanchett, 2005).

Regarding evidence-based practice, the DNP graduate will be prepared to perform a critical appraisal of existing literature, apply relevant findings in the development of practice guidelines, design and implement processes to evaluate practice outcomes, and design, implement, and evaluate quality improvement methodologies. Ultimately, the graduate should be able to:

- Collect appropriate data to generate evidence for nursing practice.
- Direct the design of databases to generate evidence for practice.
- Analyze data derived from practice.
- Design evidence-based nursing interventions.
- Predict and analyze patient care outcomes.
- Examine patterns of behavior and outcomes.
- Identify gaps in the evidence for practice (AACN, 2006).

The relationship of the DNP graduate to evidence-based practice is illustrated by the definition of this type of practice. The American Association of Neuroscience Nurses defines evidence-based practice as the integration of the best, most accurate evidence available; nursing expertise in the field; and the values as well as preference of the individuals who are served or the families or even communities if they assume the client role. The idea of best practices means that care concepts, interventions, and techniques are grounded in research and therefore will promote a higher quality of client care (Mcilvoy & Hinkle, 2008). The DNP graduate addresses this concept by performing systematic reviews. This means that the findings of all methodologically sound studies that address the same research question are summarized. The systematic review treats eligible research studies as a population to be sampled and surveyed. The individual study characteristics and results will then have an abstract developed, and results will be quantified, coded, and developed into a database that can be statistically analyzed (DiCenso et al., 2000).

The systematic review can be an outstanding research tool for the DNP clinician. As a graduate of a practice-focused doctoral program, the practitioner who conducts such a review is able to make an objective assessment of the available evidence, specifically of the outcomes of particular interventions that could be implemented. The evidence will be located, evaluated, and then consolidated into a comprehensive and unbiased summary. The comprehensive nature of the review allows literature to be sorted into low, and high-quality categories. If the sheer volume of available resources is overwhelming, the quantity of literature can be reduced by:

- Reducing the time frame of the search to within the past 5 years.
- Restricting the number of databases investigated.
- Narrowing the focus of the study by selecting specific research methods.
- Reducing the search to certain journals, although the DNP clinician should recognize that this may skew results.
- Limiting searches to studies published in certain nations.
- Excluding unpublished literature (also known as gray literature) (Forward, 2002).

The integration of the process of translating evidence into practice for the DNP clinician can best be illustrated by Carper's work, which identified four essential patterns of knowing in nursing: empirical, ethical, personal, and aesthetic patterns (Pipe et al., 2005). Empirical knowing was defined as relating to factual descriptions,

explanations, and predictions; ethical knowing was thought to pertain to moral obligations, values, and desired results; personal knowing was defined as the genuine relationship that develops between each nurse and patient; and aesthetic knowing referred to the nurse's perception of the significant areas in the patient's behavior as well as the art involved in performing nursing skills. Evidence-based practice is believed to pertain most closely to empirical knowing, focusing on critical appraisal and application of available data and research in order to understand the process of clinical decision making more fully.

Evidence-based clinical practice guidelines developed as a means of influencing patient outcomes while bringing evidence-based practice into bedside nursing practice. Clinical practice guidelines are practice recommendations based on analysis of the evidence available on a specific topic and a specific patient population (Mcilvoy & Hinkle, 2008). The guidelines are developed with representation from as many stakeholders as are interested in contributing, should be tested by healthcare professionals who were not involved in their development, and should be reviewed regularly and then modified as needed in to incorporate new knowledge that is emerging in the field (DiCenso et al., 2000).

The concept of evidence-based nursing was consolidated by Flemming (1998) into five distinct stages:

1. Information needs are identified in current practice and are then translated into focused questions; the questions should be searchable and still reflect the focus on a specific patient, clinical situation, or managerial scenario.
2. Once a focused question has been identified, it is used as a basis for a literature search so that the relevant evidence from current research can be identified.
3. The relevant evidence that has been gathered undergoes critical appraisal to determine if validity is present; the extent of the generalizability of the research will also be appraised.
4. A plan of care is developed using the best available evidence and clinical expertise, as well as patient perspective.
5. A process of self-reflection, audit, and peer assessment is used to evaluate implementation of the designed plan of care.

Unless the focused question is framed correctly, the DNP graduate will have difficulty implementing evidence-based practice through the translation of evidence. An accurately framed question should consist of the clinical situation being addressed, the selected intervention, and the patient care outcome (Flemming, 1998).

TOOLBOX

Think about your current area of practice in your facility. Are there areas that you know are being implemented daily but are not grounded in evidence-based practice? If so, why do you think that these areas have continued to be utilized? What could you do as a DNP to change them? How would you initiate the change process?

► The DNP Graduate's Participation in Evidence-Based Decision Making

An integral part of evidence-based practice is evidence-based decision making, and the DNP graduate is uniquely qualified to fully participate in this process. Evidence-based decision making involves combining the knowledge the DNP graduate derives from clinical practice with patient preferences and research evidence that is weighted based on its internal and external validity. It is evidence-based decision making that will allow nurses who hold a practice doctorate to actively engage with research evidence as it is accessed, appraised, and incorporated into these clinicians' professional judgment and clinical decision making. There are several components of the process of evidence-based decision making:

- Formulate a focused clinical question once there is a recognized need for additional information; the DNP clinician's capacity to fulfill a variety of roles in a facility will allow this to occur easily.
- Search for the most appropriate evidence to meet the need that has been previously identified.
- Critically appraise the evidence that has been retrieved to meet the identified need.
- Incorporate the evidence that has been critically appraised into a strategy for action.
- Evaluate the effects of decisions that are made and actions that are taken; the DNP clinician's close ties to the clinical setting will allow such evaluation to occur easily (Thompson, Cullum, McCaughan, Sheldon, & Raynor, 2004).

Each component must be fully implemented to ensure the process that is occurring is one of evidence-based decision making.

TOOLBOX

The previous toolbox asked you to identify areas in your practice area that you know are not based on evidence-based practice but have continued to be implemented. Once the change process has been initiated to ground these practices in current evidence, how do think the overall change process would be implemented?

► The Process of Translating Evidence into Clinical Practice

As graduates of practice-focused doctoral programs, DNP students will be uniquely qualified to frequently progress through the process of reformulating evidence into clinical practice. As graduates of a practice-oriented doctoral program, these clinicians should be continually involved in the systematic review of research in preparation for designing a change in practice based on the validated evidence. Rosswurm and Larrabee's model proposed that six phases are involved in this process (1999):

1. *Assessing the need for a change in practice*—Determine whether there is sufficient evidence to warrant initiating the process of changing nursing

- practice; this is accomplished by collecting internal data about the current practice and then comparing it to the external data (Duffy, 2004).
2. *Linking the problem with nursing interventions and patient care outcomes*—Once the clinician has determined that evidence indicates a need for a change in nursing practice, he or she must identify the nursing interventions that could potentially create the change and the outcomes that would ideally result from that change.
 3. *Synthesizing the best evidence*—Conduct an exhaustive literature search so the literature can be weighed and examined with a critical eye; although a large body of literature may be identified, unless it is of the highest quality, there may not be sufficient need to progress through the process of translating that evidence into practice. The DNP graduate can carry out this step through a systematic review, because once the clinical problem has been identified, it must be stated as a focused clinical question that can be answered by searching the literature. It is the focused clinical questions that will be used to select keywords and limits for the search in order to make it more precise. Potential benefits and risks to the patient must be identified prior to implementing a change in nursing practice (Duffy, 2004).
 4. *Designing the practice change*—Involve stakeholders to identify strategies that will explore the original issue as much as possible and then be used to implement it into practice; often referred to as a clinical protocol, this change should take into account the practice environment, available resources, and stakeholder feedback. The less complex the new protocol, the more likely it is to be accepted by stakeholders. Conducting a pilot test of the new protocol can make the change more acceptable because it will allow stakeholders who are practitioners to influence the formation of the change to suit their needs (Duffy, 2004).
 5. *Implementing the practice change*—If the evidence supports changing nursing practice, begin implementation of the strategies that were identified in the previous step, evaluating each carefully to ensure they are indeed evidence based. During this process, follow-up reinforcement of learning should occur, as should data collection of outcomes from stakeholders, analysis of the data, and interpretation of the results to determine whether the protocol was implemented as was originally intended and the effect of the new protocol on patient care outcomes (Duffy, 2004).
 6. *Integrating and maintaining the change in practice*—Once the change in nursing practice has been integrated, maintain the change through development of evaluation criteria that allow for frequent reassessment of the change and the interventions that were used to implement it. Planned change principles should be used at this point, with administration providing the infrastructure and resources needed to implement the change (Duffy, 2004).

This chapter has illustrated the ever-strengthening relationship of the DNP clinician to the research process and patient care outcomes. This practitioner's educational background and capacity for fulfilling multiple roles in the nursing community prepare the DNP graduate to provide unique contributions to nursing research in all areas of the healthcare community. Subsequent chapters will break down the specific

areas of the research process into reality-focused, manageable sections that can be implemented in any practice setting that is the focus of the DNP clinician.

► Learning Enhancement Tools

1. Suppose you are a DNP graduate who is employed in a large hospital in the area of quality improvement. You have found that a large number of medication errors typically occur on a particular surgical floor when the unit admits more than six postoperative patients per shift.
 - a. You are interested in developing a protocol to decrease the number of medication errors. How can this be addressed through a systematic review?
 - b. After performing the systematic review, you opt to develop clinical practice guidelines. How should this process most appropriately occur?
2. Imagine you are a DNP graduate who is working in the area of risk management in a large medical practice. You find that evidence seems to indicate a need to manage preoperative anxiety more effectively in the patient population to achieve better postoperative patient outcomes. Describe the process of translating this evidence into clinical practice.
3. Imagine you are a DNP graduate who is functioning as a clinical coordinator in a large psychiatric facility that treats primarily adolescents. You note that a few of your patients seem to achieve a more manageable level of anxiety when they practice the technique of journaling. You are interested in determining whether this would be an effective technique to use with all of the adolescent patients who are experiencing a high level of anxiety. How would you want to frame the focused question regarding this clinical situation to accurately implement evidence-based nursing?
 - a. Imagine further that you have developed the focused question, implemented the literature search, and begun the critical appraisal of the research evidence. You determine that validity is present, but the degree of generalizability to other patient populations will be smaller than you had originally envisioned. What should you do?
 - b. Suppose you develop a plan based on the individual patient's input, available evidence, and clinical expertise. The plan is implemented, and performance is evaluated using a combination of audits and peer assessment. The evaluation indicates that the plan was not as effective as you had hoped it would be. What should you do?
4. Assume you are a DNP graduate who is functioning in an education position in a large teaching medical center that is university affiliated. You are concerned that the intravenous catheter insertion technique currently being used with new registered nurses is not as effective as other methods.
 - a. How would you perform a systematic review of the evidence on this subject?
 - b. Once the systematic review of the evidence is completed, how would you design new clinical practice guidelines for the facility?

► Resources

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