Chapter I

The Report of the National Commission on Nurse Anesthesia Education

Executive Summary

During the past 10 years, significant changes in the demand for health care professionals and calls for improvements in the health care delivery system have focused attention on problems in educational programs, manpower, access, costs and quality of care. The problems associated with any of these factors may produce a chain reaction that affects all of them. Such a situation exists today in relation to a serious shortage of nurse anesthetists.

The development of the nurse anesthesia specialty preceded that of medical anesthesiology in the United States. Because of the high mortality rates from anesthesia being reported in the latter third of the 19th century, many surgeons turned to nurses as the providers best suited and available to "specialize" in the field and devote their entire practice to the specialty. Nurse anesthetists have been highly successful in providing anesthesia services in the United States for over 100 years.

Today's certified registered nurse anesthetists (CRNAs) work as hospital employees, physicians' employees or as independent contractors. They are employed in 70% of those hospitals that have a surgical capability and in 95% of rural hospitals. CRNAs also provide anesthesia services in physicians' and dentists' offices and in ambulatory surgical centers.

In rural hospitals, CRNAs are often the only anesthesia providers, and reports indicate this probably will not change. Approximately 50% of the anesthesiology performed in this country are administered by CRNAs working with anesthesiologists. CRNAs working alone with surgeons or other physicians administer 20% of the anesthetics; anesthesiologists working alone or with other physicians administer the other 30%.

In 1982, 1,107 nurse anesthetists completed programs of study qualifying them to take the certification examination in this nursing specialty; by 1987, this number was down to 607. The 400-500 annual decline in graduates from nurse anesthesia educational programs, which started in 1983, has significantly contributed to the nurse anesthesia shortage and has resulted from the closure and reduction in size of many of these programs.

Forty-two percent of nurse anesthesia educational programs that existed in 1983 have closed. A variety of causes have been cited for these closures, principally the substitution of anesthesiology medical residency spaces for nurse anesthesia student spaces and the growing concerns about hospital financial stability as it relates to the conduct and fiscal support of educational programs in a cost-containment environment.

Today, there are 22,000 CRNAs and 19,000 anesthesiologists in the United States. Over the past 10 years, during the period when the serious nurse anesthetist shortage was developing, the number of anesthesiologists has grown significantly. Part of this increase has resulted from the large number of graduates now being produced by medical schools who are looking for specialty training. Orkin cites the broad media dissemination of the Graduate Medical Education National Advisory Committee (GMENAC) study in 1980, which reported this specialty as having a shortage, and the increased awareness by medical students of the "very respectable income" of anesthesiologists as factors that attracted many of the additional residents to the profession.

The cost of CRNA shortages

Severe shortages of CRNAs can affect the health care delivery system in a variety of ways. First, it may decrease accessibility to health care services, particularly for those clients in rural areas requiring anesthesia. Shortages of CRNAs in rural areas where CRNAs are the only providers are already being noted by hospital administrators there.

Secondly, this shortage is already increasing the cost of anesthesia services. Following the economic principle of supply and demand, CRNA salaries have significantly increased since the shortage has become apparent. Furthermore, to the extent that physicians are substituted for CRNAs, costs for anesthesia...
services will increase. The U.S. Department of Health and Human Services (HHS) has noted that "the use of more anesthesiologists is a costly solution to the shortage of anesthesiologists." It concluded that increased use of nurse anesthetists to deliver anesthesia could save the nation $1 billion annually between now and the year 2010. The HHS report underscores the need for cost-effective services in a time of increasing surgical procedures. The average anesthesiologist's yearly earnings were reported by the American Medical Association to be $194,500 in 1988, while the American Association of Nurse Anesthetists (AANA) reported that CRNAs' average earnings were $58,300 for the same year.

Another cost factor that must be added to the equation for assessing the true costs of the shortage of CRNAs to this nation relates to the differential in the cost of preparing anesthesiologists and CRNAs. The educational costs of preparing CRNAs are less than those of preparing anesthesiologists. Becoming an anesthesiologist requires four years of undergraduate education, four years of medical school and a 4-year residency in anesthesia, which includes a 1-year rotation in a variety of medical services.

Becoming a CRNA requires as a minimum of four years of undergraduate education, which includes preparation as a professional nurse, one to two years of experience in an acute care (often critical care) nursing unit and two years of anesthesia education. Thus, anesthesiologists have a minimum of 12 years of post-secondary education, while CRNAs have a minimum of 7-8 years. Furthermore, medical school education has been more costly and better supported by government funding than nursing education.

The third factor in assessing shortages of health personnel, and in this instance CRNAs, is the effect of such shortages on the quality of care. Outcome studies of anesthesia care over the past two decades have demonstrated that both groups (CRNAs and anesthesiologists) provide the same quality of care. 

Cromwell and Rosenbach, in a recent study performed at the request of Congress and supported by the Health Care Financing Administration (HCFA), found that CRNAs, when working with anesthesiologists, were as likely to be involved in the same complexity of anesthesia procedures as anesthesiologists. CRNAs working alone were found to be involved in fewer complex procedures but, according to the author's explanation, this might be because the smaller hospitals in which CRNAs work alone may not have the surgical or support capability for these types of cases, or they might require two anesthetists when only one is available.

Lack of adequate vigilance has been found to be the most frequently cited cause of anesthesia mishaps. Yet several factors loom as potential risks as they relate to quality concerns for anesthesia care in the face of the growing CRNA shortage. One such factor is that CRNAs are working longer hours and often work on their scheduled days off to handle the anesthesia workload. Cooper has cited fatigue and the scheduling of work/rest cycles as important issues in anesthesia mishaps and quality of care. Recently defined standards for the use of new, non-invasive monitoring techniques have been associated with a decrease in anesthesia mishaps.

Another factor of great concern regarding quality of care is the growing substitution, resulting from the CRNA shortage, of inadequately prepared health personnel to administer and/or monitor intravenous conscious sedation to patients having surgical or diagnostic procedures under local, regional or no anesthesia. Since these patients are subject to cardiorespiratory depression or arrest from drug overdose and to anaphylactic or other types of drug sensitivity reactions, they need a health care provider who is as fully prepared in monitoring and resuscitative techniques as are anesthesia providers.

In summary, the CRNA shortage will significantly increase the cost of anesthesia care to this nation. Furthermore, it has great potential to adversely affect the quality of anesthesia and anesthesia-related services to health clients.

Causes of nurse anesthesia educational program closures

While the principal causes for closure or reduction in size of nurse anesthesia educational programs have been cited, a more complete understanding of these problems is needed as a basis for comprehending the Commission's recommendations. According to a study by DePaolis-Lutzo, the closures or reductions in size have three basic causes: financial, philosophical and political. It would also appear from anecdotal sources that the decisions for closure were generally made by hospital administration or the anesthesiology department chair or by the two jointly.

Programs closed by hospital administrators largely resulted from concerns about hospital financing and the cost of nurse anesthesia education, which these hospitals had supported to a significant degree.

Hospitals became eligible for some federal funding for nurse anesthesia programs through the Medicare Graduate Medical Education (GME) pass-through in the late 1960s or early 1970s. Such funding was based then, as it is today, on the cost of the educational program to the hospital, prorated for the percentage of Medicare patient population served. With the enactment of the Prospective Payment System (PPS) in 1983 and political discussions related to a possible reduction or elimination of the Medicare GME pass-through, many hospital administrators became concerned about their hospital's future financial stability. (Between 1984-1989, the only other federal educational funding available to nurse anesthesia programs had been some student traineeship funds from the Nurse Anesthetist Traineeship Program and grants from the Division of Nursing, HHS, Nurse Traineeship Program for program development and/or expansion. This grant funding is restricted to programs within schools or colleges of nursing. Nurse traineeship funding has been significantly reduced in recent years. Some minimal funding for faculty development was added to the Nurse Anesthetist Traineeship Program in 1990. Thus, while some federal funding became available for nurse anesthesia education in the 1980s, nurse anesthesia educational programs have been caught
in the cost-constraining environment of health care funding for the same period, resulting in closure of programs.

Anesthesiologists generally control access to clinical anesthesia resources in hospitals that are of significant bed size to support anesthesia educational programs. They have significant influence in determining the extent to which these facilities will be utilized and for what types of education. An understanding of the philosophical, political and financial reasons cited for program closures is essential to any resolution of this problem.

The philosophical basis for closing or reducing the educational capability of nurse anesthesia educational programs is often related to the belief among some anesthesiologists that anesthesia should be solely a medical specialty and a field into which nurses should not be admitted. To support that philosophy would require that anesthesiologists be substituted for all CRNAs or other anesthesia providers. This has been a goal long stated by the American Society of Anesthesiologists (ASA).

As in any organization, this philosophy is espoused by some anesthesiologists, while others believe strongly that there are roles for both physicians and nurses in the provision of anesthesia care. Thus, a major cause of nurse anesthesia educational program closures or a reduction in their size has been the substitution of anesthesiology residency spaces for nurse anesthesia student spaces. In large measure this has occurred in major academic health centers where nurse anesthesia educational programs have been conducted for some 50–60 years.

Since 1989, the philosophical basis for closure of programs has been compounded by some financial concerns about the unequal treatment of anesthesia resident services and nurse anesthesia student services with regard to reimbursement by the Medicare program. After legislation was enacted into law in 1986 to permit CRNAs to obtain direct reimbursement for their services under Part B Medicare, in 1989 HCFA promulgated a fee schedule for CRNAs that did not comply with statutory requirements and inadvertently failed to address (within their interim final regulations) payment for services performed by supervised nurse anesthesia students. As a result, to receive a payment for the nurse anesthesia student service requires a supervisory ratio of 1:1, while anesthesiologists continue to be permitted to supervise two anesthesia medical residents simultaneously and collect for both services.

Personnel at HCFA recently informed the AANA that the nurse anesthesia student problem will be corrected in the final version of the published regulations, thereby affording them treatment equal to that of anesthesiaology residents. Unfortunately, the final regulations are about 18 months (or more) overdue. Consequently, for this period of time there has been a definite financial incentive for hospitals and anesthesiology departments to educate anesthesiaology medical residents rather than nurse anesthesia students. This situation, if it continues, will result in greater costs for anesthesia care in the future.

The political reasons for closure of selected programs are related to some anesthesiologists’ concerns over the ability of CRNAs to become direct competitors. This concern has resulted from AANA and its related state associations seeking and acquiring direct reimbursement from Medicare and other select third-party payers. Two court decisions have played a significant role in this matter. A federal district court ruling in 1986 awarded CRNAs the right to sue anesthesiologists for alleged anticompetitive practices under certain conditions. [Bahn v. NME Hospitals, Inc., 84-2256, D.C. No. CV-S-83-295 LKK (Oct., 1985) or 772 F. 2d 1467 (9 CCA 1985)] Another decision that same year in favor of a nurse anesthetist in an antitrust case tried in the federal court in Montana confirmed the potential for CRNAs and anesthesiologists to compete for market share in some situations. [Oltz v. St. Peter's Community Hospital (CV 81-271-H-RES, Montana District Ct., Nov., 1986) and affirmed by the US Court of Appeals, 9th Circuit.]

With the continued increase in the number of therapeutic and diagnostic procedures necessitating anesthesia, there is a growing need for anesthesia providers. Factors which contribute to this need are a consequence of the decentralization of surgical settings (e.g., ambulatory surgicenters, pain clinics, lithotripsy and ophthalmology clinics, etc.), the aging of the population, the increasing number of physician assistants and the scientific and technological advances that have made an increasing number of health care clients candidates for surgical correction of pathology that often requires the services of two or more anesthesia providers. Thus, the larger number of anesthesiologists being prepared, even if it is desirable, has not made up for the loss of nurse anesthetist graduates or the increased need for their services.

The magnitude of the nurse anesthetist shortage was recently documented by a Congressionally mandated study. Through the support of HHS, a study was conducted in 1989–1990 to develop projections of the supply of and need for CRNAs and to assess the educational objectives for nurse anesthesia educational programs.

The HHS study reports a shortage of 6,000 CRNAs for 1990, or a 13.6% shortfall. This is somewhat greater than the 10% shortage reported by the American Hospital Association (AHA) in 1989. It further reports the need for 30,000 CRNAs by the year 2000 and over 35,000 by the year 2010. To meet that need, the educational system for nurse anesthetists would have to have a capability of graduating 1,800 students yearly between now and the year 2000 and 1,500 a year thereafter. This study took into consideration the increase in the number of anesthesiologists.

Since 1983 there has been a concerted effort on the part of the AANA, some of the state associations and individual nurse anesthetists to halt the closure of nurse anesthesia educational programs. Efforts have been expended to start new programs, acquire additional clinical sites and/or otherwise expand the educational spaces in existing programs. During this period approximately three new programs have been started, with two more opening this fall. In the past year, there is evidence that these efforts are beginning to pay off in a small increase in program graduates. This increase in enrollment appears to be related to hospitals’ need to fill vacant CRNA positions by preparing more nurse anesthetists. This small cause for optimism must be tempered by recent concerns expressed by five programs...
that face financial difficulty in continuing their nurse anesthesia programs.

Appointment of Commission

After exploring a variety of avenues to increase the educational capability for preparing nurse anesthetists and observing the shortage grow more acute almost daily, AANA leaders and officials recognized a need for assistance in studying this program and seeking viable solutions. The 1989-1990 incoming AANA president, Richard G. Ouellette, CRNA, MEd, appointed a multidisciplinary group, the National Commission on Nurse Anesthesia Education (NCNAE) to independently study the educational problem and to make recommendations to the AANA Board of Directors as to the goals and strategies the profession should utilize to resolve this growing human resource problem.

Purpose

The Commission had a twofold purpose: (1) to study the causes of the CRNA manpower shortage as they relate to the decline in the number of nurse anesthesia educational programs and graduates and make recommendations for alleviating this problem and (2) make recommendations for recruiting and assisting CRNAs interested in becoming qualified program faculty to alleviate the shortage of master's and doctorally prepared academic and clinical CRNA faculty.

The Commission was to consider a wide range of strategies, including but not limited to opening new programs; expanding existing programs; encouraging the development of cooperative educational ventures between universities and multiple clinical sites and facilitating the preparation, retention and recruitment of qualified CRNA faculty.

Commission members

The members of the Commission, while not representative of any particular organization or agency, were representative of nurse anesthesia, medical anesthesiology, hospital and health systems administration, rural health facilities, college and university administration (nursing and biological sciences). The Commission's members included a health policy consultant and economist.

The names of Commission members and their affiliations preceded the report.

Operational process

The Commission was primarily responsible for organizing the project, studying background materials and identifying, collecting and analyzing data required to supplement the background information. It was charged with analyzing issues and trends affecting nurse anesthesia education and developing recommended goals and strategies to increase the number of program graduates and qualified CRNA faculty members.

The Commission also estimated budgetary requirements for the implementation of its recommendations and prepared a final report (which included suggestions for implementing and evaluating a project based on these recommendations) for the AANA Board of Directors.

A schematic depiction of meetings of the Commission and the hearings conducted is pictured in Figure 1.

The Commission was divided into two task forces to...
facilitate the accomplishment of its purposes: (1) to make recommendations pertaining to the expansion of the educational capability for preparing nurse anesthetists and (2) to make recommendations for facilitating the preparation, recruitment and retention of additional qualified academic and clinical CRNA faculty. While each task force had its own assignment, the entire Commission discussed and adopted the final recommended goals and strategies.

Recommendations
After much study and refinement, the Commission members concluded that the shortage of nurse anesthetists is of crisis proportions and that this is related specifically to a significantly reduced educational capability for preparing the number of CRNAs needed now and in the future. The Commission members also believe that the health care cost savings that can be projected through increased utilization of CRNAs are not only in the public interest but are consistent with desired national goals for health care in the future.

In addition, the Commission members believe it is essential that AANA place the resolution of its educational problems among its highest priorities. The Commission's recommended strategies for resolving these problems are aimed at achieving the following goals:

1. Increase the number of annual graduates from nurse anesthesia educational programs by expansion of existing programs and development of new programs.
2. Make nurse anesthesia education a more attractive career option and establish a recruiting and placement service for CRNA faculty.
3. Secure more equitable treatment of CRNAs, nurse anesthesia students and graduates in all reimbursement guidelines and policies.
4. Develop program directors and faculty to provide effective leadership.
5. Promote interprofessional collaboration between CRNAs and anesthesiologists to enhance anesthesia education.
7. Enhance CRNA/student registered nurse anesthetist awareness and understanding of professional issues as they relate to education, practice and research.
8. Develop funding and staffing mechanisms to accomplish the Commission's recommendations.

Many suggested strategies for achieving these goals are included in the full report.

Summary statement
The Commission believes it is essential that the AANA immediately begin to acquire the manpower and material resources needed to implement those strategies essential to the achievement of these goals. While AANA must take the leadership in this endeavor, it is essential that it make use of a broad base of consultants and experts from outside the association to assist in marketing nurse anesthesia and educational programs to universities and hospitals. Furthermore, it must find a means for making educational administration and teaching both within the academic and clinical components of these programs attractive to CRNAs who have a high potential for excellence within this field.

While AANA must be willing to underwrite much of the cost of this project, it should consider acquiring additional financial support from a variety of sources (foundations, industry, business health coalitions, unions, etc.) to help individual programs, their faculty and/or students.

The Commission members believe that CRNAs have been critical to meeting the anesthesia needs of this nation for the past 100 years. They will be even more critical to the health care system in the future. CRNAs represent the best opportunity the nation has to deliver needed, high quality, cost-effective anesthesia services to patients. As in the past, CRNAs will continue to be essential to assuring the accessibility of anesthesia services to all segments of society. It is the consensus of the Commission that all-physician anesthesia is neither warranted nor affordable. Therefore, efforts should be made to prepare an appropriate mix of the two providers to best serve the interests of the public and the nation.

REFERENCES