Using Effects-Based Reasoning to Examine the DNP as the Single Entry Degree for Advanced Practice Nursing

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Abstract

In October 2004 the American Association of Colleges of Nursing (AACN) endorsed the Doctor of Nursing Practice (DNP) as the single entry degree for advanced practice nurses (APNs) beginning in 2015. This action initiated significant changes in many graduate nursing programs. Currently 153 DNP programs have enrolled students and an additional 106 programs are in varying stages of development. This article will examine real and potential outcomes of having the DNP degree as the single entry level for APN practice using an effects-based-reasoning framework. The author begins with a discussion of factors that influenced the DNP initiative and an explanation of effects-based reasoning. Within an effects-based framework, the author examines acceptance or rejection of the DNP initiative by APN programs and professional organizations, as well as the effects within the broader healthcare community. Concluding observations will be shared.

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In October 2004, the American Association of Colleges of Nursing (AACN) endorsed the Doctor of Nursing Practice (DNP) as the single entry level education for advanced practice nurses (APN), effective 2015 (AACN, 2004). The AACN is comprised of 660 nursing school deans (AACN, 2011a). The AACN mission is to serve the public interest by setting standards, providing resources, and developing the leadership capacity of member schools for the purpose of advancing nursing education, research, and practice (AACN, 2010).

According to the U.S. Health Resources and Services Administration (HRSA) (2010), approximately 8.2% of the over three million registered nurses in the US are APNs. They practice in the roles of certified registered nurse anesthetists (CRNAs), certified nurse midwives (CNMs), clinical nurse specialists (CNSs), and nurse practitioners (NPs). The endorsement and
subsequent publication of the AACN *DNP Roadmap Report* (2006) launched a plan for transforming graduate nursing education. It initiated a change process that will continue to impact schools of nursing, as well as university and state educational systems, credentialing systems, and healthcare delivery systems for some time (Fulton & Lyon, 2005).

Licensing authority belongs to state regulating agencies, governed by state legislatures. This lack of authority naturally limits the ability of the AACN to control the outcomes of the plan. The AACN endorsement of the DNP initiated a plan to change the education of advanced practice nurses. However, according to leadership and change theory, the AACN cannot control or guarantee the outcomes or effects of this plan (Pascale, Millemann, & Gioja, 2000; Pullan, 2001). The AACN does possess influence over schools of nursing that constitute the membership of the AACN and that seek accreditation from the Commission of Collegiate Nursing Education, an autonomous, accrediting arm of the AACN (2010). However, the authority to add or remove degree programs lies with the university or state higher education organization (Cartwright & Reed, 2005). As an organization, the AACN can certainly recommend changes in laws to transform state nurse practice acts, but does not have the authority to license advanced practice nurses. Licensing authority belongs to state regulating agencies, governed by state legislatures. This lack of authority naturally limits the ability of the AACN to control the outcomes of the plan.

In the seven years since this endorsement the number of DNP programs has grown to 153 and an additional 106 programs are in varying stages of implementation (AACN, 2011b). However, questions and concerns about the DNP as the single entry degree for advanced practice nursing persist (Brown-Benedict, 2008; Fulton & Lyon, 2005; Meleis & Dracup, 2005; National League for Nursing, 2007), and universal acceptance of the DNP as the sole entry degree for APNs remains elusive (American College of Nurse Midwives, 2009; American Nurses Association, 2011b; National Association of Clinical Nurse Specialists, 2009). This analysis will examine the current state of the change from master’s degree or post-master’s degree certificate to the DNP degree as the single entry degree for APN practice using an effects-based reasoning (EBR) approach and identifying real and potential effects.

Effects-based reasoning allows leaders in the nursing profession to examine the forces involved in, and the outcomes resulting from the introduction of change into an open system. Outcomes explored in this article include acceptance or rejection of the DNP initiative by advanced practice nursing programs, the acceptance or rejection of the DNP by professional nursing organizations, and the effects of the DNP initiative on the provision of healthcare in the broader healthcare community. This analysis will identify intended and unintended consequences (outcomes) of the endorsement of the DNP as sole educational entry to advanced practice nursing. The author begins this discussion by noting factors that influenced the DNP initiative and explaining effects-based reasoning. She then describes the acceptance or rejection of the DNP initiative by APN programs and professional organizations. Finally, the implications of the DNP initiative within the broader healthcare community will be detailed and considered.

**Factors Influencing the Development of the DNP Initiative**

The current environment presents many challenges for healthcare professionals as advances in the diagnosis and treatment of illness have introduced change at every level of care. The nursing
profession is now faced with an increasingly elderly population in need of nursing care, an explosion of technology in the workplace, a nursing faculty shortage, and new roles to fill in the healthcare system (Chase & Pruitt, 2006). As in the past, nursing educators need to incorporate these changes into the curriculum in order to prepare nurses for the future (Burke, 2004). Historically, nursing has prepared nurses for new roles through higher levels of educational preparation as exemplified by the AACN endorsement of the DNP initiative. Factors influencing the DNP initiative have included the evolution of APN education, the development of the Advanced Practice Registered Nurse (APRN) Consensus Model, and the endorsement of the DNP by the AACN.

**Advanced Practice Nursing Education**

The health reform discussion in the 1990s highlighted the need for graduate level education for APN practice. Education of the advanced practice nurse has evolved ever since nurses first assisted in the anesthesia of soldiers in the Civil War (HRSA, 2010), and it continues to evolve. The first school to educate nurses in anesthesia opened in 1909. Nurse anesthetists were prepared at diploma, certificate, baccalaureate, and/or master’s degree levels until 1998, when the American Association of Nurse Anesthetists (AANA) transitioned to the master’s degree as the entry level degree for CRNA practice (HRSA, 2010). In 2007, the AANA published a policy statement supporting doctoral education for entry to practice, beginning 2025 (AANA, 2007).

Although efforts were made to introduce formal nurse midwifery education in the early 1920s (American College of Nurse-Midwives, 2010; Varney, 1997), nurse midwifery education actually began in 1931 at the Maternity Center Association and the Loberstine Clinic in New York City. The initial certificate programs moved to university settings in the 1970s and 1980s. The requirement for graduate level education as the minimum education required for midwifery practice began in 2010 (ACNM, 2008).

The role of the CNS was introduced in 1954 with the goal of preparing expert clinical nurses who could practice in one of a variety of specialty areas. This movement began in acute and mental healthcare settings (HRSA, 2010), and has since spread to other settings as well. Clinical nurse specialists here been educated at the master’s degree level from the beginning (National Association of Clinical Nurse Specialists, n. d).

In 1965, the University of Colorado Health Sciences Center launched the nurse practitioner role when it initiated a pediatric nurse practitioner course of study. Although the NP movement began in the university setting, early nurse practitioners were awarded post-RN certificates of program completion rather than graduate degrees. The curriculum for the NP was diverse (Long, 1994). Over a period of time a core of master’s level knowledge was developed. In the 1990s, the master’s degree was established as entry level education for nurse practitioner specialties (Hanson & Hamric, 2003).

As societal needs become more complex and our knowledge advances, additional preparation is indeed required for APNs. This need for additional knowledge is a key driving force behind the AACN DNP initiative. The first doctoral degree conferred to nurses was the Doctorate of Education, established at Columbia University in 1924 (Courtney, Galvin, Patterson, &
In 1934, New York University began offering a Doctor of Philosophy (PhD) in nursing (Waldsperger-Robb, 2005). By the 1960s, several nursing doctorates were recognized. The first clinical doctorate established was the Doctor of Nursing Science (DNS or DNSc) (Berman, Snyder, Kozier, & Erb, 2008). Since then several types of nursing doctoral programs have developed. In 1978 the Nursing Doctorate (ND) was introduced; and at the turn of the century, the Doctor of Nursing Practice DNP and DrNP degrees were established.

The health reform discussion in the 1990s highlighted the need for graduate level education for APN practice. This level of education included increased knowledge of “health promotion, primary health care, case management, health care economics, and change strategies” (Long, 1994, p. 71). From the 1990s forward, the majority of APN programs have been taught at the master’s level. Accrediting agencies and professional organizations have established and monitored consistency in education. Nonetheless, there continues to be non-uniformity regarding the regulation of APN practice; for example, not all states require a minimum of a master’s degree for licensure or certification by a nationally recognized agency. As societal needs become more complex and our knowledge advances, additional preparation is indeed required for APNs. This need for additional knowledge is a key driving force behind the AACN DNP initiative.

**Consensus Model for Advanced Practice Registered Nurses Regulation**

As the result of many years of work, the National Council of State Boards of Nursing Advanced Practice Registered Nurse (APRN) Advisory Committee and the APRN Consensus Work Group produced the *Consensus Model for APRN Regulation: Licensure, Accreditation, Certification and Education* (APRN, 2010). As of December 2010, 48 professional nursing organizations have endorsed this document, including all agencies that accredit APN educational programs and provide certification for APNs. This document defines each of the four APN roles, addresses titling, describes APRN practice, and establishes entry to APN practice at the graduate level; it also includes the APRN regulatory model addressing licensure, accreditation, certification, and educational standards for APRNs. Individual state regulatory agencies currently differ in requirements for APN licensure; and the APRN Consensus Model acknowledges the need for educating legislators regarding advanced practice nursing. It recommends adoption of the Consensus Model nationally by 2015. The APRN Consensus Model recognizes that “as health care evolves and new standards and needs emerge, the… Model will advance accordingly to allow APRNs to care for patients in a safe environment to the full potential of their nursing knowledge and skill” (APRN, 2010, p. 20).

**Endorsement of the DNP by the American Association of Colleges of Nursing**

The AACN (2004) has described the following benefits of having the DNP as entry level education for APNs:

- advanced competencies for increasingly complex clinical, faculty and leadership roles
- enhanced knowledge to improve nursing practice and patient outcomes
- enhanced leadership skills
- better match of program requirements
- provision of an advanced educational credential
- parity with other health care professionals
- enhanced ability to attract individuals to
nursing from non-nursing backgrounds; increased supply of faculty for clinical instruction; and improved image of nursing. (AACN, 2004, p. 7)

The APN initiative is designed to provide the comprehensive educational preparation needed for APN practice today and tomorrow.

Factors Influencing Acceptance of the AACN Initiative

Factors that will influence the acceptance of the DNP as the single entry degree into advanced practice include a complex ‘system of systems’ along with characteristics of leadership and change. Both will be discussed below.

System of Systems

Although the AACN has presented a sound rationale for the DNP initiative, it is important to recognize that this initiative has been introduced into one system, an educational system, within a much larger, multiple-system construct (a system of systems). Pullan (2001) has described how a larger system can influence the acceptance of change in a smaller system within the larger system. The ‘system of systems’ into which the DNP has been introduced includes five subsystems, entailing accrediting, education, certifying, regulatory, and healthcare delivery, as described below.

Accrediting systems include those at the university, school, regional, and program levels (see Figure 1) [see all figures and table]. The educational system may include one private institution with a single nursing school or a state university system with many member schools. The Centers for Medicare and Medicaid Services (CMS) accepts seven nationally recognized, certifying agencies for nurse practitioners and clinical nurse specialists (CMS, 2010). Certification agencies for CNMs and CRNAs are the American Midwifery Certification Board, Inc. and the National Board on Certification and Recertification of Nurse Anesthetists (NBCRNA), respectively (ACNM, 2008; NBCRNA, 2010). Each state possesses at least one regulatory agency responsible for the safe practice of APNs; generally this is the state’s board of nursing (Phillips, 2011). In four states, boards of medicine in conjunction with boards of nursing authorize the professional practice of APNs; and in some states, boards of anesthesia or boards of midwifery regulate APNs (Phillips, Avery, & Howe, 2007).

Figure 1. The AACN Introduced Transformational Change into a System of Systems (adapted from Rhodes, 2008) [see all figures and table]
Within the U.S. healthcare delivery system, the initiative has been influenced by the passage of the Patient Protection and Affordable Care Act (ACA) legislating healthcare reform, the APRN Consensus Model for APN regulation, the work of agencies promoting full scope practice for advance practice nurses, interdisciplinary education to improve patient outcomes, and an economic recession. Specific healthcare delivery systems include the Institute of Medicine, the Josiah Macy Jr. Foundation, and the Robert Wood Johnson Foundation (Cronenwett & Dzau, 2010). The Patient Protection and Affordable Care Act calls for educational and financial support for primary care providers, including nurse practitioners and physician assistants (American Nurses Association, 2010a). The ACA recognizes NPs and CNMs as effective primary care providers who produce outcomes equal to those of physicians. This new legislation opens the door for far greater numbers of nurse providers. This complex system of systems into which the DNP initiative has been introduced includes many variables that the AACN is unable to control.

**Leadership and Change Characteristics**

When introducing change, some variables and outcomes will be uncontrollable. Leadership and subsequent change balance on an ever-shifting, interdependent, and increasingly complex society. When introducing change, some variables and outcomes will be uncontrollable. Pullan (2001) has explained that change is not linear; rather it occurs as leaders create coherence through a dynamic event, combining elements that do not “easily and comfortably go together”
Pullan has emphasized that leadership is key in managing the outcomes that change begets. Pascale, Millemann, and Gioja (2000) have emphasized that systems, too, cannot be directed along a linear path because unforeseen outcomes are inevitable. They note that “the challenge is to disturb them in a manner that approximates the desired outcome” (p. 6). Effects-based reasoning provides a framework in which to examine the leadership process in terms of both actual and potential effects that mark the progress of change and assist leaders in guiding change.

**Effects-Based Reasoning**

A direct, or first-order effect is the immediate result of an action...Results of first-order effects generate variables producing planned and unplanned outcomes... United States military leaders often employ the effects-based outcomes (EBO) concept as a framework for achieving the desired outcome of a specific action. The term ‘effect’ is used to describe “the power to bring about a result” (Mann, Endersby, & Searle, 2002, p. 30). Because one action may bring about a cascade of consequences, Mann et al. define effect as the “full range of outcomes, events, or consequences that result from a specific action” (p. 31). A direct, or first-order effect is the immediate result of an action, without intervening variables. Results of first-order effects generate variables producing planned and unplanned outcomes, creating subsequent variables and outcomes, described as second- and third-order effects. At each level of effects, subsequent potential outcomes are extrapolated, creating a multi-linear model of actual and potential outcomes. Smith (2002) has described effects-based operations as a “series of stimulus and response interactions” (p. 113). Smith added that the challenge in planning an effects-based operation is to determine the stimulus that will best yield the desired response or effect.

Effects-based reasoning provides a framework to explore and analyze the effects of an action. Mann et al., (2002) have addressed the application of EBO not only in military operations but also in the business world. Parallel geopolitical changes, economic globalization, and technological advances have changed international commerce, decreasing some barriers to international economics, yet also presenting new challenges and vulnerabilities. One example of an unintended consequence would be an embargo against one nation, for example Nation A, that causes a negative impact upon other nations (Nations B and C), who are also international trade partners with Nation A. The effects-based outcomes approach offers a construct to address such issues in the planning phase of either establishing business ties or creating a political policy for trade restriction.

Effects-based reasoning (EBR) is intended to provide leaders with an awareness of the challenges, barriers, and opportunities associated with implementing specific actions. Effects-based reasoning provides a framework to explore and analyze the effects of an action. It demonstrates exponential sequencing of events, both actual and potential, by identifying policy goals, determining the action to be taken, and mapping intended effects and potential unintended outcomes. In essence, EBR assists leaders in systematically identifying real and potential consequences of both desired and undesired actions.

Effects-based reasoning clarifies and informs the link between a broad goal and the tasks involved in obtaining this overarching goal. In this article, the goal to be discussed is transitioning entry level for APN education from the master’s degree level to the DNP degree.
One task is developing DNP programs; another task is addressing the need for regulatory agencies to change rules and regulations in order to replace the master’s degree with the DNP degree for entry into APN practice.

EBR assists leaders in systematically identifying real and potential consequences of both desired and undesired actions. In examining the transition to the DNP as the sole entry level for APN practice, the process of ‘mapping’ can assist nursing leaders to identify barriers, problems, and opportunities in reaching the AACN goal of making the transition by 2015. Mapping the process from the endorsement of the DNP to the enrollment of students in DNP programs illustrates the many potential pathways the initiative might take during the attempt to bring the DNP initiative to fruition (see Figure 2) [see pdf all figures and table]. The trigger action is the AACN’s endorsement of the DNP as the single entry-level education for advanced practice nurses. The first-order effect is the nursing school’s decision as to whether the school will agree to develop a DNP program, decline, or defer the decision until a future time. In the example presented in Figure 2, the school decides to pursue the development of a DNP program.

Figure 2. (Adapted from Rhodes, 2008)
The second order of effects depends on variables encountered after the nursing school decides to develop a DNP program. Such variables include the Carnegie classification of the college or university, university success with other practice doctorates, and the nursing school’s available resources for designing DNP proposals for presentation to university administration. This second-order effect, or outcome, is demonstrated by the university’s decision whether to allow the development of the DNP course of study.

Third-order effects are identified as the consequences of variables following second-order effects. In Figure 2, systems variables following the university’s approval include the level of independence regarding creating programs. If a state organization must approve the program, the
university may not develop the program until approval is granted. If no further approval is required, or if approval is granted, the DNP program may be developed. Availability of faculty and funding constitute further variables which will determine realization of the AACN vision.

Acceptance or Rejection of the DNP Initiative by APN Schools of Nursing

The goal of the AACN is the transition to the Doctor of Nursing Practice degree as the single entry educational preparation for advanced practice nurses by 2015; the endorsement represents the trigger action. First-order effects result directly from this action, specifically, the acceptance, rejection, or deferral of the DNP initiative.

In order to realize the transition to the DNP as sole entry level education for advanced practice nurses, post-baccalaureate DNP degree programs must replace 388 current master’s degree programs preparing APNs (AACN, 2010b). Currently there are 153 schools of nursing enrolling DNP students and an additional 106 schools planning DNP programs (AACN, 2011b). At the midpoint to the target date, the websites of the 51 schools offering a post-baccalaureate DNP degree indicated that these schools all offered post-master’s DNP degrees as well (AACN, 2011c; AACN, 2010d). R. Rosseter has shared that 66 post-baccalaureate programs are planned for the near future (personal communication, April 20, 2011). From available data, one cannot differentiate which of the 271 programs without plans to offer post-baccalaureate DNP programs are rejecting the DNP initiative from those deferring decision on the DNP initiative by 2015. In EBR terms, both rejecting and deferring schools represent a delay in the achievement of the goal, which subsequently may prevent the goal from being realized.

Meleis and Dracup (2005) stated that leaders in nursing education presume that master’s degree APN programs will be closed. The AACN (2010c) has describes the APN prepared at the master’s level as a “time-limited option” (p. 20). However, Cartwright and Reed (2005) have observed:

For schools already preparing advanced practice nurses at the master’s level, there are real downsides to a negative decision on the DNP. After 2015, preparation at the master’s level will cease. Beyond a potential loss of student credit hours generated, these programs tend to be a strong component of a unit’s identity and public image, attracting a large, national, and highly qualified applicant pool. Consequences…should be detailed…. (Key Issues - Internal, para. 12)

It is important to note that the autonomous accrediting arm of the AACN, the Commission on Collegiate Nursing Education (2010), stated it will continue to accredit all master’s degree programs and does not intend on changing its policy regarding APN programs.

An AACN (2010b) survey reported the challenges identified by schools for not creating a DNP programs as “insufficient faculty, limited financial resources, state regulations, [and] lack of faculty support” (Slide 17). All of these issues represent variables creating second-order effects that can delay or prevent the reaching of AACN’s goal.

Other reasons for a lack of support for the DNP to replace the master’s degree in the education of APNs have also been given. According to Apold (2008):
Studies relating educational preparation and quality at the entry level do support that more and different education results in higher quality. These data are not generalizable to advanced practice, and the suggestion that better patient care will result from this preparation, although intuitively appealing, has not been made on the basis of evidence. (Professional Concerns and Challenges, para. 7)

Dracup and Bryan-Brown (2005) have supported the continuation of the master’s degree APN programs, stating the BSN, the MSN and the PhD have become preferred degrees for each level of nursing and are recognized internationally. They appeal to the discipline to “move slowly, encouraging input from the public, other types of healthcare professionals, and state accrediting boards before the DNP is adopted in university schools of nursing” (p. 280). They add their request that if the DNP degree is universally accepted, to establish it as a post-master’s degree, allowing nurses to choose doctoral programs that would best fit their career goals. In addition, not all nursing schools currently offering master’s degree APN programs are authorized to offer doctoral education (Cartwright & Reed, 2005) and some APN master’s programs are products of schools of allied health, medical schools, or independent schools (Avery & Howe, 2007; Fulton & Lyon, 2005). All of the above variables influence acceptance or rejection of the DNP initiative.

Effects-based reasoning illustrates a potential second-order effect of fewer APN programs, should the DNP become the only entry-level education for advanced practice nurses (see Figure 3) [see pdf all figures and table]. From this effect, the third-order outcome would be reduced access to APN care. However, available data indicate that most DNP programs admit master’s and post-master’s prepared APNs; data do not indicate if DNP and master’s degree APN programs coexist or if some master’s programs were eliminated when the DNP Program was introduced (AACN, 2010b). If both master’s degree and DNP programs continue to exist, the third-order effect becomes a steady production of APNs.

**Figure 3. Effect-Based Reasoning: Acceptance, Rejection or Deferral of the DNP Initiative by APN Schools of Nursing** [see pdf all figures and table]
Considering the faculty shortage, a third-order effect includes a decrease in the number of faculty available for teaching if they are shifted to establish and instruct in the DNP curricula, possibly forcing reduced enrollment and resulting in the reduction of master’s degree and/or pre-licensure graduates. Should master’s programs preparing APNs be eliminated, all APNs will enter advanced practice nursing with the DNP degree. It is unknown if the DNP-prepared APN will have an interest in, or the opportunity to return to school to pursue a post-DNP research doctorate (Dracup, Cronenwett, Meleis, & Benner, 2005; Cronenwett et al., 2011). Indeed, both post-master’s and post-baccalaureate DNP programs for APNs translate into the third-order effect of fewer PhD-prepared APNs to teach the next generation of advanced practice nurses and conduct research specific to advanced practice nursing (Figure 3).

One sequence of events demonstrates the first-order effect of schools of nursing accepting the DNP initiative, followed by the second-order effect of establishing new and perhaps additional doctoral programs. Because this process is resource intensive, resources may be transferred away from master’s and possibly pre-licensure nursing programs to develop and teach the DNP programs (Cronenwett et al., 2011). Considering the faculty shortage (AACN, 2010b), a third-order effect includes a decrease in the number of faculty available for teaching if they are shifted to establish and instruct in the DNP curricula, possibly forcing reduced enrollment and resulting in the reduction of master’s degree and/or pre-licensure graduates. Employing EBR illustrates real and potential outcomes, in multiple sequences of effects that can be used to guide leaders in establishing conditions to prevent unintended or undesired outcomes.

Acceptance or Rejection of the DNP Initiative by Professional Nursing Organizations

Advanced practice nurses are represented by a variety of professional organizations. Membership of the American Nurses Association (ANA) and the National League for Nursing (NLN) includes nurses of all specialties and educational levels, whereas numerous APN organizations
exist for the support and advancement of APN specialties. Not all organizations have published position papers on the DNP initiative; those published are included in the Table [see pdf all figures and table]. The current positions of the professional organizations representing each of the four APN roles are summarized in the Table below.

Table. Effects-Based Reasoning Professional Nursing Organizations Accept, Reject, or Defer Decision [see pdf all figures and table]

<table>
<thead>
<tr>
<th>Organization</th>
<th>Accept</th>
<th>Accept with Qualifications</th>
<th>Reject</th>
<th>Defer Decision</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Nurses Association</td>
<td>(ANA, 2011)</td>
<td>(ANA, 2005)</td>
<td>published list of concerns and questions on education, practice, economics, regulation, credentialing</td>
<td>&quot;While supportive of the DNP, the ANA continues to endorse both master’s and doctoral preparation as entry into APRN practice&quot; (p. 1)</td>
<td></td>
</tr>
<tr>
<td>National League for Nursing</td>
<td>(NLN, 2005)</td>
<td>Absence of evidence for DNP as sole entry level education for APNs; evidence-based; encouraged research</td>
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<tr>
<td>American Association of Nurse Anesthetists</td>
<td>(AANA, 2006a)</td>
<td>evidence does not support mandatory clinical doctorate&quot; (p. 1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American College of Nurse Midwives</td>
<td>(ACNM, 2009)</td>
<td>&quot;supports doctoral education…by 2025&quot; (p. 1)</td>
<td></td>
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<tr>
<td>National Association of Clinical Nurse Specialists</td>
<td>(NACNS, 2005)</td>
<td>has significant concerns; neutral about the proposed DNP until our concerns can be resolved and our questions answered&quot; (p. 5)</td>
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<tr>
<td>American Organization of Nurse Executives</td>
<td>(AONE, 2007)</td>
<td>&quot;lack of an analysis detailing the need for and the efficacy of a practice doctorate across all aspects of care&quot; (p. 2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Practitioner Roundtable</td>
<td>(NPR, 2008)</td>
<td>&quot;DNP more accurately reflects current competencies&quot; (p. 1)</td>
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American Association of Nurse Anesthetists (AANA)

Established in 1931, the AANA assumes responsibility for the education, standards of practice, and certification of nurse anesthetists; it currently represents 40,000 certified registered nurse
anesthetists (CRNAs) (AANA, 2010). The AANA initiated certification in 1945 and recertification in 1978. It began accrediting nurse anesthetist programs in 1952, and was first recognized by the U.S. Department of Education as the accrediting authority for nurse anesthetists in 1955. The AANA (2007) position supports “doctoral education” (p. 1) by the year 2025, extending the first-order effect sought by the AACN by a decade.

**American College of Nurse Midwives (ACNM)**

The ACNM dates back to 1929. It currently represents over 18,000 certified nurse midwives (CNM) and certified midwives (CM) (ACNM, 2005, 2010; HRSA, 2010, Varney, 1997). The ACNM establishes standards of midwifery care, supports and accredits educational programs, and provides certification for CNMs and CMs. The ACNM has accredited nurse midwifery education since 1962 and is recognized by the U.S. Department of Education. In its position statement on the DNP, the ACNM acknowledges potential educational benefits of the DNP, however, it does not support the DNP as a requirement for entry into practice (ACNM, 2009).

**National Association of Clinical Nurse Specialists (NACNS)**

Founded in 1995, the NACNS exists “to enhance and promote the unique, high value contribution of the clinical nurse specialist to the health and well-being of individuals, families, groups, and communities, and to promote and advance the practice of nursing” (NACNS, n.d. a). HRSA (2010) reported an 18% decrease in the number of clinical nurse specialists (CNS) from the 2004 report from 72,521 to 59,242 (HRSA, 2006; 2010), noting that “only 18% of CNSs reported their job title as clinical nurse specialists” (p. xxxii) and 27% of CNSs are also educated as nurse practitioners. Clinical nurse specialists may seek certification through the American Nurses Credentialing Center (ANCC) or through specialty organizations (NACNS, n.d. b). The NACNS (2005) white paper expressed areas of concern from an organizational perspective and established neutrality regarding the DNP. In 2009 the NACNS again declared neutrality and reaffirmed the master’s degree as appropriate entry level education for CNSs (NACNS, 2009).

**Nurse Practitioner Round Table (NPR)**

Advanced Registered Nurse Practitioners numbered over 158,000 in 2008, representing nine specialty areas (AANP, 2010b; HRSA, 2010). Seven nurse practitioner organizations comprise the NPR for the purposes of addressing nurse practitioner issues, collaborating efforts, and presenting a unified position (NPR, 2008). Several of these groups also published individual position statements. Members of the NPR include the American Academy of Nurse Practitioners, the American College of Nurse Practitioners, the Association of Faculties of Pediatric Nurse Practitioners, the National Association of Nurse Practitioners in Women's Health, the National Association of Pediatric Nurse Practitioners, the National Conference of Gerontological Nurse Practitioners, and the National Organization of Nurse Practitioner Faculties. The 2008 NPR position statement described NP education as building on a foundation of sciences across multiple disciplines as well as the art and science of nursing, adding that “the DNP more accurately reflects current clinical competencies and includes preparation for the changing health care system” (p. 1).
The AONE has posited that if master’s degrees in nursing were no longer offered, nurses would seek master’s degrees outside of nursing...this would lead to an unintended second-order effect.

The AONE represents 7,500 nurse leaders (AONE, 2010). It has supported the DNP as an option (AONE, 2007). The organization, however, believes that master’s-level education should continue for specialty and generalist nursing education. The AONE has posited that if master’s degrees in nursing were no longer offered, nurses would seek master’s degrees outside of nursing in areas such as hospital administration or social work, creating an unintended second-order effect. If nurse leaders are educated outside of the nursing discipline, consequences include reduced nursing influence in healthcare agencies and in the healthcare system, constituting an unintended, third-order effect.

Acceptance of the DNP Initiative in the Broader Healthcare Community

In addition to the nursing profession and schools of nursing, other healthcare systems also create variables with cascading effects that influence the realization of the AACN goal. The section below discusses effects of recent decisions by the American Medical Association and of Healthcare Reform.

American Medical Association (AMA)

The AMA has introduced five resolutions since the introduction of the DNP, implying that the DNP will not establish equity with physicians; these resolutions constitute first-order effects. One resolution proposed the prevention of nurse practitioners using the title doctor; and four resolutions advocated physician control of the scope of practice of advanced practice nurses and other non-physician providers (AMA, 2005, 2006a, 2006b, 2006c, 2008). These resolutions may have consequences for the regulation of APNs. In four states, APNs are regulated by joint boards of nursing and medicine, and in some states by boards of anesthesia or midwifery (Avery & Howe, 2007; Phillips, 2011). Twenty-seven states legislate physician “collaboration, direction or supervision” of APNs (Phillips, 2011, p. 31).

Potential second-order effects stemming from the five AMA resolutions include provoking the substantial lobbying power of the AMA and state medical associations to restrict APN practice as well as decreasing collaboration among healthcare professionals. These actions could lead to the third-order effect of decreased safety and quality of healthcare, which counters goals established by the Institute of Medicine (2003). Figure 4 (see Figure 4) illustrates potential second and third order effects resulting from the AMA resolutions. Although APN practice differs from that of physicians and physician extenders, it is imperative to understand that the roles of nurse providers can be filled by others, specifically, physicians, physician assistants, anesthesia assistants, and surgical assistants, leading to an undesired third-order effect of decreased APN care.

Healthcare Reform

Should the production of nurse practitioners decrease, physician assistants may become a cost-effective solution to providing preventive and primary care. Healthcare reform promises to
utilize APNs to a greater extent, as many additional citizens will have healthcare coverage and will require primary care practitioners. The Patient Protection and Affordable Care Act highlights the need to recognize, educate, and provide payment to APNs in the provision of care (Summers, 2010). This legislation has recommended recognition, educational funding, and payment for APNs as well as for physician assistants. The Institute of Medicine (IOM), working with the Robert Wood Johnson Foundation, as well as the Josiah Macy Jr. Foundation has made formal recommendations to federal and state agencies to utilize advance practice nurses to the fullest extent of their education and training in an effort to provide healthcare to more people (Cronenwett & Dzau, 2010; IOM, 2010). Both reports recommended increased education for nurses, focusing especially on increasing the number of nurses with baccalaureate degrees. The IOM also recommended doubling the number of nurses with doctoral education “to add to the cadre of nurse faculty and researchers, with attention to increasing diversity” (p. 4).

Pohl, Hanson, and Newland, while attending the 2010 Josiah Macy Jr. Foundation Conference, discouraged actions that could decrease the number of new APNs. They recommended:

Support the DNP program as a post-master’s program and discourage the development of entry-level programs until the need for NPs in the primary care workforce is met; but offer tuition incentives for students to complete DNP programs after a period of practice in a primary care provider role. (2010, p. 203)

Cronenwett et al. (2011) addressed the current and anticipated demand for primary care providers due to the aging population and healthcare reform. They noted that physicians are choosing medical specialties, rather than primary care, leaving a growing deficit of primary care providers. Should the production of nurse practitioners decrease, physician assistants may become a cost-effective solution to providing preventive and primary care.

**Figure 4. Effects-Based Reasoning: Healthcare System**

[see pdf all figures and table]
Conclusion

...the AACN would be wise to reconsider its goal of the DNP as sole entry level to APN practice and/or the timeline for achievement of this vision. The American Association of Colleges of Nursing (AACN) has introduced change into a system of systems, thus generating many variables that are affecting, and will continue to affect the outcome of the DNP initiative. The AACN continues to provide resources to assist schools of nursing in developing DNP programs (AACN, 2010b). In fewer than seven years after endorsing its vision, 153 DNP programs have been initiated and an additional 106 programs are currently in the planning phrase (AACN, 2011b). This is no small feat in terms of leadership, producing significant desired second-order effects within the nursing education system.

This analysis cannot predict whether all APN programs will eventually offer DNP preparation. In an evidence-based framework, deferring decisions creates a lag time, which in turn could influence the AACN’s ability to achieve its initial objective. The 1979 Nursing Doctorate initiative provides an example of a protracted response time resulting in second-order effects that essentially prevented the universal establishment of this practice doctorate. Only four ND programs were in operation when the DNP was endorsed (AACN, 2004). At this time the majority of APN programs have no plans to create BSN to DNP tracks. Considering the lag time already produced by late DNP adopters, and the effect of a long lag time on the ND initiative, the AACN would be wise to reconsider its goal of the DNP as sole entry level to APN practice and/or the timeline for achievement of this vision.

At this time the majority of APN programs have no plans to create BSN to DNP tracks. For rationale published in position statements, not all professional nursing organizations support the DNP as sole educational entry into advanced practice nursing. Of the four APN categories, the AANA endorsed doctoral education for CRNAs with a fruition date of 2025; the ACNM rejected the DNP as the single entry degree to CNM practice; NACNS claimed neutrality and confirmed the master’s degree for entry into CNS practice, and the NPR supports the DNP for NPs (AANA, 2007; ACNM, 2009; NACNS, 2009; NPR, 2008). However, research has not presented evidence that the DNP will produce an improvement in the safety and quality of care provided by APNs as the number of post-baccalaureate DNP-prepared APNs is inadequate for study (Cronenwett et al., 2011; Rhodes, 2008). Moreover, data are lacking to support that the benefits of this degree justify the increased costs incurred. Ongoing research on the roles filled by the DNP-prepared APN, patient outcomes, and on the cost to the healthcare system is required.

Remarkably, the introduction of the DNP initiative during a period of increased need for APNs is reminiscent of the situation in 1965 when the ANA attempted to move the requirement for entry-level nursing practice to the baccalaureate degree. Nelson (2002) described the passing of the Medicare and Medicaid laws, the increased need for hospital nurses, and the resulting growth of the associate degree nursing programs as systems factors that prevented the establishment of the baccalaureate degree as the single entry level for professional nursing at that time in our history. In today’s environment, the urgent need for increased numbers of primary care providers must be recognized as a systems variable in the challenge to meet the AACN’s goal for the DNP as sole entry level education for APNs by 2015.
In today’s environment, the urgent need for increased numbers of primary care providers must be recognized as a systems variable in the challenge to meet the AACN’s goal for the DNP as sole entry level education for APNs by 2015. Additional systems variables include the fragile economy and healthcare reform which have introduced multiple chains of interactions. One second-order effect is the limited ability for universities to support economically the development of new programs, especially if these new DNP programs result in a third-order effect of reduced production of pre-licensure graduates (Cronenwett et al., 2011). In addition, recent healthcare reforms have produced the second-order effect of a sudden increased demand for primary care providers. Being cognizant of this potential second-order effect and taking action would avoid creating a third-order effect of failing to meet the national demand for primary care providers. Maintaining or increasing the number of APNs would help secure the nursing profession in the role of primary care providers, answering an emergent need in our nation’s healthcare system.

It is important for nurse leaders to work with physicians to build interprofessional trust. It is vital to the future of advanced practice nursing that actions of the AMA do not lead to restriction of the scope of practice for nurse providers. The potential dissolution of current partnerships between nurse providers and physicians, or the replacement of nurse providers by physician assistants or anesthesia assistants, as potential undesirable third-order effects must be avoided.

This application of effects-based reasoning has been offered to assist nursing leaders to identify and guide variables that will create unity among healthcare providers, avoid unintended effects, and lead the profession toward a desirable outcome, namely an increased nursing presence in healthcare.

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