Strategic Planning for Curricular Excellence: Anesthesia and Comprehensive Care

Since Columbia University School of Nursing (CUSON) pioneered the clinical doctorate for nursing in 2004, the healthcare environment has become increasingly complex. At the same time, a number of changes to nursing education, regulation, reimbursement, and practice have been proposed by national nursing and healthcare organizations. In 2004, the American Association of Colleges of Nursing (AACN) endorsed doctoral entry to advanced nursing practice by 2015. By 2006, doctor of nursing practice (DNP) Essentials were drafted and endorsed by the AACN. Over the next few years, national initiatives for change continued. The National Council for State Boards of Nursing adopted a Consensus Model for Advanced Practice Registered Nurse regulation; the Institute of Medicine released an in-depth report following its study of nursing education and another outlining key messages for the future of nursing. More recently, implementation of the Patient Protection and Affordable Care Act will create sweeping changes for the healthcare system that may speed the transition from fee-for-service payment to a new system that incentivizes improved quality and decreased healthcare spending over the next decade.

The American Association of Nurse Anesthetists (AANA) created a task force in 2005 to review the implications of the trend toward doctoral entry to practice for the nurse anesthesia specialty. After extensive analysis by the Task Force on Doctoral Preparation of Nurse Anesthetists, the AANA announced support for doctoral education for entry to nurse anesthesia practice, and the Council on Accreditation of Nurse Anesthesia Educational Programs (COA) has disseminated a draft of new standards requiring doctoral education (Table 1).

In this context and following the arrival of a new dean, CUSON faculty members engaged in a process of strategic planning to ensure that all educational programs continue to be of the highest quality and remain relevant in the dynamic healthcare sector. The aim of this document is to describe the CUSON curriculum strategic planning work-group activities and outcomes, and the implications for our graduate nurse anesthesia program (NAP). We are hopeful that our work may be useful to other schools of nursing and NAPs engaged in curricular evolution in response to the movement to advance the profession through education.

Background

Columbia University School of Nursing was founded in 1892. Since that time, the school’s mission has been to prepare clinical and research scholars. The school is a recognized leader for its innovation in clinical nursing education.

<table>
<thead>
<tr>
<th>Year</th>
<th>Initiative</th>
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<tbody>
<tr>
<td>2004</td>
<td>AACN endorses DNP entry into advanced practice by 2015</td>
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<tr>
<td>2006</td>
<td>AACN Doctoral Essentials drafted</td>
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<tr>
<td>2007</td>
<td>AANA supports doctoral entry to practice by 2025</td>
</tr>
<tr>
<td>2008</td>
<td>NCSBN Consensus Model for APRN Regulation</td>
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<tr>
<td>2009</td>
<td>“Educating Nurses: A Call for Radical Transformation” published</td>
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<tr>
<td>2010</td>
<td>The Future of Nursing: Leading Change, Advancing Health released</td>
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<tr>
<td>2010</td>
<td>Patient Protection and Affordable Care Act</td>
</tr>
<tr>
<td>2011</td>
<td>COA releases new standards for practice-oriented doctoral degrees for NAPs</td>
</tr>
<tr>
<td>2012</td>
<td>Draft Standards for Doctoral Nurse Anesthesia Programs released</td>
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Table 1. Recent Initiatives Affecting Nursing

Abbreviations: AACN, American Association of Colleges of Nursing; AANA, American Association of Nurse Anesthetists; APRN, advanced practice registered nurse; COA, Council on Accreditation of Nurse Anesthesia Educational Programs; DNP, Doctor of Nursing Practice; NAP, nurse anesthesia program; NCSBN, National Council of State Boards of Nursing.
practice, and research and led the contemporary movement toward the nursing practice doctorate.1,2

In the mid-1980s, CUSON instituted a universal faculty practice program. All full-time faculty members taught, but depending on their credentials, they also conducted externally funded research or engaged in clinical practice at the highest level of their preparation. Funding for research and/or clinical practice was factored into the academic salary. In the clinical faculty practice model, patient care responsibilities beyond traditional advanced practice specialty roles were assumed. These responsibilities included admitting privileges and comprehensive, collaborative practice in an academic medical center. Based on the clinical faculty practice model and data derived from it, competencies additional to role-specific advanced specialty practice were identified and, over time, refined. The additional competencies included management of patients across clinical sites and over time, more specific identification and evaluation of emergent situations, clinical practice management, leadership, management of care transitions, and others. Out of the faculty practice model, collected evidence, and additional identified competencies, the faculty developed a clinical nursing doctorate—the DNP—where clinical practice was defined as comprehensive, direct patient care across the lifespan and throughout the healthcare continuum. Comprehensive care is defined by the American Association of Family Practitioners as “the concurrent prevention and management of multiple physical and emotional health problems of a patient over a period of time in relationship to family, life events and environment.” Comprehensive care has not been defined explicitly in the context of nursing practice and education. However, it is referred to as a specialty for expert clinicians capable of broad-scope, patient-focused care that is not setting-limited.21

Current academic programs at CUSON include the combined bachelor of science/master of science (BS/MS) program, the traditional postbaccalaureate MS program, the postmaster’s DNP program, and the doctor of philosophy (PhD) program (Figure 1). The combined BS/MS program offers seamless progression from professional nursing education into one of the master’s specialization programs, including the NAP. Students enter the BS/MS program with at least a baccalaureate degree in another subject area and required prerequisite courses. Those BS/MS students accepted into the NAP must take a 1- to 2-year leave of absence to complete the requisite critical care experience before matriculating into anesthesia specialization. Baccalaureate-prepared registered nurses enter the traditional MS program for specialization as advanced practice nurses. Graduates of the nurse anesthesia specialty program, both BS/MS and MS, are eligible for certification by the National Board of Certification and Recertification of Nurse Anesthetists.

The DNP program is structured to build on role-specific advanced practice registered nurse education to produce clinical practice experts capable of providing comprehensive care. Graduates of the program are eligible for certification by the American Board of Comprehensive Care (ABCC) and recognition as Diplomates of Comprehensive Care. Students enter the PhD program as postbaccalaureate, postmaster’s, or postdoctoral degree students and are educated to create new knowledge to support the discipline of nursing and the healthcare sector. The PhD degree is awarded by the Graduate School of Arts and Sciences and administered by CUSON faculty (see Figure 1).

### Strategic Planning

- **Workgroup Development and Charge.** In 2010, a schoolwide strategic planning initiative began in CUSON. Based on interactions with faculty, staff and students, the dean introduced 7 strategic planning workgroups, including the curricular strategic planning workgroup. The workgroup for curriculum was formed by interested volunteer faculty members representing diverse backgrounds.

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**Figure 1. Existing Curriculum at Columbia University School of Nursing**

a One year of professional nursing experience in critical care is required to matriculate into nurse anesthesia specialty coursework. External applicants are considered.
perspectives and was cochaired by the CUSON associate dean for student affairs and the assistant director of the NAP. The workgroup was charged with surveying healthcare and educational landscapes as they relate to nursing education and to making bold curricular recommendations across all academic programs.

• Workgroup Deliberations.
Considerable discussion ensued around the exact nature and impact of national trends and recommendations. Concern was expressed about a new program that would preserve or increase student diversity without excessive financial burden. Consensus was reached—in accord with the AACN endorsement for doctoral entry to advanced practice nursing—that CUSON raise its advanced practice curricula to the doctoral level. The combined BS/MS program, which CUSON pioneered in 1988, has remained a popular pathway to advanced practice. Faculty members believed that this program could be further refined and could accommodate seamless transition into doctoral study—either the DNP or the PhD—or professional practice. The inclusion of the PhD in this manner generated debate, but faculty agreed that the initiative would allow highly qualified students into PhD study earlier in their careers so that they might become productive researchers with longer career trajectories comparable to PhDs in other disciplines.

• Workgroup Recommendations.
After 5 months of exploration, deliberation, and discussion among workgroup members and other faculty members in the school, consensus was reached on the following 2 recommendations:

1. Eliminate the current combined BS/MS degree program and offer the MS for entry to professional nursing practice. Allow for seamless progression into either a clinical or a research doctoral program (MS/DNP or MS/PhD).

2. Eliminate the current, traditional MS degree program and advance to the DNP degree for entry to advanced nursing practice in comprehensive care and one of the traditional specialty tracks. On completion of the DNP, graduates will function effectively in complex and dynamic healthcare environments. In particular, they will be uniquely prepared to collaborate across disciplines to manage health and illness, reduce fragmented care and health disparities across populations, ensure smooth care transitions, contain costs, and determine appropriate treatment settings for optimal patient care (Figure 2).

Figure 2. Proposed Curriculum at Columbia University School of Nursing

• Must be a professional registered nurse to matriculate. One year of professional nursing experience in critical care is required to matriculate into nurse anesthesia specialty coursework. External applicants are considered.

On completion of the new MS curriculum, graduates would be eligible to complete the National Council Licensure Examination and may enter practice or continue into a doctoral program. On completion of the DNP, graduates would be eligible for both specialty certification and certification by the ABCC. Those completing the PhD would be prepared to conduct research and generate new knowledge.

2. Eliminate the current, traditional MS degree program and advance to the DNP degree for entry to advanced nursing practice in comprehensive care and one of the traditional specialty tracks. On completion of the DNP, graduates will be eligible for both specialty certification and certification by the ABCC.

The clinical doctorate will focus on clinical practice scholarship. The curriculum will be restructured such that Master’s Essentials and Doctoral Essentials—in addition to comprehensive care—provide the foundation for specialization. In this new curricular structure, students will learn advanced theories and techniques as well as broad diagnostic and management skills before specialty education. Clinical experiences outside the traditional specialty residency structure may include acute and chronic pain management, preanesthesia testing, postanesthesia care transitions, intensive care, ambulatory chronic disease management, and primary care. Cardiology, radiology, and pulmonary testing experiences may offer opportunities to hone the skills of interpretation and diagnosis—a clinical application of classroom theory—across settings. Specialty education and its evaluation will, in turn, require students to apply more sophisticated knowledge and diagnostic skill in both clinical performance and scholarly projects.

In all specializations, DNP graduates will function effectively in complex and dynamic healthcare environments. In particular, they will be uniquely prepared to collaborate across disciplines to manage health and illness, reduce fragmented care and health disparities across populations, ensure smooth care transitions, contain costs, and determine appropriate treatment settings for optimal patient care (Figure 2).

Context for the Nurse Anesthesia Program
During the strategic planning process, the CUSON NAP faculty members explored quality indicators for nurse anesthesia education and practice; educational attainment of nurse anesthetists over time; and potential changes in health-
care delivery and reimbursement. We also reassessed our general philosophy about the level of performance expected for graduates of professional programs in the health sciences.

- **Quality Indicators for Nurse Anesthesia Education.** Quality indicators for NAPs, as reported by the COA, include student and faculty surveys, onsite reviews, student achievement indicators, enrollment/attrition rates, and surveys of graduates and their employers. In a presentation during the February 2012 Assembly of School Faculty, COA representatives reported the following data from 2011: 85% of NAPs met the preferred benchmark for National Certification Examination pass rates; 15% of NAPs met only the mandatory benchmark for Certification Examination pass rates; there was a 2.5% average student attrition rate nationally; and 92.4% of programs reported that 100% of graduates were employed (Table 2).22

Additionally, the COA revealed that 98% of graduate respondents were prepared for practice on NAP completion and 97% percent of employer respondents agreed (Table 2). Areas of interest for both graduates and employers were the same: chronic pain management, peripheral nerve blocks, insertion of central lines, and insertion of pulmonary artery catheters.22

- **Nurse Anesthesia Practice Outcomes and Educational Attainment.** Results of research comparing nurse anesthetists and anesthesiologists support the safety and cost-effectiveness of nurse anesthesia practice.23-29 However, when outcomes research is evaluated alongside data on nurse anesthetists’ highest degree earned, nurse anesthetists’ outcomes have not surpassed those of anesthesiologists as advancements in nurse anesthesia education have been mandated. As recently as 2002, greater than 50% of surveyed nurse anesthetists were educated at the diploma, certificate, or baccalaureate level.30 It seems that anesthesiologists were compared primarily with Certified Registered Nurse Anesthetists (CRNAs) educated at the diploma/certificate or baccalaureate level in much of the outcomes data collected before 2002. However, further research is necessary to validate this assertion (Table 3).

- **Trends in Healthcare Delivery and Reimbursement.** The fee-for-service reimbursement system is viewed as an impediment to containing healthcare costs in the United States.31 A bundled payment model for reimbursement, changes in delivery models, and an emphasis on prevention are proposed reforms that can increase the healthcare value.8 Indeed, a bundled payment initiative is mandated by the Affordable Care Act.7 In this payment paradigm, providers and departments must compete with one another for their share of the bundled payment. Now, more than ever, nurse anesthetists need to be able to demonstrate and communicate their value to the healthcare system in terms of quality, cost, and access.

- **Expectations for Graduate Performance.** The primary objective of the current CUSON NAP is to prepare novice, generalist professional nurse anesthetists with entry-level skills and expertise for safe, cost-effective perianesthetic care and related patient management. After review in the context of doctoral entry to advanced practice, this objective remains unchanged. We believe that formalized education—across professional disciplines and areas of specialization—serves as a foundation for lifelong learning and self-directed professional growth. With this in mind, and given the data and assertions described earlier, we asked the following questions: What clinical knowledge and skills, in

### Table 2. 2011 Quality Indicators for Nurse Anesthesia Educational Programs

<table>
<thead>
<tr>
<th>Quality indicator</th>
<th>Percent of survey respondents</th>
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<tbody>
<tr>
<td>Nurse anesthesia programs</td>
<td></td>
</tr>
<tr>
<td>Meet preferred benchmark for NCE passing rate</td>
<td>85.0</td>
</tr>
<tr>
<td>Meet mandatory benchmark for NCE passing rate</td>
<td>15.0</td>
</tr>
<tr>
<td>Average national attrition rate</td>
<td>2.5</td>
</tr>
<tr>
<td>Report 100% employment of graduates</td>
<td>92.4</td>
</tr>
<tr>
<td>Graduates</td>
<td></td>
</tr>
<tr>
<td>Prepared for practice on program completion</td>
<td>98.0</td>
</tr>
<tr>
<td>Employers</td>
<td></td>
</tr>
<tr>
<td>Graduates prepared for practice on program completion</td>
<td>97.0</td>
</tr>
</tbody>
</table>

Abbreviation: NCE, National Certification Examination.

### Table 3. Educational Attainment for Certified Registered Nurse Anesthetists

<table>
<thead>
<tr>
<th>Highest degree earned</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma/certificate</td>
<td>25.4</td>
<td>21.9</td>
<td>21.0</td>
<td>19.4</td>
<td>11.0</td>
</tr>
<tr>
<td>Baccalaureate</td>
<td>29.8</td>
<td>27.3</td>
<td>25.9</td>
<td>24.8</td>
<td>17.8</td>
</tr>
<tr>
<td>Master’s</td>
<td>43.7</td>
<td>49.6</td>
<td>51.9</td>
<td>54.6</td>
<td>68.5</td>
</tr>
<tr>
<td>Doctorate</td>
<td>1.1</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>2.7</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
addition to Doctoral Essentials I to VII\(^3\) and current specialty content, will be most valuable to graduates of the nurse anesthesia DNP program? Will patients and the healthcare system be better served by more highly specialized providers of anesthesia or by anesthesia professionals with a broader scope of knowledge and skills?

- **Narrow-scope Anesthesia Education.** From our perspective, further refinement of specialty knowledge and skill or subspecialization in anesthesia education goes beyond our objective to produce generalist professional nurse anesthetists and is not warranted given the anesthesia quality data available. Additionally, faculty members believe graduates will not be prepared by a narrower learning focus for evolving roles in a rapidly changing and complex system. Graduates seeking refinement and/or subspecialization should pursue postgraduate programs, continuing education, and/or ad hoc learning, as appropriate, to meet their professional development needs and interests.

- **Broad-scope Anesthesia Education.** The broadened clinical knowledge base and expanded clinical skills and experiences provided in the proposed CUSON DNP program for advanced practice are more consistent with the NAP objective to produce generalist anesthetists and, likely, more valuable to practice settings. For example, formalized education and experience in managing patients across settings and over time will result in greater confidence in graduates when assessing risk, determining degree of optimization, managing complications, and determining the appropriate level of care peripheratively. Graduates will be better prepared to consult, collaborate with, and lead interdisciplinary teams for improved patient outcomes. Furthermore, it is our belief that DNP graduates with expertise in anesthesia and comprehensive care will be uniquely prepared to assume broader, more flexible roles and to provide greater value for patients and the healthcare system as a whole.

**Conclusion**

The trend toward doctoral education for entry to nurse anesthesia practice provides an opportunity for educators and clinicians to evaluate what we do well in terms of producing qualified nurse anesthetists, identify areas where we can improve, and assess changes under way in the healthcare sector. In doing so, we can determine how best to educate the nurse anesthetists of tomorrow. Faculty members at CUSON contend that a broader scope of knowledge and skill will best serve our graduates, the healthcare system, and—most importantly—our patients. The products of this clinical doctorate for anesthesia and comprehensive care will have an expanded fund of knowledge and skill for broad-scope practice and a firm foundation on which to build postgraduate subspecialization.

**REFERENCES**


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