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Several weeks ago, I spoke with a group of colleagues about my concerns as an educator, clinician, and administrator at a school of nursing. I described the difficulty of reconciling the roles of practice administrator with those of clinician-educator. There is a natural flow between the roles of clinician and educator and my clinical practice helps shape my perspective as an educator. Students’ discussions are reviewed as they critically appraise clinical guidelines and level the evidence from research studies for application to direct patient care and site-specific practice initiatives. However, as an administrator with fiscal responsibility for a primary care practice, I am challenged by the inconsistencies between the recommendations of expert clinical practice guidelines and the rules/requirements used to make decisions about reimbursement for services provided. This is especially true with regard to preventive services.

The primary care practice for which I have administrative responsibility uses the U.S. Preventive Services Task Force Guidelines as the basis for screening and counseling asymptomatic adults (Agency for Healthcare Research and Quality, 2012). Not all commercial insurers with whom the clinicians participate have specific plans that reimburse for preventive services. As a practice, we are challenged to find the best way to address the needs of the individual and document care provided while being fiscally responsible to the patient and the practice.

Providing preventive immunizations presents a challenge, especially among persons with Medicare and some Medicare advantage plans. Medicare Part B covers the seasonal influenza and pneumococcal pneumonia vaccinations, and Hepatitis B vaccination only for those at medium or high risk (Centers for Medicare & Medicaid Services, 2013). All other vaccines are covered under Medicare Part D prescription drug plans (Center for Medicare & Medicaid Services, n.d.). The clinicians in our practice follow a commonly used procedure. They counsel patients about the indications, risks, and benefits of a particular vaccine and provide information about cost and payment. The patient signs an advance beneficiary notice (ABN), which documents the discussion and the patient’s fiscal responsibility. After the appointment, the ABN is scanned into the electronic medical record and the bill is submitted. When the practice receives a payment denial from Medicare, the patient is sent an invoice. The patient is responsible for paying the practice the required amount and then submitting the invoice to his/her individual prescription drug plan for reimbursement. This series of actions is time-consuming and does not promote a consistent vision of the need or importance of this service.

Choosing to receive an immunization can be costly consideration for an older person with limited resources and multiple comorbid illnesses. Consider ZOSTAVAX®, which is recommended to reduce the risk of herpes zoster among persons 60 years of age or older (Department of Health and Human Services: Centers for Disease Control and Prevention, 2013; Harpaz, Ortega-Sanchez, & Seward, 2008). A double-blind randomized, placebo-controlled trial involving 38,546 healthy adults older than age 60 years, demonstrated that the vaccine was partially efficacious at (a) preventing zoster, (b) reducing disease severity and duration of pain, and (c) preventing postherpetic neuralgia (PHN) among those with zoster (Oxman et al., 2005). The effect of herpes zoster on quality of life is well-documented as are the potential complications. PHN can last months to years. Eye involvement, which occurs in 10%-25% of zoster episodes, can result in prolonged or permanent pain, facial scarring, and loss of vision (Ragozzino, Melton, Kurland, Chu, & Perry, 1982; Scott et al., 2003). During an acute episode of zoster, the skin lesions contain high concentrations of varicella zoster virus that may cause primary varicella in exposed, susceptible persons (Harpaz et al., 2008).
There are approximately 1 million new cases of zoster annually in the United States. Age is the most important risk factor for developing zoster and there is a significant occurrence of increase beginning at 50–60 years of age. Among persons who live to age 85 years, approximately 50% will have experienced zoster (Brisson et al., 2001; Schmader, 2001). Each case of zoster is estimated to result in 1.3–3.1 outpatient visits and prescriptions for 1–5 medications (Harpaz et al., 2008). Approximately 1%–4% of zoster episodes require hospitalization, with a mean length of stay of 4.8 days. The average cost of outpatient care per episode ranges from $112 to $287. The cost of antiviral medication ranges from $73 to $180 per treatment. Studies have estimated the cost-effectiveness of a one-dose routine vaccination program. At a vaccine cost of $150 per dose, the societal costs of routinely vaccinating immunocompetent persons aged 60 years and older ranges from $27,000 to $112,000 per quality-adjusted life-year gained.

In my roles as an administrator and as an advanced practice nurse, I have contacted Medicare representatives and discussed various alternatives that will promote cost-effective, efficient immunization practices. At this time, there have been no appropriate or cost-effective solutions.

The colleagues with whom I had been discussing these issues share the challenges of their own practice environments. All face similar difficulties negotiating and navigating the rules and regulations of a changing health care system. Our discussion reconfirmed the need to be proactive and to address the bigger questions during this period of health care reform, all the while continuing the daily work of providing cost-effective efficient patient-centered services.

With this in mind, I am pleased to introduce a new section, “Restructuring Health Care.” It is the goal of this section to promote discussion and provide a forum to disseminate the viewpoints of readers and experts to promote participation and leadership in discussion of changes that are necessary to favorably impact the delivery of health care services.

Janice Smolowitz, DNP, EdD
Editor

References


Letters to the Editor

To the Editor:

I found “The Future of Nursing: Campaign for Action and Implementation of the Institute of Medicine’s Report: An interview with Dr. Susan Hassmiller” very interesting and refreshing. I feel the article is well balanced and addresses the attributes of both PhD and DNP prepared nurses. It helps define the areas of expertise for these two advanced degrees. The article also discusses how advanced practice nurses who hold these degrees can resolve health care issues to benefit society. DNP- and PhD-prepared nurses should be working together.

As a doctoral student, I recall the dean of the School of Nursing advocating for these partnerships, which need to occur. I am most familiar with PhD students demonstrating scholarship through the dissertation and DNP students developing capstone projects. I would be interested in knowing if any schools of nursing are pairing DNP and PhD students to work on scholarly projects as a basis for the development of these relationships. Have programs considered inviting students from other disciplines to participate? As a profession, we need to educate students, faculty, researchers, and clinicians about the power of partnerships if we are to implement the future of nursing campaign.

Dawn Bucher, DNP, FNP, DCC

Dear Editor,

The IOM’s 2010 recommendations have a huge impact on the APN and the DNP’s education and clinical practice. Dr. Hassmiller sees the DNP as the future of nursing, and that the role of the APN will expand with the addition of the DNP. However, there are some issues with the IOM recommendations and current practice that need to be addressed to allow the DNP to become the future of nursing.

Recommendation 1: Remove scope-of-practice barriers. Advanced practice registered nurses should be able to practice to the full extent of their education and training.

One of the most pressing issues facing the APN today is scope of practice barriers. Dr. Hassmiller says that the DNP will play an important role in becoming national leaders and serving on committees to help change these laws and regulations. With the variability in laws and policy at a state level for the APN, getting national recognition for this issue will be important.

Not all providers think expanding the use of advanced practice nurses is a good idea, and opposition has led to limits on how NPs and PAs can practice. State laws vary widely in what substances can be prescribed by these providers, whether they can practice independently, what procedures they are permitted to perform, and how many a physician may directly supervise. For example, NPs can’t prescribe controlled substances in Florida and Alabama, and some states require physician supervision of NPs, whereas in other states NPs can operate without physician involvement. (Frellick, 2011)

There is a difference from state to state with how the NP is able to practice. Part of the problem with the NP role development is that there are so many different types of APNs, that it is confusing what each titles means and what it represents. With all the different titles for the nurse practitioner, there was a push to have all advanced practice nurses be credentialed as APN (including CNS, CRNA, NP, ACNP, CNM, CNS/NP). However, with the huge variability between different specialties, one title cannot encompass every type of advanced practice nurse (Hamric, Spross, & Hanson, 2009). Titling is one issue that needs to be addressed; if the school, certifying boards,
Dear Editor,

After reviewing the Institute of Medicine’s (IOM) report on The Future of Nursing: Leading Change, Advancing Health released in 2010, my belief is that the report fully supports the need for and progression of nursing to the level of the DNP. Some of these recommendations suggest that nurses should practice to their full extent, achieve higher levels of education, and be full partners with physicians and other health professionals in redesigning health care in the United States (McNeal, 2012). For nurses to meet these goals, they must be better prepared through proper education and training that will facilitate this level of autonomy. The DNP provides this type of training.

Also, because there is a shortage of nursing faculty, why do we want to extend the education of nurses to have fewer faculties available? With substance, they argue that there is already such a large dichotomy in nursing knowledge and education, why further the fragmentation with a research and practice doctorate? For marginalization, they say that the DNP will not be adequately prepared for teaching or clinical jobs. A DNP without a PhD will not be recognized at most universities and that clinical areas will not support the replacement of a DNP with an MS prepared nurse (Meleis & Dracup, 2005). With any change, there is opposition, but the nursing profession needs to support further education of the APN and the DNP degree if it will be a successful part of the future of nursing.

The IOM 2010 recommendations provide the DNP with the opportunity to expand their practice and further their education. It will take strong nursing leadership to help advocate and implement the changes necessary to make the DNP an effective program and part of the future of nursing as Dr. Hassmiller foresees.

Sincerely,
Karen Morgan, ANP-BC

References


According to Hamrick, Spross, and Hanson (2009), the DNP prepares nurses for roles in leadership, research, policy change, and clinical collaboration.

The IOM identifies the role of nursing as a discipline that can utilize the skills, knowledge, and experience of nurses to create a transformed system of care (McNeal, 2012). The widespread dissemination of contents of the IOM report affords the discipline of nursing an unprecedented opportunity to demonstrate its ability to be a significant contributor to health care improvement (McNeal, 2012). Nurses often consider patient care their only focus. However, nurses must also learn to utilize other experiences and skills, from leadership to policy change, to ensure success. The DNP is the way to prepare nurses for such efforts and challenges. DNPs have the chance to exemplify how nursing leadership can positively impact costs and patient outcomes. With the educational preparation of the DNP in research evaluation, outcomes research can be performed to support the benefits of nursing care. This gives nursing, as a profession, support in demonstrating how much they have to offer the health care system and mankind. In exemplifying the multifaceted skills that nurses are capable of, they are helping to show their patients, other health care providers, and the American public the advancements that the profession has already made and potential future contributions of the profession. It is imperative that this momentum continues so that nurses can persist in defining the profession and not letting others define it for us. The DNP fuels this momentum by ensuring the future of nursing will have the educational support needed to excel in all aspects of health care.

Sincerely,

Agnicha Muzeau, APN-C, DNP candidate

References

In a recent issue of Clinical Scholars Review (Smolowitz, 2013), editor Jan Smolowitz interviewed Susan Hasmiller, the senior advisor for nursing at the Robert Wood Johnson Foundation about successes thus far in implementing the recommendations of the Institute of Medicine’s Report on the Future of Nursing: Leading Change, Advancing Health (REF). Dr. Hasmiller spoke at length about the leadership interface occurring in academic institutions among nurses prepared with research and practice doctorates. She noted, “I think the ideal will be PhDs working with DNPs. This means that nurses who are best at science and discovery will work, side by side with those who are best at translating research to practice” (Smolowitz, 2013, p. 71).

At Columbia University School of Nursing, we are applying this model for the first time to industry-sponsored research where the site PI is a nurse-scientist working in collaboration with a DNP and MD multidisciplinary team to comply with the rigorous mandates of the Food and Drug Administration for a randomized controlled clinical trial (Reame, McEneaney, Ruppe, & Rynzt, 2013). Taking advantage of the strong ties between women’s health research and nurse-practitioner faculty, our team has been able to achieve “buy-in” from important gatekeepers in the academic system: the Clinical Trials Office (contract and budget negotiations with the sponsor regarding indemnification, publication rights), the Clinical Research Resource of our medical center (investigative site), Research Pharmacy (for housing and dispensing a Class 3 drug), and the IRB. In this context, the 20-week, 5-visit protocol relies on the blend of clinical and research competencies of each nurse-expert at every phase of the study: recruitment, screening, enrollment and baseline assessments, data collection, adverse event monitoring, study completion, and unblinding. The contributions of each nurse-expert are critical to successfully achieving the goals of the study. In the interview, Dr. Hasmiller goes on to say, “DNP and PhD nurses are going to be crucial to the successful transformation of health care.” We should take advantage of the natural synergy between these two nursing disciplines to also transform the clinical research enterprise.

Nancy King Reame, MSN, PhD, FAAN
Mary Dickey Lindsay Professor of Nursing
Director, Training Nurse Scientists in Interdisciplinary Research (TRANSIT) in Underserved Populations
School of Nursing
Director, Pilot Studies Resource,
Irving Institute for Clinical and Translational Research
Columbia University
Re: An Interview with Susan B. Hasmiller, PhD, RN, FAAN

Dear Dr. Smolowitz,

I would like to thank you for the work you do to disseminate the scholarship of graduates with the doctor of nursing practice degree. I am writing to express my concern with a comment in the interview with Dr. Hasmiller. She states, “...DNPs will help to ensure that enough faculty are available not only at community colleges but also at institutions of higher learning.”

My concern regarding this statement is that until nursing is supportive of baccalaureate education as entry to practice for all nurses, the profession will continue to be trusted, however, perceived as the least influential. Evidence supports baccalaureate preparation for nurses as it demonstrates improved patient outcomes and safety. I do not support that individuals who graduate with the DNP degree should be educating nurses at the community college level as I am opposed to any education less than the baccalaureate degree for nurses. To meet the demands of a career in nursing, individuals need baccalaureate preparation.

Dr. Hasmiller notes that graduates with the DNP degree will be expert clinicians. She states, “...they will be leaders in the domain of direct patient care and will provide a significant amount of the primary care delivered in this country ... perhaps the bulk of primary care in the future.” If graduates with this degree will be the experts in direct patient care, particularly primary care, it would make sense that these experts would be the ones to educate the future generations of providers. Hence, as APRN preparation moves to the DNP degree as entry to practice for this role, it would reason that the DNP graduate would educate those entering the role.

Nursing care requires direct patient care, case management, advocacy, and participation in interdisciplinary teams, an understanding of systems, culture, epidemiology, and health policy. The DNP graduate is well-suited for these areas, and educated to bridge the gap of research to practice. Translation of research and guidelines into patient care and high-quality outcomes is the role for the DNP graduate. Dissemination of this role is essential for advancement and delineation of the role for the DNP graduate.

Thank you for allowing me to express my views as a DNP graduate, a practicing family nurse practitioner, and an educator.

Warmly,

Courtney Reinisch, DNP, APRN, DCC
Clinical Assistant Professor
Family Nurse Practitioner Specialty Director

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References


Nurses who have earned the doctor of nursing practice (DNP) degree are prepared to provide organizational and systems leadership to improve patient and health care outcomes (American Association of Colleges of Nursing, 2006). This new section of *Clinical Scholars Review*, “Restructuring Health Care,” provides a forum for discussing different facets of the health care system and examining the role of DNP prepared nurse as we envision the future of health care service delivery. In this inaugural section, I am pleased to welcome leaders from the Council for the Advancement of Comprehensive Care (CACC) as they reflect on the expanded role and certification of DNP graduates who provide sophisticated comprehensive care across clinical settings and over time.

**Reference**

The seeds of the idea for a clinical doctorate were sown in the late 1980s at Columbia. Nurse practitioner (NP) faculty initiated the first practice initiative that mirrored faculty practice in other disciplines; it was an integral part of their academic role, infused with evidence-based interventions and research collaborations. Within the span of 5 years, these practitioners were partnering with their physician colleagues to do even more. A unique opportunity arose in the early 1990s to develop an NP managed practice and to use the newly established practice as the prototype of NP independent functioning in primary care. With such a rare opportunity came the chance to compare an NP practice with a doctor of medicine (MD) practice opening in the same setting, at the same time, in the same discipline (primary care), in the same context, and with the same authority. Columbia physicians taught the Columbia NPs the skills, diagnostic sophistication, and processes of full scope care to assure the results were legitimate; without having the same authority, results would be flawed. The resulting randomized trial, to test the similarities in practice, was widely scrutinized by medicine and broadly celebrated by nursing when the results showed there were no differences in patient outcomes or quality of care.

It was only a short step in our evolutionary thinking to find a way to standardize the new skills and knowledge the Columbia NPs had learned: authority across sites of care, with seamless oversight and coordination, more sophisticated diagnostic and treatment skills, better use of evidence-based practice, processes of ER evaluations, and admitting and treating hospitalized patients. This constellation of new advanced primary care practice was more comprehensive than the conventional primary care they and others had practiced, and it merited a new title and a standardized way to measure the resulting new scope of practice. The doctor of nursing practice (DNP) was our decision for these new nurses.

Knowing full well that our profession was eager and hungry to move its clinical practice forward, and knowing as well that our new title would be extremely attractive to any nurse aspiring to doctoral level accomplishment as an alternative to the research PhD, we knew we had to anchor this clinical title in a standardized and recognizable way. And we believed the best way to do so was to convince academic nursing leaders and our most eminent physician and health policy colleagues to advocate for these standards before the title moved like wildfire within academia, a title that could be used for any curricula, any outcome, or any competencies a faculty group might decide to use. The Council for the Advancement of Comprehensive Care (CACC) was the organization we formed to promulgate these high, common standards.

We were right that the title of the new degree would be much sought-after, and that action was necessary to keep the clinical focus central to the new degree, but we were wrong that we could forestall the diversity of content and competency that has nonetheless developed in DNP programs across the country. Most DNP programs focus on additive competencies other than advanced clinical practice and instead add competencies in nonclinical education, albeit at a sophisticated academic level, to give
conventional master of science (MS) educated NPs background courses in business, ethics, informatics, and use of evidence. This brand of DNP assumes that the conventional clinical skill and knowledge gained at the MS level is sufficient for doctoral level practice if support courses at the doctoral level are attained. Other DNP programs do not even focus on advancing clinical practice but rather provide doctoral level education in competencies in administration and management. All DNP programs meet the newly argued idea that anything a nurse does is nursing practice, so under such reasoning, administration is nursing practice if the administrator happens to be a nurse. This kind of “Alice in Wonderland” thinking gives credibility to a DNP degree that has so many variable and dissimilar outcomes.

The reality of DNP degree development is that we will not have standardized clinical skills required within the DNP degree. This took us a step further in our CACC deliberations; if we could not standardize the higher clinical knowledge within academic standards for the DNP, then we would have to do so through a certification process that would distinguish those with the new higher level skills and knowledge.

Why were we so adamant that standards for the clinical doctorate were so imperative? Why not just let the many flowers bloom? For the same reason that essential skills and knowledge are now required in MS programs for NPs, standards are crucial for the public to know what competency their provider has achieved. One does not want to trust their complex and often urgent care to a nurse whose DNP is in administration or to an NP whose clinical training ended with their MS degree and specialty certification in ambulatory care; the highest level of care requires the most highly trained practitioner. We believed then, and now, that patients, other practitioners, and the public must know the level of competency of those providing care. Professional ethics and public accountability require that authority within a class must be limited to the lowest common denominator so that every single one in that class has at least the minimum competency. Without a distinguishing certification, those with the DNP clinical training would be limited to the same lower authority as those without the DNP, who had no additional clinical training beyond the master’s degree.

Even if there is broad agreement that clinical DNPs should have a distinguishing certification, there is no broad concurrence that the process we selected in CACC was the preferable route. We chose to establish the American Board of Comprehensive Care (ABCC) as an independent organization to develop a certification process. This was fairly innocuous, but the decision to develop an exam that tested the same medical competency as those receiving an MD license caused consternation in nursing and in medicine. So why did we do it?

We had two choices. We could develop a new exam with new questions—which would test the elements of knowledge and skill, which were the same as those the advanced clinical DNPs at Columbia had achieved, and which had been evaluated in the randomized trial—or we could develop an exam from an existing pool of questions that covered these same new skills of the clinical DNP. In the first option, we would have a huge task of developing new questions de novo, and many years before we would have enough exam takers to validate the questions and answers. In the second option, we would have validated questions ready to use. The issue for many naysayers, of course, is that the questions come from the same pool of questions used by the medical profession for MD licensing. We chose this route not just for ease in developing a reliable exam but also because we believed the additive knowledge and skill of a clinical DNP were skills also required of MDs and that this increasingly common skill set could be reliably—and influentially—combined. This is not such a big stretch in thinking. If the broader and more complex comprehensive care can be provided by either DNPs or MDs, they must, by definition, share a vast amount of similar skill. If so, why not test them with the same questions?

Some pleaded with us to go the separate route, test DNPs with nursing questions, build the recognition that nurses are high-level clinicians, and show that they are distinctive and different. We (CACC) agreed but noted that the DNP certification we developed only covers the more advanced and shared content of comprehensive care. A major requirement of the certification is that the test taker must be a nurse, already licensed, and certified at levels of nursing competence; the new DNP exam would cover the new and more complex skills that both MDs and NPs must have.

Another reason not to develop a second nursing exam is that it perpetuates the idea that nurses, although distinctive and different, are viewed by most patients as being secondary to physicians in knowledge and in authority. By using a parallel exam with MDs, testing the same competencies, it is more difficult to keep nurses in their lower hierarchical standing. It is a way to say nurses can meet the same standard, not a different one.

The clinical DNP with the Diplomate in Comprehensive Care (DCC) certification is a peer with physicians in comprehensive care, and these DCCs also have the
unique and valuable set of nursing skills, knowledge, and perspective that physicians do not have. A test from a pool of questions used for medical licensing is only one part of the progression of nurse testing to finally arrive at doctoral level practice. As the depth of the health care shortage grows, the DCC can become the most sought-after and competent professional to fill the positions in comprehensive care. CACC and ABCC and the first 100 DCCs celebrate this wonderful future. Those who aspire to this same level of achievements should be selecting a DNP program that prepares them for the distinctive and identifying ABCC exam. It will set those DNPs apart from their colleagues who choose a DNP preparing them for an administrative career. But remember, patients should be able to make that distinction, and it is the certifying exam, not the degree that will make this clear.

Correspondence regarding this article should be directed to Mary O’Neil Mundinger, DrPH, Edward M. Kennedy Professor of Health Policy, Columbia University School of Nursing. E-mail: mm44@columbia.edu
One of the great challenges of modern health care is the delivery of primary care services. Even defining primary care is a challenge. But structuring a reliable mode of delivery is the greatest challenge.

When patients approach the health care system, they see an army of specialists who are able to diagnose and treat most diseases in ways that were unimaginable in the past. But access to them is confusing, and coordination among them borders on the impossible. Those patients encountering symptoms for the first time confront a maze of access points, including physician practices, nurse-clinician practices, hospital clinics, community health centers, urgent care centers, emergency rooms, walk-in clinics, retail clinics, telephone consultation, and, when all else fails, advice from friends. And now a new mode of care, the medical home, which promises more comprehensive care at lower prices for patients who enroll in them and at higher incomes for the physicians who direct them.

On average, patients see a physician 4.1 times annually, but, according to the health economist Harold Luft, that ranges from no visits at all for 15% of patients to prevention only (e.g., a flu shot) for almost 5% more to care for an acute, self-limited conditions (back strain, cold, etc.) for another 30%. In other words, almost 50% of the population does not see a primary care provider on a continuing basis. Of the remaining 50%, three-quarters have chronic diseases of varying severity and complexity—half managed by primary care clinicians and half by specialists—and one-quarter have major illnesses. Economists and planners view this array from the last (and most expensive) to the first and concentrate efforts accordingly, but the population views it from the first (and most populace) to the last and seek a coherent and dependable mode of primary care.

Although primary care struggles with modes of delivery, specialty care is evolving in a systematic manner. One characteristic is consolidation into single specialty groups, some free-standing, others embedded in multispecialty clinics, and some aggregated into disease-oriented centers (e.g., cancer centers, Alzheimer’s centers). Nurse practitioners (NPs) and physician assistants (PAs) are providing increasing amounts of this care, ranging from particular elements of specialty care to the general care of specialty patients and long-term follow-up. They also are filling high-level positions within hospitals, some as substitutes for medical and surgical residents who are less available because of the freeze on training in 1996 and because of the restrictions on work hours that were put into place more recently. In like manner, many primary care physicians are serving as hospitalists.

These roles in specialty and hospital care are drawing all three professions away from office-based primary care. For example, although more than one-third of medical students expressed interest in primary care in the late 1990s, fewer than 10% do today; and although the proportion of PAs entering primary care traditionally exceeded half, it is less than one-third today; and although most NPs entered various primary care tracks, fewer than half do today. These dynamics are engrafted upon deepening shortages of advanced clinicians not only because of a shortage of physicians, which is expected to reach 15% by 2020, but also because of shortages of NPs caused by a decade of stagnation in expanding NP training programs, which only recently have grown again. In 2020,
the primary care workforce will consist of approximately 75 physicians, 20 NPs, and 10 PAs per 100,000 of population. Considering the marked increase in women who are entering the medical and PA professions and working less than full-time and lifestyle choices of both genders, the aggregate workforce of office-based primary care clinicians, expressed as full-time equivalents (FTEs), will be fewer than 90 per 100,000 of population—a total that is less than the historic average, yet it must care for an aging population. Approximately 20% of them will be NPs.

How should the delivery of primary care be organized? It should be pragmatic, professional, and patient-centered. And it should be population-based, not institutionally based and tethered to facilities that are organized around diseases and treatments. Indeed, forcing hospitals to serve populations requires each to have all services, leading to wasteful duplication. Neither should primary care be seen creating a referral source for hospitals nor a customer base for drugstores. Rather, primary care should be provided in free-standing entities that are capable of consolidating providers and services, supplanting the range of existing portals to primary care, and marshalling a broad array of resources for populations of patients. Their staffs will include not only physicians, NPs, and PAs but also nurses, educators, nutritionists, exercise physiologists, pain management experts, and others who can meet the full spectrum of primary care needs. These centers will necessarily have bridges to public health and to specialty care but they do neither. Their mission is primary medical care.

Although there are theoretical ways in which the primary care delivered in such centers could be organized, pragmatically it must be organized around the available professionals. As indicated, the combined workforce of primary care physicians, NPs, and PAs will be no larger a decade from now than it is today, although the demands on it will be greater. And like today, it will not be distributed evenly across the nation. Each group of professionals will be highly trained, although differently trained, and therefore able to complement the others. And all will have to work to the maximum of their education and licensure. In some circumstances, care teams will be physician-led and in others they will be led by nurse-clinicians. In some, physicians will limit their responsibilities to serving as consultants and providing care for patients with severe or complex conditions. In others, physicians will also provide routine care. To permit this kind of flexibility, states must equip NPs and PAs with the appropriate licensure and necessary scope of practice, and nurse-clinician leaders must demonstrate their preparedness not only by completing the requisite educational requirements but also by attaining certification for the advanced clinical and managerial roles that they will undertake. Ultimately, it is competence and collegiality within comprehensive treatment centers that will make primary care work for patients and providers.

Correspondence regarding this article should be directed to Richard Cooper, MD, Director, Center for the Future of the Healthcare Workforce, New York Institute of Technology. E-mail: cooperra@wharton.upenn.edu
There are several disturbing aspects about the U.S. health care system when compared to other developed countries. In 2012, the United States spent $2.6 trillion on health care (Centers for Medicare and Medicaid Services [CMS], 2012). That works out to be about $8,233 per year per person (Kane, 2012). The other developed countries spent an average of $3,269. These other countries include essentially all their population, whereas the United States does not cover 47 million citizens and an unknown number of undocumented residents. At the same time, the United States ranks 37th of 191 countries by the World Health Organization on the quality of care provided (Carey, Herring, & Lenain, 2009). One of the promises of the Affordable Care Act (U.S. Congress, 2010) is that there are new incentives for slowing the growth in costs, increasing access to care, and new requirements for demonstrating quality. We shall have to await the full implementation of this new law to see if these promises will be actualized.

Changes in the financing structure alone will not yield the desired outcomes unless we are clear that practitioners of the future are able to practice differently than in the past. This holds particularly true for nurse practitioners (NPs). NPs in the past were educated at the master’s level for roles that only focused in one aspect of care. NPs were prepared as primary care or acute care clinicians with little consideration that patients’ health conditions often required transition through different types of care and across a myriad of specialists. Adverse events often occurred when patients moved from one type of provider to another and across sites of care. Medical record systems are usually setting-specific and did not flow along with the patient. This meant that neither the practitioner nor the record moved seamlessly with the patient. The result was repeated history and physical examination data collection, redundancy of laboratory and radiological testing with their attendant costs, and often prescriptions that conflicted with those of other clinicians. Such a system is simply not sustainable in terms of costs and adverse outcomes.

Fortunately, nursing has risen to this challenge through the development of new NPs who earn the doctor of nursing practice (DNP) degree in one of the few programs that prepare graduates to provide comprehensive care. These new DNPs are competent to deliver, lead, and coordinate care for patients across settings of care and across specialists (American Board of Comprehensive Care [ABCC], n.d.). We now have NPs who have the potential to lead the health care system to new levels of quality. Few of the current NPs were prepared to provide this type of care and fewer yet actually provide comprehensive care. Yet, this is exactly the type of health care that a reformed health care system requires.

The question arises about just how can the profession assure the competency of these new practitioners to deliver comprehensive care? The various states use different approaches to assure the quality of health care practitioners. Generally, there is the expectation that the practitioner successfully complete a rigorous educational program. But, generally there is the expectation of postgraduation, national certification to document beginning, and continuing competency. For the NP providing comprehensive care, the minimum education is the completion of a DNP program preparing the graduate for comprehensive care. The second expectation is that graduates successfully complete
and maintain certification boards. The only examination to document that the NP is competent to provide comprehensive care is offered by the ABCC (n.d.). The purpose of this exam is to test DNP graduates’ knowledge and understanding of the clinical science considered essential for the sophisticated practice of comprehensive care with an emphasis on patient management in ambulatory care settings. DNP’s who are successful in completing the exam are designated Diplomates in Comprehensive Care. This credential is now fully accredited and recognized as the only nurse provider who is fully competent to deliver this type of care.

With the continued implementation of the Affordable Care Act (U.S. Congress, 2010), the public must be assured that NPs have the full competence to provide care at the highest level. This means that the NP is competent to understand care across settings—primary care clinics, emergency departments, hospitalizations, long-term care, and back home. In addition, there is the requirement that these new NPs understand the incorporation of multiple specialists into the stream of care to assure the care provided yields the intended outcomes with the least harm. This is not an easy task yet the Diplomates in Comprehensive Care are the group to lead this care transition for the future.

References

Correspondence regarding this article should be directed to Michael Carter, DNSc, DNP, DCC, University Distinguished Professor, University of Tennessee Health Science Center. E-mail: mcarter@uthsc.edu
Restructuring Healthcare: The GNE Initiative for Increasing the Supply of Advanced Practice Registered Nurses

Patricia L. Starck, DSN, RN
University of Texas, Health Science Center at Houston

In July 2012, the Centers for Medicare and Medicaid Services (CMS) awarded five sites a Graduate Nurse Education Demonstration (GNE) project—University of Pennsylvania, Scottsdale Health System, Rush University, Duke University, and Memorial Hermann-Texas Medical Center. Two of the awardees (Rush and Duke) involved single schools of nursing; the other three each involved a collaboration of schools—19 different schools. Three of the schools awarded degrees for entry-level doctor of nursing practice (DNP) for advanced practice registered nurses (APRNs); all other programs were at the masters level for APRNs. The main purpose of the GNE demonstration was to increase the production of APRNs, thus, the GNE did not include post-masters APRN to DNP preparation. Even though the numbers are small, the project will provide some opportunity to analyze differences in masters and doctoral level prepared APRNs. The schools offered many different APRN options in both primary and specialty care.

Most schools offered the Family Nurse Practitioner (FNP) program that prepares students to give primary care across the lifespan. For comparison purposes, the FNP degree will be used to illustrate some of the challenges our educational offerings present.

The range of credit hours for the master’s entry-level FNP degree program varied from a low of 33 to a high of 59. Programs also varied by clinical hours, although all required a minimum of 500 clinical hours. The highest requirement for the master of science in nursing (MSN) degree was 720 hours. None of the programs concentrated all clinical hours in a residency (full-time clinical).

The entry-level DNP programs had from 74 to 84 credit hours and from 810 to 1,170 clinical hours.

This blatant lack of standardization is very confusing to educators and funders of education. How did nursing education come to be so different? Why is there such a variety in credit hours to produce the same product? Perhaps one explanation lies in the history of accreditation, which valued a school’s uniqueness; how the curriculum addressed the specific needs of one’s community. Even though this expectation is no longer articulated, the influence remains, causing schools to attempt to distinguish themselves from others to justify their existence.

With the DNP, we have the opportunity to have a clean slate. We have established criteria and we have excellent schools in existence that are willing to share what they have developed. We only have to make a commitment to standardize so that the public can trust that a person with the DNP degree has a common level of clinical competency.

The Council for the Advancement of Comprehensive Care has endorsed a methodology and credential that will assure the public—patients and payers—and other professionals of a standardized level of clinical competency. The American Board of Comprehensive Care (ABCC) has contracted with the National Board of Medical Examiners to provide a test that is a corollary of the Step 3 exam taken by physicians. The ABCC certification examination is designed to assess the knowledge and skills necessary for nurse-clinicians to provide safe and effective patient-centered comprehensive care. The DNP graduate who passes this examination is granted...
status of Diplomate of Comprehensive Care (DCC). The DNP credential is well-respected and assures clinical partners, such as physicians, of practice competency. It helps to differentiate nurse-clinicians with advanced clinical skills from those who are from DNP programs focused only on administration, leadership, and health policy.

The DNP graduate prepared and certified to deliver comprehensive care—taking care of the general health care needs of patients across settings—is a fitting match for the needs of the reformed health care system that will demand access, quality, safety, and cost-effectiveness.

Note

1. Source: Information available on school websites and GNE proposals.

Correspondence regarding this article should be directed to Patricia L. Starck, DSN, RN, University of Texas Health Science Center at Houston. E-mail: Patricia.L.Starck@uth.tmc.edu
Nurses with the doctor of nursing practice (DNP) degree are expanding the role of nurses in the health care setting and are expected to bring about new approaches to patient care. The DNP is a practice doctorate and terminal nursing degree that prepares graduates for the highest level of nursing practice beyond the initial nursing preparation. The development of the degree began with the National Academy of Sciences’s (2004) call for nursing to develop a nonresearch clinical doctorate to prepare expert practitioners. Another important purpose of the DNP was to meet parity with other disciplines that require the practice doctorate such as the doctor of pharmacy (PharmD), doctor of physical therapy (DPT), and doctor of medicine (MD). The impending shortage of nursing clinical faculty and mid-level managers also influenced the call for the degree. The development of the DNP degree was precipitated by rapid changes in the health care system that required an interdisciplinary approach to patient-centered evidence-based care to meet the needs of individuals and populations in the United States (Institute of Medicine, 2003).

The anticipated value of the DNP, according to American Association of Colleges of Nursing (AACN, 2004), included seven essential areas: (a) scientific underpinnings for practice; (b) advanced nursing practice; (c) organization and system leadership/management, quality improvement, and system thinking; (d) analytic methodologies related to the evaluation of practice and the application of evidence for practice; (e) use of technology and information for the improvement and transformation of health care; (f) health policy development, implementation, and evaluation; and (g) interdisciplinary collaboration for improving patient and population health care outcomes.

An important distinction is the difference between the doctor of philosophy (PhD), a research doctorate, and the DNP, a practice doctorate. DNPs place emphasis on practice in research, a clinical practicum or residency,
practice improvement, innovation and testing of interventions, and care delivery models. DNPs are academically prepared to evaluate health care outcomes and have increased expertise to inform health policy and leadership to provide clinical excellence (Marion et al., 2003).

According to the AACN (2004), the DNP is projected to, by 2015, be the only practice-focused degree to prepare graduates for the highest level of nursing practice beyond the initial RN preparation. The following four roles will require the DNP: clinical nurse specialists, nurse-anesthetist, nurse-midwife, and nurse practitioner. A set of competencies proposed by the Committee on Health Professions Education suggested the DNP would provide advance practice nurses with additional skills including providing patient-centered care, functioning in interprofessional teams, employing evidence-based practice, integrating quality improvement standards, and utilizing information systems (2003).

Although the DNP degree was proposed to bring added value to the health care system, it is new and there is little research to confirm the assumption. Approximately 184 DNP programs currently enroll students at schools of nursing nationwide and an additional 101 DNP programs are in the planning stages (AACN, 2012). The number of students is increasing as shown by 9,094 students enrolled in 2011, with 1,595 DNP graduates (AACN, 2012). Research studies on the DNP are beginning to offer an expanded view of this emerging degree; however, there is currently a lack of inquiry about practicing DNPs in the U.S. health care system. Further information about whether the DNP degree provides added value is needed to determine the full impact of the role which is defined as “socially expected behavior patterns usually determined by an individual’s status in a particular society” (Merriam-Webster, 2012). This study is intended to examine the research question “what do practicing DNPs perceive about the DNP?”

Theoretical Framework

The conceptual framework for this study is a combination of three theories including Benner’s (1984) theory of novice to expert, Boyer’s (1990) perspective on scholarship, and the theory of complex adaptive systems (Cilliers, 1998). These three frameworks mesh to provide a basis for the study and give a foundation for studying the DNP.

Benner’s (1984) theory of novice to expert described a five-stage model of nursing professional career development and skill acquisition in her book, From Novice to Expert. The theory identified five levels of nursing experience: novice, advanced beginner, competent, proficient, and expert. Benner introduced the concept that expert nurses develop skills and understanding of patient care over time through a sound educational base as well as a multitude of experiences. The model validates the use of intuitive decision making in explaining expert clinical decision-making practices of DNPs. The theory also supports the importance of attaining the DNP terminal nursing degree as a means of demonstrating the highest level of expert nursing knowledge.

Boyer’s model of scholarship (1990) proposed four areas that are critical to academic work. These areas highlight hallmarks of nursing doctoral education: the scholarship of discovery, teaching application and integration, and research. Basic research is viewed as the first and most essential form of scholarly activity; however, Boyer (1990) suggested an enlarged perspective of scholarship that includes applying knowledge to solve problems through the scholarship of application. In the practice of nursing, the DNP applies knowledge to solve problems at an advanced level. This application involves the translation of research into practice and the dissemination and integration of new knowledge into current practice as a DNP.

A third theory that applies to this research is that of complex adaptive systems. Professional nursing has a tradition of emphasizing connections and interactions within a systems paradigm through theorists such as Martha E. Rogers and Sister Callista Roy. Complexity theory expands further on how systems operate. Cilliers (1998) described complex adaptive systems such as the current health care system as having the following characteristics:

- Large numbers of elements interacting in a dynamic way.
- Rich, nonlinear interactions without a framework that controls the flow of information.
- Complex, open systems are with positive and negative feedback loops.
- Complex adaptive systems under conditions of continual change.
- Unpredictable change within the whole system.
- Complex patterns of interaction between the elements. (pp. 3–5)

DNPs practicing in complex adaptive environments assess current and emerging situations in the health care system to impact and lead successful change. Skills are needed to analyze and design the systemic nature of DNP clinical practice and not continue to let it evolve.
randomly. The application of the understanding of health care as a complex adaptive system involves cultivating an environment of listening to people, enhancing relationships, and allowing creative ideas to emerge by creating “small non-threatening changes that attract people” (Holden, 2005, p. 656).

Methods

Design

This study used the descriptive qualitative approach of key informant interviews to investigate practicing DNP’s perceptions of their role. Sandelowski (2000) noted that qualitative descriptive studies focus on generating a comprehensive summary of practices as they occur in participants’ everyday contexts. The key informant approach gathers rich, varied, and textured words from informants selected from their specialized knowledge and unique perspectives on the topic. The key informant interviewing process is like a dialogue between informant and interviewer that begins with open-ended questions and the interviewer exploring relevant topics as the informant brings them up during the interview.

Sample

To be in this study, key informants were required to have earned the DNP degree and to have practiced for a minimum of 1 year as a DNP. Participants included 12 practicing DNPs in the United States. There were 10 females and 2 males included in the study. The length of time with the degree ranged from 1 to 7 years. Participants were chosen through an initial purposive sampling technique and were selected for being “experts” in the field. These participants led to information on an online DNP professional organization website where the call for participants was posted. Subsequent participants were recruited through the website and monthly update e-mails sent to all members from the organization. Participants were contacted by e-mail and confirmed their participation by completing a consent form and returning it by fax. All participants were nurse practitioners (NPs) prior to entering the DNP program.

Data Collection

Data collection took place through individual, semistructured, key informant phone interviews conducted by two investigators. Study participants provided demographic information at the start of the interviews. Demographic data collected included gender, the year of completion of the DNP, and the number of years practicing as a DNP.

Participants agreed to 40–50 min phone interviews using open-ended questions. Interviews were audiotaped, transcribed, and uploaded into NVivo software to facilitate data management and analysis. Follow-up questions to the initial question of perceptions of your role as a DNP emerged; these questions included the following: describe your DNP academic program, describe your work/practice environment as a DNP, describe your practice as a DNP presently versus your practice prior to the DNP, explain how your clinical skills as a DNP impact your practice, describe the DNP role in the organizational structure of your practice setting, describe the economic impact of your role as a DNP, and describe challenges you encounter as a practicing DNP.

Data Analysis

Transcribed interviews were coded for themes using an open coding process. Creswell (1998) described the process for open coding as the process by which the researcher examines the text for salient categories of information. The researcher completed line-by-line coding of the transcripts, affixing codes to each text segment (Richards & Morse, 2007). The codes were defined and refined both during and after data collection and analysis (Miles & Huberman, 1994). Constant comparative analysis was then performed to identify similarities and differences within and between emerging categories and themes (Patton, 2002).

Trustworthiness

Several procedures were used to ensure a trustworthy account of the findings. The Regis University Institutional Review Board (IRB) reviewed and approved this study before the research was started. An audit trail consisting of a reflexive journal and extensive field notes was used to establish rigor (Lincoln & Guba, 1985). Peer review was accomplished by using experienced doctoral-prepared qualitative researchers to review the research process and the resulting codes and themes. Participants’ anonymity was assured by identifying them in the research as informants or participants.

Findings

Participants included 12 practicing DNPs from the Western United States; 10 females and 2 males. Most participants had earned DNP degrees less than 4 years prior. Five broad categories with relational themes emerged from the data of DNPs’ perceptions of their practices.
The categories included educational preparation, practice settings, role acceptance, leadership, and challenges. Categories and themes are presented as they appeared in the course of the interviews.

**Educational Preparation**

**Growth From DNP Academic Programs**

A study theme that emerged was participants’ acknowledgment they experienced growth through their DNP academic programs. A participant stated “it was just mind blowing to learn what I thought I already knew . . . when you analyzed it, I didn't know.” They spoke of achieving a broader view, “I know that my big view is much clearer since I completed my doctoral studies.” Another key informant stated “now I look at how we are delivering care overall with our practice for all of the people that are in our practice.” An emphasis was placed on using research as a DNP. A participant stated “I bring to the clinical setting years of clinical hands-on experience, also the academic ability to find research and to share research with clients.” Another DNP noted “I think that the main thing that the DNP degree has brought to my clinical practice is understanding of evidence-based research.” An informant noted that “as DNP’s [sic] we’ve really looked at the literature, we’ve looked at the guidelines and we’ve really changed those guidelines to fit our patients and our patient populations.” A further area of expanded learning was in health care policy, an informant stated “the DNP program was very intensive into policy and policy formation.” All participants did not feel they had gained clinical expertise in their academic programs. Some comments included “I have been a nurse practitioner for 20 years . . . I don’t think the DNP improved my individual clinical skills with patients.”

**Diverse Views of DNP Academic Programs**

A second theme concerning educational preparation was that the participants voiced different perceptions of what DNP academic programs should look like. Participants noted that the DNP degree was “… pretty distinct from the PhD, but . . . equally rigorous.” Some confusion was noted in the expectations of the two degrees, “We gave an example of 20 different capstone projects and asked faculty to identify whether it was a PhD or DNP (project) and there was a lot of confusion.”

Participants consistently stated that their academic programs were designed to help them be successful in achieving the DNP degree. They spoke of needing the degree for “the credentials” and to maintain or improve their employment situation. Participants achieved the degree in different ways; some completed requirements through a portfolio approach or were “grandfathered in,” others completed intensive clinical hours. One participant stated “in my DNP program, we had an additional twelve hundred hours of clinical work in addition to the master’s program.” Some informants were concerned about cutting back on clinical hours, “We are putting ourselves in a deficit by reducing clinical hours, and we don’t even notice.” Another perception of DNP academic preparation was skepticism about allowing administrative and leadership tracts as opposed to purely clinician preparation. This was highlighted by comments such as

In time the DNP will have many folks in administrative, leadership roles, which I think is of value, but does that track meet the actual title, Doctor of Nursing Practice? And here again my concept of practice is patient care and patient management, so I think in a couple of areas we have hybridized and deluded the degree before it really stood up and began to walk.

**Practice Settings**

**Diverse Practice Settings**

The theme of diverse practice settings was revealed by informants in the category of practice settings. Inpatient practice settings included the hospital, physicians’ offices, hospice, and skilled nursing facilities. One participant was an equal partner in a neurology practice. Another was one of four practitioners in a physician-run practice. Participants described having a “panel of about 40 patients and probably getting 30 calls a week on various acute things.” Community settings comprises urban and rural health centers, long-term care, retail health centers, health fairs, and home health. A participant stated “I call it full contact family practice. I practice in the poorest neighborhood . . . and my patients are very complicated and this is the patient population that I’ve always seen.” Another participant noted that “our retail settings are all by grocery stores so we are right now planning a very large community event inside the grocery store that will focus on support for seniors and various health evaluations.” One of the participants who worked as an NP noted that “my practice is really and truly no different than what it was before (the DNP).”

Academic practice was another setting frequently mentioned by participants. They described teaching in nursing and medical schools. One-half of the informants were teaching full time and many stated that “the doctorate was pretty much mandatory to obtain this position.” The other half of the participants were teaching part-time; many of these informants also had a clinical practice
apart from their teaching jobs or were entrepreneurs. Various teaching positions were noted including teaching in the BSN, MSN, and a family practice residency program. Several participants were instrumental in the development of DNP programs at their institutions.

Role Acceptance

**Expert Clinicians With the Title of Doctor**

Informants identified specific ways that obtaining the DNP degree brought about role acceptance. A theme that emerged was the perception of DNPs as expert clinicians with the title of “doctor.” Physicians and other health care providers acknowledged and respected the achievement of the doctoral degree. A participant stated that “the family practice residents [understand my degree] they are accustomed to having doctoral prepared people as part of the faculty and I am just another one of them.” Another informant stated “as a DNP faculty member, I feel like I’m treated equally and respected by the rest of the clinical track faculty.” Acknowledgement of the DNP’s clinical skills was shown in this quote:

> The neurologists were very pleased that I could walk in and see a neurology patient and not ask a lot of basic neurology questions because of my past experiences. I think they are recognizing that I bring more to the table because of my clinical experiences.

Further support for DNP role acceptance included informants having their “own panel of patients” and bringing “additional skills.” Additional skills included collaboration as an expert clinician. A participant stated that “we’re not socialized [to understand] that the physician will often end up coming to us [for advise] depending on their area of expertise in practice, so I am really looked at as a peer, very much a peer.” It was noted that male participants were more comfortable with the title of doctor as illustrated by the quote: “I use the doctor title for everything, I think that is a way that I have been able to command more respect.” Some of the female DNPs preferred to be called by their first name as a way to be “closer to the patient.” Others stated that “it is still a challenge to be called doctor and I think that’s going to be an evolutionary process.”

**DNP as Communicator**

A secondary theme under role acceptance was the perception of the DNP as a communicator. The participants acknowledged that to achieve acceptance they had to be skilled communicators with patients, staff, and peers. A participant noted that “I think the DNP [degree] helped me develop a little more spine, for a lack of a better way of putting it, in my negotiations with staff and patients.” A primary skill was the ability of DNPs to “talk with families and patients in a way that they could understand.” There was emphasis on helping the staff to address psychosocial aspects of care. A participant noted that “we can’t change people’s personalities but we can help them in specific situations in how to manage behaviors that might be bothersome.” Another aspect of the impact of communication was the need by DNPs to explain and clarify the role of the DNP to others. One participant stated

> I think it is like any other new degree, there is going to be an enormous amount of confusion about it. I can’t tell you the number of people who would ask me what the initials after my name mean and all the parts of it (the DNP) takes a bit of explaining.

Challenges

**Evolving Leadership Roles**

Participants shared a hesitancy to take on leadership roles in their organizations. One stated that “as far as leadership activities, I am not in a place to pick up any more responsibility.” Another DNP shared “I didn’t seek out anything else as far as a leadership role, or something along those lines in my practice.” Yet another noted that “I see the DNP as a leader but what does the market place say?” Examples of leadership roles that participants took on in both the clinical and academic settings includes that of the following: “taking charge of a team looking at national guidelines for hypertension and diabetes management,” “in charge of monthly grand rounds,” “lead [faculty] in setting up the DNP program,” and “chair for college wide evaluation.” One participant discussed her role as a leader in terms of collaboration in the community setting resulting in “more relationships with the community.” Another informant described her leadership role as an entrepreneur owning her own education business for 20 years. The evolving role was addressed by a participant that said “I think we are going to see more and more DNPs having their own businesses and not being tied to physicians.”

**Peer and Staff Skepticism**

Informants shared their challenges with peer and staff skepticism about the DNP degree. Nursing peers were the most vocal in their lack of support for the DNP. One informant noted that “[In a large public nursing audience] a bunch of nurses were very confrontational about the need for the DNP.” Others stated “I am almost 60; my age peers are saying I’m not going back to school, this is just too
much.” An informant stated that “they [NPs] see me as a trusted colleague, but I am not sure it has changed much since I got the doctorate (DNP).” Yet another commented that “Until we are at a point where we have a critical mass within the profession with the degree, it still points to kind of a curiosity.” Some physicians were uncertain about the role of the DNP; “They have not been exposed to many DNPs . . . they really don’t know what other things I bring to the table.” Yet another noted that “they [health care staff] are not seeing that I am bringing anything different.” A participant stated that “employers haven’t recognized the expertise that the DNP brings to the work place . . . they advertise for a PhD . . . when the job is better suited to a DNP.” Another informant stated “For the workplace to recognize that there is a value added by it [DNP], they need to think bigger with the NP role not smaller.”

**Regulatory Encumbrances**

Participants identified laws and regulations as a challenge holding them back from full practice of the DNP role. An informant noted that the “home health laws are so obsolete.” “For now, a DNP to do more is impossible until that language is changed.” A common idea was expressed by a participant that said, “your role [as a DNP] is somewhat dictated based on policy decisions about reimbursement. So we need to be leaders on the national scene to get some of that changed.”

**Discussion**

This study revealed the fluctuating academic and practice environment of 12 DNPs employed in the Western United States. Each theme supported aspects of the evolution of the new degree and how the DNPs in this study navigated changing circumstances. All participants felt they experienced growth in their DNP academic programs, however, most did not feel that their clinical skills improved significantly because of their programs. This is attributed to the fact that all participants were experienced NPs entering DNP programs following completion of the masters in NP programs. It is anticipated that future nurses entering the BSN to DNP will have different perceptions because of gaining their initial practice skills in their DNP program.

Participants in the study confirmed that there was considerable curricular variation among DNP programs, which was consistent with the finding of the task force on the clinical doctorate that met early on in the development of the degree (Zaccagnini & White, 2011). The informants’ diverse views of DNP academic programs reflect the variety of programs and the different emphasis placed on clinical hours. It was significant that many participants voiced concern about DNP programs allowing administrative and leadership tracts as opposed to purely clinician preparation. They viewed this as a way of “lessening” the degree.

Informants in the study identified working in diverse practice settings that included inpatient, community, and academic areas. It was expected that many DNPs would continue in their present jobs as NPs, but it was encouraging to hear of new positions created by DNPs including those that brought them closer to patients in the community such as in retail settings. It was also significant to hear of entrepreneurs among them. Another anticipated purpose of the DNP was to fill the clinical faculty void for nurses with advanced practice expertise. This proved to be true in the study because many of the participants were either teaching full-time or part-time.

It was interesting to note that none of the faculty spoke of taking education classes to prepare them for this role.

An observation of the participants was their struggle to practice at the full level of the DNP. Physicians and other health care providers acknowledged achievement of the doctoral degree, but some of the DNPs experienced difficulty realizing the potential of their practice expertise. This was an expected finding of nurses with a new degree. Some participants were unwilling to embrace the title of doctor. Researchers expected to learn of resistance from physicians, however, in this study much of the resistance was from the DNPs themselves. It was not surprising that the male participants felt less opposition to being called doctor. Female DNPs were more resistant to the title, which may be caused by a feminine perspective of how the title would affect interpersonal relationships.

The concept of the DNP as a communicator was a significant finding in that all DNPs in the study had to explain and clarify the role of the DNP. Communication skills were critical. It was surprising that some health care providers saw DNPs as experts in dealing with psychosocial aspects of care. This may be an unexpected role that DNPs will assume based on needs in the clinical setting.

Challenges were expected with early achievers of the DNP degree. DNPs in this study expressed difficulty being leaders, although they stated that they envisioned future potential leadership roles. Confidence in their abilities is expected to expand over time as the role of the DNP matures and evolves. This study found few DNPs in leadership positions and attributed that to the lack of understanding of the skills they bring to the clinical setting. Informants indicated that the challenge of peer, staff, and institutional skepticism will eventually be overcome by having a critical mass of nurses with the degree. More
practicing DNPs will provide mentoring and acceptance to novice practitioners.

A final frequently stated challenge was regulatory encumbrances. This issue was of tremendous concern to the study informants. It should be noted that the regulatory environment continues to be in constant flux with laws continuously updated. An example is the Centers for Medicare and Medicaid Services (CMS) change in the regulatory language regarding reimbursement for APRN services, from having nurses hold a “master’s degree” to holding a “graduate degree in nursing.” This important language change removed any potential barriers to DNP-prepared nurses seeking reimbursement for their services (Raines, 2010). Issues regarding expanded practice will continue to evolve. Study participants stressed the importance of members of the nursing profession staying involved and advocating for full potential of the DNP degree.

Limitations and Recommendations

A small sample size was a limitation of this study. A larger sample is needed to investigate perceptions of practicing DNPs including nurses that gain their degree through the BSN-DNP curricular path and those with the education and leadership focus. Research is needed to continue gaining understanding of the “value added” by the DNP to the nursing profession and to the publics’ health.

Conclusions

The results of this study provide insight into the perceptions of practicing DNPs experiencing adjustment to the DNP role. These perceptions aid other DNPs and educators in preparing advance practice nurses for the future. DNPs in this study perceived their education provided them with skills to meet the needs of the public, particularly in the area of increased knowledge of evidence-based practice. Academic programs continue to evolve and issues related to number of clinical hours and curricular emphasis will require further research to establish credibility.

DNPs should be prepared to envision and create new roles within various organizations and institutions. They will require strong communication skills to inform and educate others about the new degree. New DNPs will need to take full advantage of their abilities as doctoral-prepared nurses and acknowledge their skills and leadership potential. As the number of DNPs reaches a critical mass, skepticism about their position will be reduced, but they will need to continue to champion policy change related to standards of practice and reimbursement.

References


Correspondence regarding this article should be directed to Pamella Stoeckel, PhD, RN, CNE, Regis University, Loretto Heights School of Nursing, 3333 Regis Blvd., G-8, Denver, CO 80221-1099. E-mail: pstoecke@regis.edu
The Relationship Between Self-Efficacy and Fluid and Dietary Compliance in Hemodialysis Patients

Ansy John, DNP, APN, FNP-BC  
*DaVita Desert Springs Dialysis Clinic, Las Vegas*

Patricia T. Alpert, DrPH, MSN, FNP-BC, PNP-BC, CNE, FAANP  
Jennifer Kawi, PhD, APN, FNP-BC  
Richard Tandy, PhD  
*University of Nevada, Las Vegas*

Patients with end-stage renal disease (ESRD) require complex medical management that necessitates strict adherence to their treatment program. But why individuals are noncompliant with their prescribed therapeutic regimen is not well understood. The purpose of this study was to determine the relationship between self-efficacy and self-reported fluid and dietary compliance as well as identify the possible barriers that prevented patient compliance. One hundred ESRD patients who received hemodialysis three times a week participated. Bivariate correlational analysis showed there were strong positive correlations between self-efficacy and daily fluid ($r = .56; p < .001$) and dietary ($r = .53; p < .001$) restrictions. Linear regression analysis was used to analyze the potential barriers predicted for fluid and dietary compliance, which also showed statistical significance. The results showed those who reported being in social gatherings were less compliant with fluid and dietary restrictions ($F[1, 90] = 14.62, p < .001$). Similarly, those who reported greater frustration with kidney disease reported less compliance with fluid and dietary restrictions ($F[1, 90] = 4.65, p < .01$). By using the results of this study, clinicians and nurses can adopt multiple strategies to improve patient self-efficacy levels and self-management capacities. This study also provides a better understanding of barriers that prevents dietary and fluid restriction compliance.

**Keywords:** self-efficacy; barriers to dietary restriction; barriers to fluid restrictions; hemodialysis; end-stage renal disease

Chronic renal failure is marked by a progressive and frequently irreversible decline in kidney function. When most normal kidney function is lost (glomerular filtration rate [GFR] < 15%), the patient is described as having end-stage renal disease (ESRD). They undergo a complex treatment regimen, which often involves dialysis and a wide range of dietary and fluid restrictions. Frequently, these restrictions are not followed as prescribed, rendering the patient susceptible to long-term irreversible consequences such as cardiovascular disease and hypertension (Barnett, Yoong, Pinikahana, & Si-Yen, 2008).

Compliance with treatment regimens can promote the prevention or minimization of complications associated with hemodialysis and is an important factor contributing both to survival and quality of life (Atreja, Bellam, & Levy, 2005). Compliance may be influenced...
by several factors such as knowledge, health beliefs, self-efficacy, relationships, and satisfaction with treatment and support (Barnett et al., 2008). Patient education provided by health care professionals promotes compliance and reduces the occurrence or exacerbation of comorbid conditions (Atreja et al., 2005), but human behavior behind compliance/noncompliance is not well understood.

More effective clinical interventions are necessary to address patient behaviors to improve therapeutic outcomes for ESRD patients. The cost of complex treatment regimens associated with noncompliance further increases the cost burden on both the patient and the health care system. The cost burden has been estimated at $150 billion each year in the United States (Jin, Sklar, Sen Oh, & Chuen Li, 2008) with approximately 30% of hospitalizations attributable to diet, fluid, and medication noncompliance. Other characteristics of ESRD and dialysis treatment that contribute to difficulties with compliance include lifelong treatment, difficulty understanding the rationale for treatment, and/or short-term consequences of noncompliance that may not be obvious to the patient (Renal Rehabilitation Report, 2007).

Persistent noncompliance leads to the development of comorbidities such as cardiovascular disease, which account for up to 50% of deaths (Chan, Wong, & Chow, 2009). Hypertension and diabetes, universal features of ESRD especially in patients receiving hemodialysis, can lead to left ventricular enlargement, cardiomyopathy, and subsequent cardiac failure (Foley et al., 2005). Hypertension in patients receiving hemodialysis maintenance is often caused by salt and water overload associated with excessive weight gain and contributes to increased morbidity and mortality (Foley et al., 2005).

According to Chan et al. (2009), up to 50% of patients on hemodialysis are noncompliant with their fluid and dietary restrictions. Adherence to fluid restrictions and dietary guidelines, as well as keeping prescribed hemodialysis appointments, are essential for adequate management of ESRD. If noncompliance persist, organ transplantation—the only viable alternative—may not be an option for these patients. More than 4,000 patients die every year in the United States while waiting for a lifesaving kidney transplant. A successful renal transplant program requires a substantial financial investment, and additional expenditures are necessary to avert rejection after renal transplant. The cost of Medicare to maintain a kidney transplant recipient is approximately $8,550 per year if one is fortunate enough to obtain a donor organ. These factors make it even more important for ESRD patients to comply with their treatment regimens (Kaufman, 2011).

To formulate effective strategies to counter noncompliance, there is a need to systematically review the factors that contribute to this behavior. An understanding of the physical and psychosocial factors associated with barriers to dietary and fluid compliance may offer health care providers more effective therapeutic strategies.

Dietary and Fluid Restriction

Fluid should be limited to 1,000–1,500 ml per day. Standard dietary restrictions call for a maximum per day requirement of 18 g of protein, 2,000–3,000 mg of potassium, 800–1,000 mg of phosphorus, and 2,000 mg of sodium. This type of restriction requires major lifestyle behavior change in dietary habits. According to the Renal Rehabilitation Report (2007), patients with more complex treatment regimens have a greater likelihood to be noncompliant.

Purpose of the Study

The purpose of this descriptive correlational study was to determine the relationship between self-efficacy and self-reported fluid and dietary compliance in hemodialysis patients. The secondary purpose of this project was to identify the barriers preventing dietary and fluid restriction compliance in ESRD patients who receive hemodialysis.

Study Questions

The following questions were addressed in this pilot study:

1. Is there a relationship between self-efficacy and fluid compliance?
2. Is there a relationship between self-efficacy and dietary compliance?
3. What are the barriers to patient adherence to fluid and dietary regimens?

Definition of Terms

For the purpose of this study, the following terms were defined as follows:

- **Self-efficacy** was defined as a person’s belief in his or her ability to succeed in a particular situation (Bandura, 1997). This includes promoting a positive attitude and increasing patient perceptions of behavioral control over adherence to fluid and dietary restrictions in ESRD (Ficham, Kagee, & Moosa, 2008).
- **Fluid compliance** was defined as patients reporting adherence to limited fluid intake, as determined by interdialytic weight gain between 3% and 5% of a
patient’s estimated dry weight. When applied to ESRD patients, the term “dry weight” meant the amount of body mass (weight) without extra fluid.

- Dietary compliance was defined as adherence to limited dietary sodium, potassium, phosphorus, and calcium to maintain laboratory values within a healthy range in ESRD (see Table 1 for values). Dietary nonadherence has been assessed by using indirect measures such as the patient’s self-report and direct measures such as predialysis serum levels of potassium, phosphate, urea nitrogen, and creatinine, as well as predialysis normalized protein catabolic rate (Kara, Caglar, & Klick, 2007). For the purpose of this study, dietary compliance was obtained through self-report.

### Setting and Sample

The study took place in an outpatient hemodialysis clinic in Las Vegas. The unit consisted of 20 hemodialysis stations in an open area. Patients were scheduled 3 days a week for treatment. The potential sample included all patients with ESRD who received regular hemodialysis three times a week for at least a 3-month period. There were 100 patients (N = 100) who met the criteria and participated in this study.

### Inclusion Criteria

All eligible participants met the following criteria: (a) able to walk, (b) able to prepare meals and eat without assistance, (c) at least 18 years of age, (d) able to read English at approximately the 5th grade level, (e) live in a home setting, and (f) willing to participate.

### Exclusion Criteria

Individuals who were recently hospitalized or recently suffered an acute illness were disqualified. Those who had a psychological or cognitive disorder, as well as those unable to perform their self-care activities, were also excluded.

### Instrumentation

The study used a modified version of the “Your Health and Well-Being” questionnaire, which addressed potential barriers to compliance with fluid and dietary restrictions and other possible barriers to treatment compliance. This instrument was modified to include specific questions related to self-efficacy. For example, questions 15 and 16 addressed the patient’s confidence in their ability to follow fluid and dietary restrictions during a 24-hr period. All Medicare recipients on dialysis completed this questionnaire, which had good validity and reliability (Cronbach’s alpha = 0.69–0.94; Centers for Medicare and Medicaid Services, 2008).

### Procedure

After institutional review board (IRB) approval was obtained from a university in Las Vegas, Nevada, participant recruitment began. The patients at the dialysis center were approached to participate in the study. The principal investigator (PI) explained to the potential participants the purpose of the study, the expectations of participation, and they were provided with written information. They were told participation was voluntary and refusal would not compromise their relationship with the clinical site. If they decided to participate, they were told they did not have to answer survey questions that made them uncomfortable.

Participants were told there were minimal anticipated risks and were reassured their care would not change should they choose not to complete the questionnaire. In addition, they were informed they could withdraw from the study at any time simply by returning the unanswered questionnaire. They were told all information would be treated confidentially and neither their names nor personal identification would appear on the questionnaire; instead, a code number was assigned to each questionnaire. They were also told any publication resulting from this study would be reported in aggregate form only.

Those who agreed and qualified to participate signed an informed consent, and a copy of the consent was given to the participants for their own records. Participants were then asked to complete the self-administered questionnaires (i.e., a demographic data sheet and the modified ‘Your Health and Well-Being’ questionnaire). The PI was present to answer questions posed by the participants as they completed the surveys and they were asked to place the questionnaires in a manila envelope to maintain confidentiality of participants. This process continued until the sample size (N = 100) was reached.

### Table 1. Lab Values for Dietary Compliance

<table>
<thead>
<tr>
<th>Electrolytes</th>
<th>Reference Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium</td>
<td>135.0–145.0 mEq/L</td>
</tr>
<tr>
<td>Potassium</td>
<td>3.5–5.5 mEq/L</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>3.5–5.5 mg/dl</td>
</tr>
<tr>
<td>Calcium</td>
<td>8.4–10.2 mg/dl</td>
</tr>
<tr>
<td>Blood urea nitrogen</td>
<td>9.0–28.0 mg/dl</td>
</tr>
<tr>
<td>Creatinine</td>
<td>0.8–1.6 mg/dl</td>
</tr>
</tbody>
</table>

(For the purpose of this study, dietary compliance was obtained through self-report.)
Data Analysis

Statistical analyses were performed by using the statistical package for social science (SPSS) version 19.0. Descriptive statistics (means, standard deviations, and frequencies) were used to detail the demographic characteristics of the study sample. Pearson product–moment (for interval level data) and Spearman rho (noninterval data) tests were used for all correlational analysis of self-efficacy and self-reported fluid and dietary compliance. Linear regression analysis was used to identify the potential barriers predictive of fluid and dietary compliance. Internal consistency reliability testing was also done on the instrument using Cronbach’s alpha.

Results

Descriptive statistics of pertinent demographic variables (see Table 2 for details) indicated the age of participants ranged from 33 to 91 years ($M = 56.91, SD = 12.91$; median age was 57.50 years), and the number of years participants reported being on hemodialysis ranged from 3 months to 22 years ($M = 3.13, SD = 3.06$). Table 3 contains the means, standard deviations, and internal consistency reliability coefficients—Cronbach’s alpha—of pertinent composite scores such as self-efficacy and food and fluid restriction compliance. Finally, Table 4 contains the zero-order correlation matrix expressed as Pearson’s correlations for these composite variables.

The data were analyzed with bivariate correlation analyses to answer Questions 1 and 2 of this study, as expressed by Pearson’s product–moment correlation coefficients. With respect to Question 1, there was a strong positive correlation between the self-efficacy score and daily fluid restriction compliance, $r = .56$ ($p < .001$). The more self-efficacy a participant reported, the higher the self-reported fluid restriction compliance. The same could be said regarding Question 2. There is a strong positive correlation between self-efficacy score and daily food and fluid restriction compliance, $r = .53$ ($p < .001$). The more self-efficacy a participant reported, the higher the self-reported dietary restriction compliance.

### Table 2. Descriptive Statistics of the Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>60 (60.0)</td>
</tr>
<tr>
<td>Female</td>
<td>40 (40.0)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>19 (19.0)</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>30 (30.0)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>18 (18.0)</td>
</tr>
<tr>
<td>White</td>
<td>32 (32.0)</td>
</tr>
<tr>
<td>Other/Mixed</td>
<td>1 (1.0)</td>
</tr>
<tr>
<td>Income</td>
<td></td>
</tr>
<tr>
<td>&lt;$10,000</td>
<td>29 (31.2)</td>
</tr>
<tr>
<td>$10,000–$20,000</td>
<td>37 (39.8)</td>
</tr>
<tr>
<td>$20,001–$40,000</td>
<td>19 (20.4)</td>
</tr>
<tr>
<td>$40,001–$60,000</td>
<td>2 (2.2)</td>
</tr>
<tr>
<td>$60,001–$80,000</td>
<td>4 (4.3)</td>
</tr>
<tr>
<td>&gt;$80,000</td>
<td>2 (2.2)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>22 (22.0)</td>
</tr>
<tr>
<td>Married</td>
<td>40 (40.0)</td>
</tr>
<tr>
<td>Divorced</td>
<td>23 (23.0)</td>
</tr>
<tr>
<td>Widowed</td>
<td>9 (9.0)</td>
</tr>
<tr>
<td>Living with a partner/companion</td>
<td>6 (6.0)</td>
</tr>
<tr>
<td>Health Insurance</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>91 (91.0)</td>
</tr>
<tr>
<td>No</td>
<td>9 (9.0)</td>
</tr>
</tbody>
</table>

Note. $N = 100$.
The coefficient of determination, $r^2$, represented the shared variance of the two variables, or the shared/overlapping variability between the two variables. The $r^2$ for these correlations were .31 for self-efficacy and daily fluid restriction compliance and .28 for self-efficacy and daily dietary restriction compliance.

With respect to Question 3, the first stepwise linear regression analysis using compliance with fluid restrictions as the criterion was statistically significant, $F(2, 78) = 9.04$, $p < .001$, $R^2 = .19$. Only the feeling of thirst variable, $b = -4.16$ (95% CI: $-6.43, -1.89$), and feeling highly energetic, $b = 2.71$ (95% CI: $0.59, 4.83$), significantly predicted compliance. This suggested those who experienced a higher degree of thirst reported less compliant with fluid restrictions. In other words, as the degree of thirst increased, the level of compliance with fluid restrictions decreased. Moreover, those who reported feeling highly energetic also reported greater fluid compliance; thus, as reported energy levels increased, the level of compliance increased as well.

The second stepwise linear regression analysis using dietary restrictions as the criterion was also statistically significant, $F(1, 80) = 7.21$, $p < .01$, $R^2 = .08$. In this instance, feeling highly energetic, $b = 2.94$ (95% CI: .76, 5.12), significantly predicted dietary restrictions.

Discussion and Recommendations

The evidence supporting the impact of factors that affect adherence was somewhat mixed (Krueger, Berger, & Felkey, 2005). Most studies agree to improve a patient’s ability to follow treatment regimens, all potential barriers to adherence need to be considered (Kammerer, Garry, Hartigan, Carter, & Erlich, 2007). The literature also identifies the quality of the treatment relationship as an important determinant of self-efficacy and adherence. The aim of this study was to explore how self-efficacy influenced self-reported fluid and dietary compliance behaviors of hemodialysis patients. An assessment of possible correlates of self-reported dietary and fluid noncompliance, including quality of life, depression, patient dissatisfaction with dialysis care, and absence of symptoms was conducted. Results from the bivariate correlational analysis indicated there was a significant correlation between self-efficacy score and daily fluid as well as dietary restriction compliance. Patients with greater self-efficacy reported more favorable compliance attitudes and behaviors toward fluid and dietary compliance. Rosenbaum and Ben-Ari Smira (2006) demonstrated those with higher self-efficacy had lower interdialytic fluid gain and better dietary compliance.

Analysis of the potential barriers predicted for fluid and dietary compliance showed those who reported being in social gatherings also reported less compliance with fluid and dietary restrictions. Participants who reported feeling more energetic and/or “less downhearted” or “blue” also reported greater compliance with diet and fluid. Jin et al. (2008) illustrated the relationship between depression and noncompliance was substantial and significant.

The results of this study have important implications for ESRD patients who are on dialysis treatment. The findings suggest the assessment of self-efficacy of hemodialysis patients concerning fluid and dietary intake compliance should be an essential part of nursing practice. In addition, addressing the factors identified in this study as significant barriers to fluid and dietary compliance are necessary elements of a comprehensive management for ESRD patients.

If depression or anxiety is linked to reduce self-efficacy, a team approach should be employed that includes psychologists, psychiatrists, or social workers that are consulted to identify, comprehensively diagnose, and treat these conditions. Cognitive behavioral therapy has been shown to improve symptoms of depression, anxiety, or other emotional and behavioral problems in patients on maintenance dialysis (Kimmel & Peterson, 2006).

Several factors must be in place to maximize patient compliance and improve self-efficacy. First, the health care professionals and the treatment settings must be positive and should inspire hope and trust. A patient should be seen as a partner in the design and implementation of their treatment plan. Treatment plans should be realistic based on what the patient should and can do.

Also, an adequate profile of the patient should be constructed to determine if there are any underlying psychological, physical, or behavioral problems that might mitigate compliance. If predisposing psychodynamic issues were identified, treatment by trained medical psychologist is recommended.

Identification of barriers may help clinicians to identify a patient’s risk for noncompliance. This is best achieved by asking patients nonjudgmentally about compliance behavior. By giving patients permission to discuss their noncompliant behavior, practitioners can help them reach set goals.

Clinicians should consider providing self-efficacy training to improve the confidence of patients on hemodialysis to help them control weight gain and follow the recommended dietary regimen between dialysis sessions. Nurse practitioners are in a good position to influence the
self-efficacy of dialysis patients and can encourage them to adopt self-care strategies by providing a supportive environment in which they can achieve their goals.

Practitioners can also assist patients by setting realistic daily performance goals and providing appropriate anticipatory guidance. They can assess progress, clarify management, and respond to specific questions during consultation sessions. They can also influence a patient's self-efficacy and performance by teaching stress reduction methods to control emotional and physical symptoms, and ultimately improve confidence in the patient's ability to adhere to fluid and dietary restrictions.

Promoting self-management improves the health status of patients undergoing hemodialysis (Chen & Wang, 2009). A team approach is imperative to achieve successful self-management in patients on hemodialysis, as with other chronic disease treatments. Nurses and clinicians should use multiple strategies based on the self-efficacy theory to improve the patient's capacity for self-management.

Study Limitations

Like most studies, there were a few limitations that have affected the outcomes of this particular study. One limitation was the cross-sectional nature of the study design because it limits information about the topic under investigation to one point in time. A longitudinal study might shade greater insight into the issue of self-efficacy and barriers to compliance. Another limitation resulted from the nonexperimental design and the small sample size. These factors make it impossible to generalize findings; however, this study does reinforce other study findings on self-efficacy as it relates for patients’ health behaviors.

Conclusion

Despite the possible serious side effects of dietary and fluid noncompliance, a large number of hemodialysis patients consistently exhibit poor adherence. An understanding of the physical and psychosocial factors associated with dietary and fluid adherence may aid in improving compliance. It is hoped that by employing strategies to improve self-efficacy, patients will experience an improved attitude and increased motivation to participate positively in their own treatment to optimize health, prevent complications, control symptoms, use medical resources, and minimize the intrusion of the disease into their preferred lifestyles. The introduction of a more structured program for long-term, noncompliant patients may be an effective supplement to less formal initiatives to improve patient outcomes. The results of this study suggest practitioners should be concerned about the attitudes, beliefs, and barriers affecting their patients. Practitioners should also act collaboratively with their patients to design realistic treatment plans that are customized to the patient's individual life circumstances.

References


Correspondence regarding this article should be directed to Patricia T. Alpert, DrPH, MSN, FNP-BC, PNP-BC, CNE, FAANP, Physiologic Nursing Department, School of Nursing, University of Nevada, Las Vegas, 4505 Maryland Parkway, Box 453018, Las Vegas, NV 89154-3018. E-mail: patricia.alpert@unlv.edu
The Use of Antiretroviral Therapy in the Prevention of HIV Transmission Among Serodiscordant Couples

Michelle Peters, DNP, FNP-BC
School of Nursing, Columbia University

Despite the advances the HIV community has made in the past 3 decades in evolving HIV into a manageable chronic disease, emphasis needs to remain on reduction in the risk of transmission. Multiple studies conducted on serodiscordant couples have demonstrated an association between viral load and risk of transmission. Treatment of serodiscordant couples as a preventative measure may be a critical weapon to add to the defensive arsenal in continuing to battle the HIV epidemic. Two case reports are presented that may be of “typical” serodiscordant couples.

Keywords: HIV-1; transmission; serodiscordant couple; antiretroviral therapy

The acquired immunodeficiency syndrome (AIDS) was first observed in 1981 when case reports of young, homosexual men in New York and California began to present with rare malignancies such as Kaposi’s sarcoma and uncommon infections like Pneumocystis pneumonia (Centers for Disease Control and Prevention [CDC], 1981). Despite the fact that it was initially confined to a specific demographic group, the human immunodeficiency virus (HIV) has crossed into different populations over the past 30 years to become the most deadly epidemic of the 20th century (CDC, 2006). Having taken more than 35 million human lives, the AIDS epidemic rivals the influenza pandemic of the early 1900s and the bubonic plague of the 1300s in terms of casualties (CDC, 2006). With the advent of highly active antiretroviral therapy (HAART) in 1995, AIDS has since evolved into a chronic disease. As the CDC proposes, “Advances in the treatment of HIV infection have resulted in a fundamental shift in its epidemiology, to a potentially chronic and manageable condition” (Broder, 2010).

Preventing transmission, however, remains a high priority among health care providers and public health officials. Over the past three decades, a wide range of behavioral and biomedical preventative efforts have been aimed at decreasing the transmission of the HIV-1 virus. Despite these public health efforts, many of which have been aimed at increasing safe sex practices and condom use, heterosexuals are currently the fastest growing group in the United States at risk for new infection. African Americans are particularly vulnerable. Despite the fact that African Americans consist only 12% of the U.S. population, they compromise 45% of newly diagnosed HIV infection (El-Bassel et al., 2010); a rate seven times higher than Whites.

Within the African American community, the rate of disease transmission in serodiscordant couples, in which one partner is HIV positive and the other is HIV negative, is 935.0 per 100,000. This statistic compares to the overall incidence of HIV transmission for African Americans, which is 83.8 per 100,000 (El-Bassel et al., 2010).
2010). Thus, HIV-negative African Americans in serodiscordant relationships are particularly in danger of HIV acquisition (El-Bassel et al., 2010). Emerging research endorses the use of HAART as a preventative measure in this population (Attia, Egger, Muller, Zwahlen, & Low, 2009). This concept has been validated by the findings of various global studies on serodiscordant couples over the last three decades (Attia et al., 2009; Castilla et al., 2005; Donnell et al., 2010; El-Bassel et al., 2010; Fideli et al., 2001; Gray et al., 2001; Melo et al., 2008; Quinn et al., 2000; Reynolds et al., 2011). HIV transmission has been changed by the virtual elimination of mother to child transmission in developed countries through voluntary testing of pregnant women and subsequent initiation of peripartum HAART (Donnell et al., 2010). The following case studies illuminate the need to address the risk of transmission from HIV-positive women in serodiscordant couples and illustrate how seroconversion can be effectively halted through HAART initiation.

**Case Reports**

A 27-year-old African American female presents to establish primary care practice after being diagnosed with HIV during a recent admission to the emergency department. She is currently living in a women’s shelter and admits to exchanging sex to support her crack-cocaine habit. Her initial viral load is 2,712 copies/ml and her CD4 count is 1,176 cells/mm³. She states she is in a relationship with a live-in partner who is unaware of her status. She denies using barrier protection. Despite extensive counseling, she has been reluctant to reveal her diagnosis to her partner out of fear he may leave her. Consequently, she has been noncompliant with her medication regimen. Initially, she attempted to disguise her medication by storing it in vitamin containers to keep her treatment and diagnosis secret from her partner. This method was ineffective and she continued to be irregular in taking HAART medications on schedule.

To assist this patient in taking her medication, we began directly observed therapy (DOT) in the clinic. Because of several years of inconsistent adherence to her HAART medications, the resistance panel revealed the K65R, K70E/R, K103N, M184V, and P225H HIV-1 viral mutations. Consequently, she is resistant to abacavir (Ziagen), didanosine (Videx), lamivudine (Epivir), emtricitabine (Emtriva), tenofovir (Viread), efavirenz (Sustiva), and nevirapine (Viramune) and is possibly resistant to stavudine (Zerit). Because of her intermittent compliance to home-written prescriptions and in-office DOT and extensive resistance to medications, her HAART regimen has been deferred until further notice.

**Discussion**

Heterosexual transmission depends on a complex interplay involving both behavioral and biological factors. Increased risk of transmission is associated with higher HIV-1 viral titers in numerous studies (Fideli et al., 2001; Gray et al., 2001; Melo et al., 2008; Quinn et al., 2000). In a hallmark study performed in Uganda, 415 discordant couples were followed prospectively. At the end of the 30-month long observation period, 90 (22%) of the 415 initially HIV-1 negative partners seroconverted—50 (56%) were female and 40 (44%) were male—resulting in an overall occurrence of 11.8 per 100 person years (Quinn et al., 2000). Following this observation, Quinn and his colleagues (2000) concluded that viral load is the most important prognosticator of the risk of heterosexual transmission of HIV-1.

The correlation between viral load and transmission appears to be proportional, as serum viral levels increase so does the risk of heterosexual transmission. In the aforementioned study, 364 (88%) of the 415 HIV-positive partners had detectable RNA levels. Among the serodiscordant couples whose negative partner seroconverted, the average viral load of the transmitters was significantly higher than those of couples where the HIV-negative partner remained negative. Of the 51 couples in which the positive partner had undetectable viral loads, defined as less than 1,500 copies/ml, not one individual acquired the virus (Quinn et al., 2000). Thus, viral load remains the factor most strongly associated with viral transmission. The results of this study estimate that the unadjusted risk of transmission per coital act to be 0.0011, with a range between 0.0001 and 0.0020 (Gray et al., 2001). This risk of transmission has a log-linear relationship with HIV viral load (Lingappa et al., 2010). Prospective data collected from 3,381 serodiscordant couples from 2004 to 2008 estimates that a decrease in HIV-1 RNA of .74 log10 copies/ml reduces the probability of transmission by 50% (Lingappa et al., 2010). In an additional study conducted
in Zambia, 1,022 serodiscordant couples were followed prospectively over a 6-year period for transmission of HIV-1. In 162 serodiscordant couples in which the negative partner never seroconverted, the HIV-positive partner consistently had lower viral loads. The median level was 123,507 copies/ml compared to 51,310 copies/ml (p < .001; Fideli et al., 2001). Another prospective cohort study followed 648 serodiscordant couples in Madrid, Spain from 1989 to 2008; this study offers a time range from before the advent of HAART through its course of development. Seroprevalence in the HIV-1 negative partners declined over the time when therapy became available. From 1997 to 2008, the time frame when combined HAART became widely used, the percentage of partners who seroconverted declined from 11.0% to 2.7% (p < .001). In addition, in an observational cohort study conducted from 2004 to 2009 in Rakai, Uganda, the incidence of seroconversion of HIV negative went from 13.6% while the positive partner was not on antiretroviral therapy (ART) to zero while on ART (p = .008; Reynolds et al., 2011). These studies serve to further indicate a direct correlation between HIV-1 RNA levels and the likelihood of transmission; namely, that viral spread is uncommon and infrequent among persons with undetectable serum levels.

ART consistently reduces plasma HIV-1 RNA levels to undetectable levels within 6 months of initiation; therefore it has been effective in reducing the risk of acquisition and the rate of transmission. Castilla and colleagues (2005) assessed HIV transmission in 393 serodiscordant couples before, during, and after HAART from 1991 to 2003 and subsequently observed an 80% reduction in HIV transmission after initiation of therapy (odds ratio [OR] = 0.14, confidence interval [CI] = 0.03–0.66). There were no cases of transmission identified among HIV-positive partners receiving HAART (Castilla et al., 2005). In addition, Kayitenkore et al. (2006) published an abstract on transmission of HIV-1 in a cohort of 1,034 serodiscordant couples in Zambia and Rwanda. Only 2 of 42 individuals who seroconverted to HIV-1 had a partner on treatment (OR = 0.19; CI = 0.05–0.80; Cohen, Gay, Kashuba, Blower, & Paxton, 2007). Bunnell and associates (2006) coordinated a comparable prospective observational study in Uganda. They reported that in 454 couples, the risk of transmission decreased by 98% with the initiation of HAART (Cohen et al., 2007). In a smaller study involving Brazilian couples, there were six seroconversions (CI = 2.65–12.93) all of which occurred in the 52 patients not undergoing treatment; no seroconversions occurred among the 41 patients receiving treatment (CI = 4.81–22.45; Melo et al., 2008).

Previous research postulated that infected men had a greater chance of transmitting HIV-1 to their partners than infected women. These results reinforce the biomedical theory that women are at a greater risk of contracting to HIV-1 during sexual activity because a relatively large amount of infected semen is introduced into an extensive area of vulnerable mucosa. Comparatively, men are exposed to a smaller amount of vaginal fluid on a less abraded surface and for less time (Fideli et al., 2001). However, Fideli and his associates (2001) paradoxically reported that the rate of transmission increased in female to male (FTM) transmission as opposed to male to female (MTF) transmission. Their findings revealed the disease transmission risk ratio to be 2.5 in FTM transmission and only 1.8 in MTF transmission. These gender differences were further supported when serum viral levels were greater than or equal to 100,000 copies/ml. In this case, the risk ratio was 7.6 for FTM transmission versus 2.1 for MTF transmission. Thus, contrary to popular thought, Fideli showed that the interrelationship between larger viral load and transmission was more pronounced for FTM than MTF transmission (Fideli et al., 2001). The Fideli (2001) results are inconsistent with other findings, further research is necessary to make a definitive conclusion regarding the difference between MTF and FTM transmission.

Regardless of gender, however, based on the facts deduced from the aforementioned studies, HAART initiation and subsequent decreased viral loads are important in reducing HIV-1 transmission. Plasma viral levels do not always appear to be equivalent to genital secretion replications. Neely and colleagues (2007) examined a group of 290 women on HAART with low or undetectable levels (<500 copies/ml) of HIV-1 RNA. They found that 15% of the women were shedding virus from their cervix irrespective of their viral load. Therefore women with low or undetectable serum viral loads may still be at risk for transmitting the virus to their partners (Neely et al., 2007). It is important for every practitioner to be aware of these numbers and the complexity and ambiguity that still surrounds the process of seroconversion. Decreasing viral loads by way of HAART initiation remains one of the most effective ways to reduce the risk of transmission of HIV-1 in serodiscordant couples.

Summary

Given the information revealed by these studies, it is essential that affected persons in serodiscordant couples, such as the individuals in the two case reports mentioned previously, be initiated on HAART. The virulence of
HIV-1 depends on the level of contagion and the susceptibility of the HIV-negative sexual partner. ART works to reduce the amount of HIV-1 RNA in plasma and genital secretions. This indicates that ART may be associated with a profound reduction in the heterosexual transmission of HIV-1 (Castilla et al., 2005). The primary implication of research suggests the importance of providers prescribing HAART for their patients involved in serodiscordant relationships to reduce the incidence of HIV/AIDS.

The 2011 U.S. Department of Health and Human Services panel on antiretroviral guidelines for adults and adolescents recommends antiretroviral agents be initiated for HIV-1 infected patients with an AIDS-defining opportunistic infection or with a CD4 count <500 cells/mm³ (Department of Health and Human Services Panel on Antiretroviral Guidelines for Adults and Adolescents, 2011).

In the first case study, the patient was viremically stable. Her viral titers were relatively low and her CD4 count was in optimal range. Nevertheless, she was started on a regimen of emtricitabine/tenofovir (Truvada), ritonavir (Norvir), and atazanavir (Reyataz) to suppress her viral load. This regimen was effective; her viral load has dropped to undetectable levels. She has subsequently disclosed her status to her partner and he has tested negative.

The second case study patient was not viremically stable. It was crucial that she be started on effective treatment regardless of her partner’s status because of her suboptimal CD4 count and elevated viral titers. Although her relationship was a major barrier interfering with treatment adherence, after extensive counseling she disclosed her status to her partner and subsequently started a regimen of etravirine (Intelence), zidovudine (Retrovir), ritonavir (Norvir), and atazanavir (Reyataz). She currently reports 100% adherence to her medication and her partner has subsequently tested negative.

The benefits of HAART are twofold because it both prolongs survival and simultaneously reduces the risk of HIV transmission. Nevertheless, time-tested interventions of partner notification, consistent use of barrier protection, and partner testing should be employed with pharmaceutical treatment regimens to reduce HIV transmission. Controversy surrounds the use of preexposure prophylaxis on high-risk patients such as partners who are HIV negative in serodiscordant couples. There is potential for viral replication in the presence of monotherapy or dual therapy. This may allow for incomplete suppression and drug-resistant mutations and is therefore not routinely recommended for HIV-negative patients (van de Vijver & Boucher, 2010).

The use of HAART in serodiscordant couples should be strongly encouraged for the HIV-positive partner. Over the course of the past three decades, HIV has evolved from an “inherently untreatable” infectious agent to a chronic disease capable of being managed with approximately 30 antiretroviral medication options (Broder, 2010). ART has effectively reduced mortality while improving the quality of life and clinical outcomes for people living with HIV/AIDS. In addition, HAART used in conjunction with educational counseling should also be initiated to reduce the risk of HIV transmission among populations engaging in high-risk behavior, such as the HIV-positive partners in serodiscordant couples.

References


Correspondence regarding this article should be directed to Michelle Peters, DNP, FNP-BC, Columbia University School of Nursing, 617 W. 168th Street, New York, NY 10032. E-mail: mmp2136@columbia.edu
PRACTICE EVIDENCE

Noninvasive Positive Pressure Ventilation in COPD Exacerbation—A Brief Report

Louisa Chika Ikpeama, DNP, APRN, ACNP-BC
Michael E. DeBakey VA Medical Center in Houston, Texas

Optimizing medical management is recommended in the treatment of chronic obstructive pulmonary disease (COPD) exacerbations. When standard medical therapy alone is inadequate to relieve acute symptoms, ventilator support may be needed. Noninvasive positive pressure ventilation (NIPPV) is a device that provides ventilation support for select group of patients during COPD exacerbation based on criteria developed and supported from both randomized and nonrandomized control trials. NIPPV has been demonstrated to be of benefit in COPD exacerbation management, especially when used early before patient decompensation. This treatment option may be the difference between invasive endotracheal intubation and intensive care unit admission. For best outcomes, adhering to recommended and evidence-based care standards is very important when NIPPV is used.

Keywords: chronic obstructive pulmonary disease; chronic obstructive pulmonary disease exacerbations; acute respiratory failure; bilevel noninvasive ventilation; noninvasive positive pressure ventilation

Chronic obstructive pulmonary disease (COPD) is a partially reversible progressive disease characterized by airway obstruction and abnormal inflammatory changes that occur within the lung parenchyma (Anzueto, Sethi, & Martinez, 2007). It is the third leading cause of death in the United States (Adams, Cohen, & Hanania, 2012). COPD is the only disease with increase in death rate of more than 100% between 1970 and 2002 (Martinello, 2010). Despite recommendations from major health organizations as well as the advent of new and dual inhalation therapy, COPD exacerbations remain a major health burden in the United States and around the world. With the high prevalence, it continues to be associated with physical impairment, debility, reduced quality of life, exorbitant health care costs, and significant mortality. Even with decreasing numbers of new COPD diagnoses, there is severe progression of disease among patients with advanced stages of COPD, leading to consumption of largest portion of health care resources among all lung disorders because of excessive hospitalizations. Exacerbations of COPD result annually in more than 500,000 hospitalizations, and more than $18 billion in direct cost (Anzueto et al., 2007; Budweiser, Jorres, & Pfeifer, 2008).

COPD exacerbation describes a period in the disease process characterized by acute change in patients' baseline symptoms: increased dyspnea, cough, work of breathing, sputum production, and decreased oxygen saturation (Anzueto et al., 2007). Patients with exacerbations are frequently hospitalized because of respiratory distress that require close monitoring and acute care treatment. The goals of management include identification and amelioration of the cause of exacerbation, optimization of lung function by administering bronchodilators and other pharmacologic agents, assurance of adequate oxygenation and secretion clearance, averting the need for endotracheal intubation, and decreasing work of breathing (Stoller, 2011). When exacerbations result in acute respiratory failure (RF) because of hypercapnia, ventilation support may be required (Dial
Noninvasive positive pressure ventilation (NIPPV) is an alternative to the invasive ventilation that can provide adequate support for select group of patients and has been demonstrated in the literature to be effective in the management of hypercapnic RF without major risks associated with invasive ventilation (Gali & Goyal, 2003).

Effectiveness of NIPPV in the management of RF because of acute exacerbations of COPD was demonstrated in a systematic review of eight studies. There was clear benefit of NIPPV as adjuvant treatment to standard medical care in sample COPD exacerbation patients. There was reduction in mortality, a lower need for endotracheal intubation, a lower likelihood of treatment failure, greater improvements at 1 hr pH values, and greater reduction in respiratory rates in breaths per minute (Lightowler, Wedzicha, Elliott, & Ram, 2003). There was also documentation of fewer complications associated with treatment as well as shorter length of hospital stay. The conclusion was that NIPPV should be the first line intervention added to standard medical therapy in COPD-induced RF, and should be used early in care management before the onset of severe acidosis to reduce mortality and decrease treatment failure and subsequent endotracheal intubations.

Keenan and Mehta (2009) examined NIPPV for patients presenting with COPD exacerbation and acute RF. This extensive meta-analysis identified and reviewed 17 randomized control trials (RCTs) that compared the use of NIPPV to standard medical therapy in various settings. Nine of the studies in this subset of patients with COPD exacerbation demonstrated a lower failure rate with NIPPV versus standard therapy, and three studies reported lower hospital mortality. In this review, NIPPV demonstrated the greatest absolute reduction in treatment failure rate, intubation rate, and hospital mortality in patients with severe COPD exacerbations and documented some benefits for patients with milder COPD exacerbations, although not as strong as with severe illnesses. This review also recommended that NIPPV be considered as first-line therapy for patients who present with respiratory distress and acidosis.

NIPPV was also shown to improve hypercapnic encephalopathy. NIPPV-intervention studies that evaluated improvement of hypercapnic encephalopathy as additional outcome of NIPPV concluded that NIPPV be used for patients with mild hypercapnic encephalopathy, and may be attempted with caution, for patients with moderate encephalopathy. In a 5-year case-control study, Scala, Naldi, Archinucci, Coniglio, and Nava (2005) divided 153 COPD exacerbation patients into four groups with varying levels of consciousness (LOC). LOC was measured using the Kelly-Matthay (KM) score in which a score of 1 indicates normal consciousness (control subjects) and 6 is severely impaired LOC. The study showed that NIPPV significantly improved arterial blood gas (ABG) values within 1–2 hr of initiating therapy. There were differences in treatment failure based on the severity of encephalopathy as recorded on the KM scores (KM 1 = 15%; KM 2 = 25%; KM 3 = 30%; KM >3 = 45%) and 90-day mortality rate (KM 1 = 20%; KM 2 = 35%; KM 3 = 35%; KM >3 = 50%).

Improvement in impaired consciousness caused by hypercapnia was also demonstrated in a prospective case-control study by Zhu, Zhang, Zong, Xu, and Liang (2007). The 43 patients requiring NIPPV for acute RF caused by COPD exacerbation were divided into two groups according to severity of encephalopathy. Group A consisted of 22 patients with Glasgow Coma Scale (GCS) scores <10, and Group B had GCS scores ≥10. The groups were matched for age, sex, COPD course, tobacco use, and previous hospitalization. Despite the differences in LOC between the two groups, NIPPV’s success rate and hospital mortality were comparable in Groups A and B: 73% (16 out of 22) and 14% (3 out of 22) versus 68% (15 out of 22) and 14% (3 out of 21), respectively ($p = .05$). Group A, however, needed a higher pressure support and longer days on NIPPV. There was no difference in treatment failure between the groups. The study concluded that select COPD exacerbation patients with depressed LOC because of hypercapnia can be treated as effectively and safely with NIPPV compared with alert patients, and recommended that trials of NIPPV should be instituted in these patients with severe hypercapnic encephalopathy to reduce the need for endotracheal intubations.

Many guidelines developed by different entities for the management of patients with COPD exacerbation using NIPPV have attempted to pull together evidence from studies to assist providers optimize care (COPD Guideline Working Group of the South African Thoracic Society, 2004; Global Initiative for Chronic Obstructive Pulmonary Disease [GOLD], 2010; National Clinical Guideline Center for Acute and Chronic Conditions: National Institute for Health and Clinical Excellence [NICE], 2010; Royal College of Physicians [RCP], 2008; Sinuff & Keenan, 2004; University of Michigan Health System, 2010; Work Loss Data Institute, 2009). Two of the guidelines earlier appear more comprehensive in provision of clinical recommendations and algorithms for NIPPV implementation, titration, and weaning (RCP, 2008; Sinuff & Keenan, 2004). Both guidelines included information on patient selection, interface selection, location...
for use, application of the NIPPV, titration of pressures, duration of support, and weaning parameters. They both differentiated inclusion and exclusion criteria in determining patients who are appropriate for NIPPV and recognized that patients with inability to protect airway or manage secretions, facial trauma, vomiting, upper airway obstruction, confusion/agitation, bowel obstruction, untreated pneumothorax, severe comorbidity, and hemodynamic instability requiring pressor support are not candidates for NIPPV.

Both guidelines also recognized that certain patients benefit more from NIPPV than others, and established indications for the use of NIPPV to include COPD exacerbation patients not responding to maximal medical therapy, respiratory distress or respiratory rate (RR) > 24 breaths per minute, pH > 7.25 or < 7.35, and PaCO2 > 45 mmHg. Their recommendation for initial inspiratory positive airway pressure (IPAP) range is 10–14 and expiratory positive airway pressure (EPAP) is 4–8, with a back-up RR between 4 and 8. Oxygen titration should target saturation ≥ 92%. Clinical goals of NIPPV include optimization of minute ventilation (MV) and tidal volume (TV), reduction in RR, decrease in the use of accessory muscles of ventilation, increase in patient comfort, and improvement in respiratory acidosis and oxygenation (RCP, 2008; Sinuff & Keenan, 2004).

The RCP guideline (2008) was developed in Britain by a group comprising of the British Thoracic Society, Intensive Care Society, and the RCP, and used the Appraisal of Guidelines for Research and Evaluation (AGREE) collaboration tool in the development process. The guideline by Sinuff and Keenan (2004), who are two pulmonologist from McMaster University in Hamilton, Ontario, Canada, does not provide any information on the development process. Although recommendations from both guidelines, when used for management of NIPPV for COPD exacerbation patients, may save time for providers and translate to good outcomes, the levels of evidence upon which the recommendations are based were not very clear. Providers must therefore be astute and cautious when adopting guideline recommendations in their clinical practice because of lack of objectivity and transparency in many clinical practice guidelines’ (CPGs) development processes. Because of increasing lack of trust in CPGs, the Medicare Improvements for Patients and Providers Act of 2008 charged the Institute of Medicine (IOM) to study CPGs’ development process and offer insight into methods that will increase objectivity, consistency, and scientific validity (IOM, 2011).

The IOM (2011), in a landmark study, described characteristics of trustworthy CPGs based on eight standards of guideline development: The eight standards include establishment of transparency, management of conflict of interest, balanced and multidisciplinary guideline development group composition, clinical practice guideline-systematic review intersection, establishment of evidence foundations for rating strength of recommendations, articulation of recommendations in standardized format, external review to comprise a full spectrum of relevant stakeholders, and updating the guideline when new evidence suggests the need for modification. It is expected that agencies developing new guidelines or updating old ones will follow the new comprehensive standards laid out by IOM. This will make guideline evaluation easier and quickly identify those who do not meet standards for providers.

Implications to Practice/Conclusion
As providers manage hospitalized patients with COPD exacerbation using both medical and mechanical components of care, they must carefully use proven standards to optimize care to positively impact outcomes. These care standards may be from variable levels of evidence but should be objectively evaluated and chosen to suit individual patient requirements and profiles. It is important that when NIPPV is used for COPD exacerbation, ethical aspect of care is incorporated by providers to include principles of informed consent. Because NIPPV is considered a life support measure, it must be clearly explained to patients and families especially those who have clearly opted out of advanced life support measures. Determination and clarification of their understanding of life support may be helpful when care escalation includes NIPPV. Updating do not resuscitate (DNR) orders to reflect preference or acceptance of NIPPV may be necessary (Sinuff & Keenan, 2004). During this period of emphasis on responsible health care spending, efforts must focus on the effectiveness and efficiency of care.

COPD is a major health burden, and practitioners must strive to manage and stabilize disease to prevent costly exacerbations. During times of unavoidable exacerbations, optimization of medical management and addition of NIPPV may be warranted, and providers must be ready to introduce NIPPV therapy timely when appropriate and use proven evidence to increase chances of positive outcomes. The success of NIPPV minimizes or reduces the period of illness, decreases mortality, decreases hospital length of stay, decreases work of breathing, normalizes ABG values, and averts escalation of care that may include invasive endotracheal
intubation. Expertise and careful attention to details are required when treatment option includes NIPPV to yield maximum benefits. Practitioners who use NIPPV option in COPD exacerbation management must recognize it as unique medical equipment and follow care standards. To assist providers who use NIPPV for COPD exacerbation management, institutions may consider developing and implementing a facility-approved protocol that incorporates evidence-based practice guideline criteria to provide guidance for the day-to-day management of this patient population. This may be a way to maximize outcomes and reduce variations in care provided at the bedside.

References


Correspondence regarding this article should be directed to Louisa Chika Ikpeama, DNP, APRN, ACNP-BC, Michael E. DeBakey VA Medical Center in Houston, 2002 Holcombe Boulevard, Houston, TX 77030. E-mail: louisa.ikpeama@va.gov
The Relationship Between Health Literacy and Cognitive Ability in Older Adults

Mary J. Chappel, DNP, FNP-BC
Cheryl Riley-Doucet, PhD, RN
Oakland University

The purpose of this pilot correlational study was to determine the association of health literacy with cognitive ability and level of education. A cross-sectional design was used with a convenience sample of 33 English-speaking adults (\(M = 78\) years). Data was collected using the Short Test of Functional Health Literacy in Adults (S-TOFHLA) and the Mini–Mental State Examination (MMSE) and analyzed using Pearson’s correlation coefficient and bivariate correlation analysis. A significant relationship was found between health literacy and education level, but the relationship between health literacy and MMSE scores and age were not significant. It is likely that the low \(N\) and decrease in subject variability influenced this pilot study’s overall findings, nevertheless the significant relationship between health literacy and education level is compelling to health care providers to provide health information at a level of understanding appropriate to each individual.

Keywords: health literacy; cognitive ability; education; older adults

Medical misunderstanding is a serious and growing problem within the field of geriatrics. Older individuals with limited health literacy have less health knowledge, worse self-management skills, lower use of preventive services, and higher hospitalization rates (Wolf, Gazmararian, & Baker, 2007). The 2003 National Adult Health Literacy Survey (NAHLS; Institute of Medicine, 2004) reports that 87% of all adults have moderate to extreme difficulty completing medical intake forms, comparing drug plans, and following prescription instructions or preprocedure directions. According to NAHLS, only 12% of adults have adequate health literacy, implying that 9 out of 10 adults may lack skills needed to appropriately manage their health. Only 3% of adults older than the age of 65 years were measured as proficient in health literacy, putting them at even greater risk to experience negative effects on their health (Kutner, Greenberg, Jin, Paulsen, & White, 2006). The purpose of this pilot study was to determine the association of health literacy with cognitive ability and level of education in individuals 65 years and older.

Significance

Inadequate health literacy has been described in literature since 1974, but it has only been within the last decade that researchers have identified the problems associated with its relationship to health outcomes (Speros, 2005). Wolf, Gazmararian, and Baker (2005) found that older adults with inadequate health literacy have poorer physical and mental health and older adults have an especially high prevalence of low literacy (Baker, Gazmararian, Sudano, & Patterson, 2000; Kirsch, Jungeblut, Jenkins, & Kolstad, 2002). Polypharmacy, measured by an individual taking seven or more medications, is a common phenomenon...
in older adults and combining multiple drugs with low health literacy can lead to errors in medication administration, increased negative side effects, or failure to take prescribed medications because of lack of understanding or confusion about directions (Davis et al., 2006).

**Literature Review**

*Health literacy* is defined by the Institute of Medicine (2004) as “the degree to which individuals have the capacity to obtain, process, understand, and act upon health information and services needed to make appropriate health decisions.” Reading and numeracy skills, capacity for comprehension of unfamiliar information, appropriate health care decision making, cultural congruence, and the ability to negotiate and to navigate through the health care system are important attributes needed to optimize health literacy (Barrett & Puryear, 2006; Korschun, 1999; Nielsen-Bohlman, Panzer, & Kindig, 2004; Speros, 2005).

**The Impact of Low Health Literacy on Health Outcomes**

Individuals with low levels of health literacy have less health knowledge, worse self-management of chronic disease, lower use of preventive services, worse health, and increased risk of hospital admission (Baker, Parker, Williams, & Clark, 1998; Powers, Olsen, Oddone, Thorpe, & Bosworth, 2008; Williams, Baker, Honig, Lee, & Nowlan, 1998; Williams, Baker, Parker, & Nurss, 1998). Inadequate health literacy is independently associated with worse glycemic control and higher rates of retinopathy and depression with higher rates of mortality in older adult populations (Baker et al., 2007; Baker, Wolf, Feinglass, & Thompson, 2008; Dewalt, Berkman, Sheridan, Lohr, & Pignone, 2004; Gazmararian, Baker, Parker, & Blazer, 2000; Schillinger et al., 2002; Sudore et al., 2006; Weiss, Hart, McGee, & D'Estelle, 1992). A review of literature using the Short Test of Functional Health Literacy in Adults (S-TOFHLA) clearly indicates a relationship between low reading skills and poor health (Agency for Healthcare Research and Quality, 2000).

**Health Literacy, MMSE, and Age**

Baker et al. (2002) determined a relationship between Mini-Mental State Examination (MMSE) performance and reading comprehension, using the S-TOFHLA in individuals 65 years and older. S-TOFHLA scores were significantly associated with all of the items on the MMSE. Limited health literacy was not independently associated with health risk behaviors in individuals 65 years of age and older (Wolf et al., 2007). Baker et al. (2000) demonstrated that for every year of increase in age (mean 73.1 ± 6.3), S-TOFHLA scores declined 1.4 points indicating that functional health literacy was markedly lower among older age groups. Practitioners who rely on the MMSE should be aware that patients may score in the demented range because they cannot read well enough to accurately complete the test (Mayeaux et al., 1995).

**Conceptual Framework**

Orem's self-care model was used as a framework for this study because it focuses on assisting an individual to improve care of the self (Gast & Montgomery, 2005). The optimal self-care goal for a health literate individual is the ability to maintain health and well-being by having capacity to obtain, process, understand, and act upon health information and services needed to make appropriate health decisions.

**Methods**

This was a pilot study with a cross-sectional, nonprobability design method using two quantitative scales of measurement. Data was collected from the total scores of the MMSE (Baker et al., 2002; Folstein, Folstein, & McHugh, 1975) and the S-TOFHLA (Parker, Baker, Williams, & Nurss, 1995). The relationship between the dependent variable, STOFHLA score, and the independent variables of MMSE score, age, and education level was determined by bivariate correlation analysis.

The specific aim of this study was to examine the relationship between MMSE performance ratings and S-TOFHLA scores in individuals 65 years and older by answering the following research questions: (a) Are MMSE performance ratings related to S-TOFHLA scores in individuals 65 years old and older? (b) How are demographic characteristics such as age and level of education related to S-TOFHLA scores in individuals 65 years old and older?

**Measurement**

Cognitive ability was measured by total scores on the MMSE. Mayeaux et al. (1995) reports the MMSE as
having reliability of 87% and validity of 82%. Score results of 24–30 indicate no cognitive impairment, results of 18–23 indicate mild cognitive impairment, and results of 0–17 indicate severe cognitive impairment (Folstein et al., 1975).

Health literacy was measured by the S-TOFHLA—a valid and reliable indicator of patient’s ability to read and comprehend health-related materials with a Cronbach’s alpha of 0.98 and a validity of 0.91 (Wallace, 2006). Reading comprehension was measured by having individuals read two passages at grade levels 4.3 and 10.4 from which words have been deleted.

Sample

A convenience sample of 33 subjects was used for this study. A target population of older individuals in Northern Michigan was randomly selected from a hospital-owned family practice clinic database. Inclusion criteria required individuals to be 65 years of age or older, English speaking, have ability to see 12 point font or greater (newspaper print), and display no signs of moderate to severe dementia on initial contact. Of those individuals responding, 97% were White and 87% described their health as being good to excellent, even though 81% admitted to having one or more chronic disease (heart disease, stroke, cancer, hypertension, diabetes, or depression).

Procedures

Individuals who replied positively to a letter of invitation were contacted and screened for eligibility. Eligibility requirements included a willingness to participate in the study, be 65 years or older, have the ability to speak English, and the self-reported ability to see typical newspaper print. The ability to follow simple commands and to answer questions appropriately determined the lack of moderate to severe dementia.

Data Analysis

Once data collection was completed, the data was coded and entered into an SPSS statistical package using pseudo-identifiers. Pearson’s correlation coefficient and bivariate correlation analysis was used to determine the association between the variables of total MMSE scores, age, and education across S-TOFHLA scores.

Results

There were 33 individuals surveyed with a mean age of 78 years. Most participants reported having a high school education or greater. S-TOFHLA scores indicate that all of the respondents were functioning at an adequate level of functional health literacy. MMSE scores show that most participants demonstrated no cognitive impairment. Only one individual scored in the mild cognitive impairment range (see Table 1).

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Note. S-TOFHLA = short test of functional health literacy in adults; MMSE = mini-mental state examination. aMissing data; reported in valid percentage.
A significant relationship of .03 ($p < .05$; see Table 2) was found between health literacy and education level, but the relationship between health literacy and MMSE scores and age was not significant. The significant relationship between health literacy and education supports previous research that people with less education have an especially high prevalence of low literacy (Mayeaux et al., 1995). MMSE performance ratings were not related to S-TOFHLA scores even though previous studies have demonstrated relationship (Baker et al., 2002; Baker et al., 2008; Mayeaux et al., 1995).

MMSE scores were negatively correlated to age at .006 ($p < .01$). This study supports previous findings that indicate functional health literacy and cognition are negatively associated with age (Baker et al., 2000) implying that as age increases, cognition and health literacy decreases.

It is likely that the low $N$ and decrease in subject variability influenced this study’s overall findings of 100% of the population studied having adequate health literacy. A larger sample with more variability would possibly have demonstrated a significant relationship between MMSE and S-TOFHLA scores and be supportive of previous research.

### Discussion

Perhaps significant to the study’s results was exposure to nurse practitioner (NP) care. All subjects of the study would have likely been seen on occasion or had their health care managed by a family NP. Could patient education provided by proactive NPs have promoted active patient involvement resulting in better overall understanding and adherence to medication regimens with improved health status? This may be a demonstration of how NPs strengthen health care processes and significantly impact health outcomes and is deserving of further investigation.

It has been previously suggested that continued involvement in intellectual and social activities can slow declines in cognitive function, which may preserve reading ability. Further studies are needed to determine if reading ability declines with age in the absence of dementing illness and the impact that may have on the health of the older adult (Baker et al., 2000).

Overcoming the barriers of low education and limited health literacy can be assisted by simplifying written materials, using plain language communication, using the “teach-back” method (having patients repeat back in their own words the information given to confirm understanding), and “teach to goal” strategies in which comprehension is formally assessed and information is repeated until understanding is achieved (Baker et al., 2008).

Even though there is extensive literature by other disciplines to support previous findings, the concept of health literacy is not widely understood. Nursing research should continue to add to the knowledge base and bring needed attention to how inadequate health literacy negatively impacts health outcomes. Operationalizing Orem’s nursing theory to practice can improve communication, client education, and client support in the ambulatory setting (see Figure 1).

There were several limitations to this study including the low number of those surveyed and the study sample itself, a cross-section of one family practice group in a culturally homogenous area. A convenience sampling was used and may have led to recruitment bias. There may also have been overrepresentation of higher functioning seniors because of the study examining only those who are still enjoying relative good health and independence. Further studies in other samples and geographical areas must be carried out before these results can be broadly generalized.

### Summary

Many older persons have limited ability to manage their own health and navigate the health care system. Lack of understanding regarding health instructions places all clients, especially the older adult, at risk for excessive hospitalizations and poor health outcomes. Individualizing how health information is provided to older adults and modifying written health care information to appropriate reading levels can influence choices for healthy behaviors and improve care for at-risk seniors. The significant relationship demonstrated in this study between functional health literacy and education level is compelling to all

<table>
<thead>
<tr>
<th>TABLE 2. Correlation Analysis ($N = 33$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-TOFH LA</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>S-TOFH LA</td>
</tr>
<tr>
<td>MMSE</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Education</td>
</tr>
</tbody>
</table>

*Note: S-TOFH LA = short test of functional health literacy in adults; MMSE = mini-mental state examination.

*p < .05. **p < .01.
health care providers to provide health information at a level of understanding appropriate to each individual.

References


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**Figure 1.** Orem’s model of self-care.
The Relationship Between Health Literacy and Cognitive Ability

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Correspondence regarding this article should be directed to Mary J. Chappel, DNP, Oakland University, 3200 Havana Place, Dulles, VA 20189. E-mail: crbi44@gmail.com or chappelmj@state.gov
The ordering and management of diagnostic test results is an important aspect of the plan of care in the primary care setting. The process involves a series of steps beginning with ordering the test and appropriate communication to ensure patient follow-up. Patient–provider communication and documentation is essential to achieve high-quality health care outcomes. The failure to communicate diagnostic test results and develop follow-up plans is an important patient safety issue. This quality improvement project examined management of diagnostic tests in a primary care practice for the purpose of improving processes of care and outcomes. The project focused on current practices, patient satisfaction, and patients’ preference relating to laboratory result communication.

Keywords: diagnostic test results; primary care; patient safety; patient–provider communication

This quality improvement project examined the process of diagnostic test result notification in a primary care practice, patient satisfaction with current practices, and patient preferences for receiving test results. Health care providers order laboratory and imaging studies as part of the diagnostic process to monitor patients’ health status. The order and management of the test results in the primary care setting involves a series of steps beginning with ordering the test through acting on the results in collaboration with the patient. Multiple points in this process can be compromised, resulting in delayed care and adverse effects on patient safety (Hickner et al., 2008). Accurate and timely communication of test results is essential for optimal patient outcomes and satisfaction.

Diagnostic test notification practices differ in inpatient and outpatient settings and vary among institutions and providers (Hickner et al., 2005). Some providers call patients with abnormal results or have a nurse or medical assistant provide the information (Elder & Barney, 2012). Other clinics automatically schedule patients for follow-up appointments to review certain test results (Elder & Barney, 2012). Boohaker, Ward, Uman, and McCarthy (1996) surveyed 262 physicians and found that 17%–32% had no reliable method of ensuring that test results were received by patients, one-third did not always notify patients of abnormal test results, and physicians often depended on follow-up visits to inform patients. Common reasons providers reported for not notifying patients of abnormal test results included trivial results, follow-up was expected to be in clinic, patients were not available, forgetfulness, and lack of time by provider.

The use of electronic medical records (EMR) in primary care is rapidly expanding and is expected to increase efficiency, decrease cost, and improve the quality of care (Edsall & Adler, 2008). Settings that use the EMR to manage results are more likely to demonstrate clinician interpretation, documentation of patient notification, and follow-up plan (Elder, McEwen, Flach, Gallimore, & Pallerla, 2010). In some situations, standardization of alert-management tools in the EMR improved timely follow-up of abnormal diagnostic test results (Hysong et al., 2010). However, some clinical settings that used an EMR with automated test result notification did not demonstrate timely test result follow-up (Singh et al., 2010).
Failures or delays in diagnosis constitute the fastest growing area of malpractice cases, with about one-fourth attributable to avoidable failures related to follow-up communication (Phelps et al., 2004). Studies examining patient notification of test results have found that most patients want to be notified of all test results (Baldwin, Quintela, Duclos, Staton, & Pace, 2005; Boohaker et al., 1996; Meza & Webster, 2000) and prefer different notification methods including U.S. mail (Elder & Barney, 2012; Grimes, Reis, Budati, Gupta, & Forjuoh, 2009), electronic mail (Grayson, Fair Hurst, & Ministry, 2010), or direct phone contact (Baldwin et al., 2005; Elder & Barney, 2012; Grimes et al., 2009). Despite this finding, most patients do not typically discuss their preference for receiving test results (Baldwin et al., 2005). The Agency for Healthcare Research and Quality (AHRQ, 2004) has issued “Five Steps to Safer Healthcare,” a safety tip fact sheet for patients. Tip number 3 encourages patients to ask health care providers when and how they will receive test results and not to assume results are normal if not communicated (AHQR, 2004). Despite the use of an EMR to facilitate communication of test results, follow-up remains a significant challenge.

**Quality Improvement Project**

This quality improvement project was conducted in an urban, adult primary care practice. The project was initiated because of the volume of patient test results managed in the practice, desire to provide best practices, recent change from paper to electronic health record, and concern about patient safety if communication was delayed. Institutional review board approval was obtained for the project. Data was collected using retrospective chart reviews and surveys. Participation was voluntary and responses were anonymous.

**Retrospective Review of Patient Satisfaction Surveys Regarding Diagnostic Testing**

Six years of data from patient satisfaction surveys that included feedback on diagnostic test communication were reviewed. According to patient reports, information was provided regarding rationale for testing, method, and time of test result notification. The results are illustrated in Table 1.

**Clinician Perception of Current Practices**

A 20-question electronic survey was sent to five prescribing clinicians. Each respondent had greater than 5 years’ experience in the role and had worked in the practice setting for more than 6 months. Clinicians consistently reported they explained the reason for the ordered test, anticipated time for communicating results, and method of test result notification. They reported documenting communication of normal and abnormal test results in the EMR 100% of the time.

Telephone was the preferred method for communication of abnormal test results. Four of five clinicians reported they contacted the patient within 24 hr of receiving abnormal test results. When results were normal, clinicians preferred calling the patient themselves, followed by communication by telephone call from the medical assistant or a clinician-generated letter. Discussion of normal results with patients at a follow-up appointment was also considered a viable but less preferred option. Sixty percent of respondents reported communicating normal test results within 72 hr of result receipt and 40% reported notifying the patient within 7 days.

Clinicians expressed various opinions regarding the role of follow-up when patients did not have ordered test performed. The type of follow-up when ordered tests were not completed by patients depended on the significance of the test in relation to the clinical presentation. Twenty percent of clinicians sent follow-up reminders through phone call and 60% utilized letters. Twenty percent of the clinicians contacted patients once, whereas 60% made maximum of two attempts.

At the time this survey was conducted, the practice had converted to an EMR after many years of using paper records. Therefore, questions addressed this aspect of clinical practice. Fewer than half of the clinicians relied on the EMR to monitor completion of ordered tests. Twenty percent of clinicians believed they were using the EMR to the fullest in test result reporting, 40% reported

<table>
<thead>
<tr>
<th>Patient Satisfaction Survey Indicators</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents agreed an understandable explanation was provided for reason test was ordered.</td>
<td>N = 61</td>
<td>N = 40</td>
<td>N = 21</td>
<td>N = 30</td>
<td>N = 30</td>
<td>N = 15</td>
</tr>
<tr>
<td>100%</td>
<td>98%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
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<td></td>
</tr>
<tr>
<td>Respondents agreed they were informed of method for result communication.</td>
<td>N = 58</td>
<td>N = 38</td>
<td>N = 20</td>
<td>N = 30</td>
<td>N = 30</td>
<td>N = 15</td>
</tr>
<tr>
<td>97%</td>
<td>87%</td>
<td>95%</td>
<td>100%</td>
<td>88%</td>
<td>87%</td>
<td></td>
</tr>
<tr>
<td>Respondents agreed they were informed when results would be received.</td>
<td>N = 58</td>
<td>N = 37</td>
<td>N = 17</td>
<td>N = 30</td>
<td>N = 26</td>
<td>N = 15</td>
</tr>
<tr>
<td>90%</td>
<td>84%</td>
<td>81%</td>
<td>100%</td>
<td>76%</td>
<td>80%</td>
<td></td>
</tr>
</tbody>
</table>
Sullivan and Smolowitz

not using the EMR to its fullest, and 40% were unsure if they were using the EMR to the maximum potential.

Evaluation of Current Practices

A chart review was conducted to evaluate documentation practices for presence of ordered and resulted tests, patient notification of test results, follow-up on tests ordered but not performed, patient notification about an incomplete test, and methods of communication of results. There were 104 patient records randomly retrieved for a 1-month period. Seventy-five patients had a diagnostic test ordered. The results of the chart review are presented in Figure 1 and Table 2.

Patient Preferences for Test Result Communication

The last component of the quality improvement project evaluated current perceptions and preferences of patients regarding the diagnostic test management process. A survey was mailed to randomly selected patients in the practice identified as having laboratory tests ordered and completed, regarding their preferred method for receiving test results. There was a 23% return rate for the 71 surveys. Respondents were offered six choices that they ranked in preferential order. The choices were phone call from clinician, letter through U.S. mail, phone call from office staff, a follow-up office visit with clinician, notification through electronic mail, access via a web-based portal, and other. Patients preferred to be notified of test results by telephone call from the clinician, followed by a letter in the U.S. mail, and then by electronic mail.

Discussion

The findings of this quality improvement project concur with current literature, which finds variation in the management of test results. Clinicians most commonly reported the method of a telephone call for reporting normal and abnormal results followed by the U.S. mail. Lesser used methods include office visits and notification by other office staff. This survey showed the clinicians were consistent in their practices of informing patients of both normal and abnormal test results, which is not a finding that is readily present in the current research but is recognized as important for patients (Baldwin et al., 2005; Boohaker et al., 1996; Meza & Webster, 2000). Although the clinicians were in agreement regarding lack of clarity of existing guidelines related to the EMR, there was consistency in their practices of always providing explanations to patients regarding the ordered test and informing about the method and time frame of communication of test results. This standardization of practice is suggestive of the presence of an informal guideline.

As suggested by the clinician survey and the literature, follow-up of incomplete tests can be dependent on the clinical significance of the ordered test (Boohaker et al., 1996). In the clinician survey, 80% of respondents made at least one attempt to notify the patient of outstanding

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**Figure 1.** Patients with ordered diagnostic tests.

**TABLE 2.** Clinician Method of Patient Notification of Completed or Incomplete Diagnostic Tests N = 75

<table>
<thead>
<tr>
<th>Communication Method for Completed and Incomplete Tests</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter</td>
<td>44 (59)</td>
</tr>
<tr>
<td>Telephone call</td>
<td>20 (27)</td>
</tr>
<tr>
<td>Combination of letter and telephone call</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Follow-up office visit</td>
<td>3 (4)</td>
</tr>
<tr>
<td>Communication not documented</td>
<td>6 (8)</td>
</tr>
</tbody>
</table>
tests, but there was variation in the notification method used because some clinicians used U.S. mail or phone call. Although the survey did not indicate the type of test that was ordered, the high percentage of follow-up by clinicians of incomplete tests demonstrates recognition as this being an important part of practice.

There is no available literature evaluating what is considered timely test notification except that timeliness is a patient preference (Hickner et al., 2005). The results of this survey indicate greater urgency for the clinicians in reporting abnormal test results within 24 hr of receipt as compared to the reporting of normal test results within 72 hr of receipt. This behavior can be representative of the recognition that prompt follow-up of abnormal test results can contribute to good patient outcomes and improved quality of care.

Another key point in the management of test results is the role of the EMR. The EMR shows great potential to assist health care providers in the areas of result interpretation, patient notification of test results, and documentation of the follow-up plan; however, there must be an understanding of use (Elder et al., 2010). The clinician survey found lack of clinician confidence in using the EMR. Increased familiarity with the functions available for test results reporting in the EMR and increased use of these features could add standardization, efficiency, and confidence in the test results management process.

Implications for Practice

The quality improvement study shows patients are being informed of abnormal and normal test results and reminded to follow up on incomplete tests. The methods most often used for communication are telephone call and U.S. mail, which are the top two most preferred methods by patients. This study resulted in the primary care practice revising guidelines on test result reporting and addressing methods of result communication that are both efficient for the provider and a preference for patients while using an EMR. Increased familiarity of providers and adaptation of the EMR functions into practice can help with the efficiency of the test result management process.

References


Correspondence regarding this article should be directed to Caroline Sullivan, MS, ANP-BC, Columbia University School of Nursing, 630 West 168th Street, Office 269, New York, NY 10032. E-mail: cs2754@columbia.edu
Adolescent obesity and obesity-related conditions have risen at alarming rates in the United States, positioning childhood obesity as a major public health issue. The consequences of adolescent obesity are far-reaching and often include medical, psychosocial, emotional, and economic burdens. Traditional interventions targeted at diet and behavior modification are largely ineffective in reducing adolescent adiposity. Bariatric surgery, therefore, is gaining recognition as a means to significant and sustained weight loss in the teenage population. Given the innovative nature of this intervention and the lack of robust evidence to support its safety and efficacy in this population, few procedures are being performed on pediatric patients. Surgical weight loss in young patients with severe obesity poses a staid ethical burden to all involved. This article addresses the ethical issues of beneficence and nonmaleficence as they apply to adolescent bariatric surgery. Bariatric surgery for the treatment of severe adolescent obesity is an ethical and effective approach when performed discriminately in centers that can provide expert interprofessional support.

Keywords: adolescent; bariatric surgery; ethics; obesity

The prevalence of adolescent obesity has nearly tripled over the past three decades in the United States. In 2007, an estimated 18.1% of U.S. adolescents had a body mass index (BMI; calculated as weight in kilograms divided by height in meters squared) at or above the 95th percentile for age and sex (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). The medical, psychosocial and emotional consequences of adolescent obesity—coupled with prevalence, societal stigma, and economic impact—position this disease as the most imperative nutritional disorder among adolescents today. As BMI increases, so does the incidence of comorbid conditions such as type 2 diabetes, hypertension, sleep apnea, lipid disturbances, and cardiovascular disease (Deckelbaum, 2001). Obese children have been shown to have a higher prevalence of insulin resistance and type 2 diabetes; new cases of type 2 diabetes in 10- to 19-year-olds are estimated at 7.2 per 100,000 per year (Ehtisham & Barrett, 2004; Rocchini, 2002). Adolescents who are obese are more likely to have serious cardiovascular risk factors (Becque, Katch, Rocchini, Marks, & Moorehead, 1988) and more than half meet criteria for metabolic syndrome (Weiss et al., 2004). Furthermore, adolescents who are obese are at increased risk for these comorbid conditions to progress to life-threatening illnesses as adults because most adolescents who are obese will become obese adults (Parsons, Power, Logan, & Summerbell, 1999). In addition, adolescents who suffer with obesity are more likely to be socially isolated (Strauss & Pollack, 2003) and have a reduction in quality of life (Schwimmer, Burwinkle, & Varni, 2003).

Although conservative measures at weight reduction remain the mainstay for the treatment of adolescent obesity, these traditional approaches often yield disappointing results. The standard approach to weight management using diet and behavior modification has been shown to have only limited efficacy in adolescents with severe obesity (BMI ≥ 40 kg/m²; Levine, Ringham, Kalarchian, Wisniewski, & Marcus, 2001). Studies of interventions and strategies to reduce obesity in children and adolescents...
suggest that current programs may lead to improvements in outcomes but only in the short term (Flynn et al., 2006; Oude Luttikhuis et al., 2009). In the absence of an alternate means to significant and sustained weight loss, bariatric surgery is gaining recognition as a viable treatment option for the teenager who is severely obese.

**Bariatric Surgery in Adolescents**

Little is known about the long-term effects of bariatric surgery on children and adolescents, and thus it must be considered an innovative treatment in this population. An innovative treatment is any newly introduced treatment with unproven efficacy and side-effect profile, which is being used in the best interests of the patient, often on an experimental and/or compassionate basis (Brierley & Larcher, 2009).

Although bariatric surgery in adolescents was first reported nearly three decades ago (Greenstein & Rabner, 1995), it was not until the early 2000s that it gained widespread use (Kelleher, Merrill, Cottrell, Nadler, & Burd, 2013). In the United States, between 2000 and 2003, the rate of inpatient bariatric procedures increased from 0.8 to 2.3 per 100,000 and did not change significantly in 2006 and 2009, remaining steady at approximately 1,000 cases annually, with Roux-en-Y gastric bypass (RNYGB) being the most commonly performed procedure (Kelleher et al., 2013).

Bariatric surgery has been well documented as a safe and effective intervention in the adult population. A Cochrane review assessed procedures performed in adults and concluded that surgical intervention in adults who are obese results in greater weight loss and reduction of comorbidities than conventional treatment (Colquitt, Picot, Loveman, & Clegg, 2009). A recent prospective, multicenter observational study found 30-day mortality and morbidity to be low following bariatric surgery. The rate of death among patients who underwent RNYGB or laparoscopic adjustable gastric banding (LAGB) was 0.3% and morbidity, reported as at least one major adverse event, occurred in 4.3% of the patients (Flum et al., 2009).

Studies demonstrating the safety and efficacy of bariatric surgery in adolescents are limited. A systematic review and meta-analysis examined 18 unique studies of 641 surgical procedures performed between 1978 and 2006 for pediatric obesity (Treadwell, Sun, & Schoelles, 2008). The most commonly performed, LAGB, accounted for most of the procedures (352), followed by RNYGB (131), vertical banded gastroplasty (71), biliopancreatic diversion (BPD; 68), and banded bypass (19). Outcomes measured were reduction in BMI, comorbidity resolution and complications. The LAGB procedures resulted in a decrease in BMI of 10.6–13.7 units: LAGB yielded a reduction of 17.8–22.3 BMI units. Because of the very low quality of the remaining studies, change in BMI for other procedures could not be determined. Reports of comorbidity resolution were sparse, but it appeared that surgery was effective at improving or resolving some medical conditions such as diabetes, hypertension, and sleep apnea. The most common complications following LAGB were pouch enlargement, band slippage, band erosion, and iron deficiencies. The reoperation rate in this group was 7.9%. More serious and even potentially life-threatening complications were seen following RNYGB. These included pulmonary embolism, major wound infection, postoperative bleeding, and severe protein–calorie malnutrition. Reoperation data following RNYGB was not calculated because of inconsistencies in reporting. A single study of BPD reported a reoperation rate of 28% (19 reoperations performed on 14 of the 68 patients). Mortality data showed no deaths following LAGB, and no in-hospital deaths following GB, but there were four deaths ranging from 9 months to 6 years postoperatively, one of which appeared to be directly related to the bariatric procedure. Three deaths were reported following BPD; the causes were protein malnutrition, pulmonary edema, and acute necrotizing pancreatitis. None of these studies reported any data on the impact of surgery on growth and development.

Nguyen et al. (2011) reported on outcomes in 649 adolescents who underwent bariatric surgery at 63 U.S. academic medical centers. Comparisons were made between two time periods: 2002–2006 and 2007–2009. There were no deaths reported during either time interval; rates of in-hospital morbidity following laparoscopic RNYGB decreased from 4.3% to 2.0%, whereas they increased from 0.0% to 1.2% in LAGB patients.

A single randomized controlled trial of LAGB in adolescents who are severely obese was identified in the literature. O’Brien et al. (2010) randomized 50 adolescents between 14 and 18 years with BMI > 35 kg/m² to either medical or surgical intervention (LAGB) and followed them for 24 months. The medical intervention arm involved individualized diet plans, structured exercise, and behavior modification. Eighty-four percent of the LAGB group lost >50% of their excess weight as compared to 12% in the lifestyle group. During the study, there were several hospitalizations reported; one admission in the surgical group for exacerbation of depression, one patient in the lifestyle group was admitted eight times, and was eventually diagnosed with bipolar disorder and benign intracranial hypertension. Four pregnancies were reported (two in each group): one terminated spontaneously and one electively, and the other two delivered healthy infants. The reoperation rate for
LAGB patients was 28%. In another study of 115 adolescent patients who underwent LAGB, Zitsman, Digiorgi, Marr, Witt, and Bessler (2011) compared outcomes to case-matched adults who had LAGB. Similar weight loss and improvements in overall health were seen in both groups. There were no deaths in either group; rate of reoperation in both groups was approximately 9%.

Nadler, Barefoot, and Qureshi (2012) reported on a small series of adolescents who had undergone laparoscopic sleeve gastrectomy (LSG). Postoperative complications included one case of pancreatitis at 14 months after surgery and two hospital admissions for postviral gastroparesis. There were no reoperations or deaths in this series. Percentage excess weight loss (EWL) at 1 year was reported to be approximately 40.0. In a larger study, 108 obese children and adolescents aged 5–21 years who underwent LSG were followed and found to have 62.3% EWL at 24 months with no deaths, and one readmission for suspected staple line leak for which the patient responded to nonsurgical management. Improvement or resolution of comorbidities was demonstrated in ≥70% of the patients (Alqahtani, Antonisamy, Alamri, Elahmedi, & Zimmerman, 2012).

It should be noted that, currently, there are no gastric bands that have been approved by the U.S. Food and Drug Administration (FDA) for use in persons younger than the age of 18 years, therefore, any cases of LAGB that are being performed in the United States are either being performed “off-label” at the discretion of the surgeon or under an FDA-approved clinical trial (Holterman et al., 2010). Twelve-month follow-up of 20 patients enrolled in a 5-year prospective longitudinal trial for the safety and efficacy of LAGB using an FDA institutional device exemption has been reported (Holterman et al., 2010). Mean change in BMI units at 12 months was −6.6 ± 3.0, with sustained resolution of hypertension in all patients, along with improvement in lipid abnormalities and quality of life. Twenty-five percent of the participants in this trial required reoperation.

The Ethical Dilemma of Bariatric Surgery in Adolescents

The Argument Against: Nonmaleficence

As clinicians, we have a fundamental obligation to refrain from actions that cause harm to our patients. Beauchamp and Childress (2009) describe the ethical principle of nonmaleficence as not only an obligation not to inflict harm but also an obligation not to impose any risks of harm. Adolescents are among those considered to be a vulnerable population and are felt to be incapable of protecting their own interests because of immaturity, physical or psychological debilitation, or the like (Beauchamp & Childress, 2009). Adolescents who are obese are a particularly vulnerable population in that the societal pressures to be thin, coupled with the psychosocial burdens of “fatness,” place this patient population in an exceptionally vicarious situation. When accepted and proven approaches are failing an adolescent who is morbidly obese and bariatric surgery offers the promise of a healthier weight and, more importantly, relief of comorbidities, it may be argued that there is a moral obligation to provide surgical intervention for the patient. But do we perform these procedures in an effort to rescue, despite the fact that there is potential for serious complications both during and after surgery? Do we offer surgical intervention when we have no substantial body of evidence for long-term safety and no data on the impact of surgery on growth or development?

It has been demonstrated that compliance with postoperative advice is imperative for ensuring optimal outcomes aimed at inducing weight loss and improving health (Shen et al., 2004; Sivagnanam & Rhodes, 2010). Research suggests that adherence to postoperative guidelines are challenging for adult bariatric patients and adolescents in particular. In one study, 34 adolescents aged 11–19 years were interviewed an average of 6 years after surgery. When questioned about adherence to diet and activity guidelines, most patients reported poor compliance with postoperative recommendations (Rand & MacGregor, 1994).

When considering surgery for the treatment of extreme obesity, clinicians must be cognizant of the risks of harm both during and after surgery, the likelihood of achieving the desired outcomes, and the potential for complications. One must consider if we are upholding the principle of nonmaleficence when we recommend a procedure that has inherent risks for morbidity and, in rare cases, mortality. Furthermore, in a population with a tendency toward limit testing and risk-taking, there is uncertainty about the adolescent’s ability to adhere to micronutrient supplementation and dietary guidelines. Without meticulous attention to these necessary lifestyle changes, patients place themselves at risk for nutritional and metabolic consequences.

Our action, the decision to recommend bariatric surgery, can adversely affect an adolescent’s interest. In an effort to alleviate the physical and psychological burdens of severe obesity, we may be placing our adolescent patient in harm’s way. This indeed would be a violation of the principle of nonmaleficence.
The Argument For: Beneficence

Beneficence obliges clinicians to act in the best interests of their patients (Beauchamp & Childress, 2009), using treatment modalities aimed at the restoration of health and well-being. In the case of an adolescent suffering the severe consequences of obesity, it is the nurse practitioner’s obligation to restore health by finding a means to effective weight loss. Where conservative treatments have failed, the principle of beneficence favors an obligation to seek an intervention that will not fail; an intervention that offers the promise of a healthier weight and resolution of comorbid conditions. Are we withholding lifesustaining treatment by not offering surgery as an option for adolescent extreme obesity? When all other measures have failed, is it not our duty to provide what has been shown as a safe and effective intervention for the treatment of adult obesity?

Beneficence dictates that surgical intervention should be considered only after serious attempts at conservative measures have failed. Beneficence warrants that adolescents being considered for bariatric surgery undergo an exhaustive preoperative evaluation by an interprofessional team of pediatric and bariatric specialists. Psychological evaluation and counseling for all prospective patients should be mandated. Intensive, structured, preoperative education for the patient and family that include modules that address diet, exercise, behavior modification, and mindful eating should be initiated early on. Patients and families need to understand the risks and benefits of surgical options. The principle of beneficence supports transparency regarding the lack of scientific evidence regarding the durability of bariatric surgical interventions and the long-term consequences on growth and development. Beneficence would be violated if the least invasive procedure that provided reasonable efficacy and the lowest side effect profile was not recommended for the adolescent patient. Table 1 outlines the arguments for and against adolescent bariatric surgery.

The Case of JG

JG is a 15-year-old obese, Hispanic male who presents to the bariatric nurse practitioner’s office with his mother. She is requesting that her son be considered for evaluation for a gastric bypass. His mother reports that JG has been obese since early childhood, as have his two siblings, and his mother has tried very hard to help him lose some weight. She states this has been difficult for her because she knows that he sneaks food in his room at night and gets food from the other children in his class. She expresses concerns about his health, fears that something will happen to him if he does not get help with his weight, and feels that his weight is affecting his mood and his ability to make friends. She states, “He just doesn’t fit in with the other children in his class. They laugh at him, make fun of him, and bully him.” She reports that her son has been snoring loudly lately, and she occasionally hears him stop breathing. He recently underwent a sleep study, which revealed severe sleep apnea for which he will need to be treated. In addition, she received a call from the school nurse that JG has been falling asleep during class. She wants him to have weight loss surgery “so that he can be happy and healthy like all the other children in his class.”

During the consultation, JG sits quietly; eyes gazing down to the floor. When addressed directly by the nurse practitioner, JG speaks softly; maintaining eye contact, and replying appropriately to questions he is asked.

On examination, JG is 66 in. tall and weighs 300 lb. His BMI is 48.5 kg/m². He is over the 95th percentile on the BMI-for-age growth chart. Recent blood work

<table>
<thead>
<tr>
<th>TABLE 1. Arguments for and Against Adolescent Bariatric Surgery</th>
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<tbody>
<tr>
<td><strong>The Argument Against: Nonmaleficence</strong></td>
</tr>
<tr>
<td>The obligation not to inflict any harm, or impose any risks of harm</td>
</tr>
<tr>
<td>• Adolescents are considered vulnerable, lack decision-making capacity, and are assumed incapable of protecting their own interests.</td>
</tr>
<tr>
<td>• There is insufficient scientific evidence to support durability, safety, and efficacy of bariatric surgery in this population.</td>
</tr>
<tr>
<td>• Adolescents are in a transitional stage of development and are at risk for noncompliance to postoperative advice.</td>
</tr>
<tr>
<td>• Bariatric surgery is an aggressive treatment associated with a small risk of serious complications, including death.</td>
</tr>
<tr>
<td><strong>The Argument For: Beneficence</strong></td>
</tr>
<tr>
<td>The obligation to act in the best interests (for the good) of the patient</td>
</tr>
<tr>
<td>• Morbid obesity is a chronic disease with long-term deleterious effects.</td>
</tr>
<tr>
<td>• Conservative approaches to weight reduction have limited efficacy.</td>
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<tr>
<td>• Bariatric surgery offers the potential for significant and sustained weight loss and improvement or resolution of comorbid conditions.</td>
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<tr>
<td>• Relatively safe, minimally invasive surgical interventions are available.</td>
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revealed a fasting blood glucose of 138 mg/dl and a glycohemoglobin of 7.0%.

This young man has been under the care of a pediatric nurse practitioner since the age of 8 years, when he moved to this country from Ecuador. JG and his mother have been working with a pediatric dietitian for the past 12 months in an effort to assist JG in losing some weight. Despite monthly follow-up visits, which include dietary counseling and weight monitoring, JG has gained 25 lb. Although his recommendations for lifestyle changes included regular aerobic activity, JG has been unwilling to exercise and, according to his mother, prefers to watch television.

A complete history of JG’s previous endeavors revealed that his attempts at weight loss were numerous over the past several years. For the past three summers, JG had attended a 10-week program of structured weight loss at a camp for adolescents. Each summer, he was able to lose approximately 25 lb but quickly regained the weight once he returned back home and resumed his usual lifestyle. A lengthy discussion followed regarding surgical options including LAGB, gastric bypass, and sleeve gastrectomy. The idea that surgery was a “tool” to assist JG with weight loss was emphasized along with the need for JG and the family to make lifelong lifestyle changes. Realistic weight loss goals were also discussed. JG was told it was unlikely that weight loss surgery would make him thin, but that he could expect to lose about 50% of his excess weight. Before leaving the office, JG and his mother were scheduled for a myriad of appointments for evaluations with the following pediatric specialists: registered dietitian, adolescent psychologist, endocrinologist, bariatric surgeon, and pediatrician. He was also scheduled to attend an information seminar, a support group, and was registered for an online patient education module on bariatric surgery. He was informed that he would need to attend preoperative education classes over the next several months that would teach him new skills and behaviors. Over the next 6 months, JG demonstrated motivation and compliance with all preoperative requests and completed all preoperative classes and consultations.

When Dr. Z, the bariatric surgeon, met with JG and his parents, he carefully discussed surgical options with JG and his family, and explained what type of lifestyle changes, dietary modifications, and postoperative supplements would be necessary with each procedure. Dr. Z explained that little information was available on the potential long-term consequences of weight loss surgery in adolescents. He expressed his concerns regarding performing a gastric bypass procedure on JG, explaining that he would not recommend this aggressive procedure in someone JG’s age. His reasons included risk of death and potential for life-threatening complications, inadequate knowledge regarding the malabsorptive effects on growth and development, and, finally, his uncertainty that JG would be compliant with protein and micronutrient supplementation and the potential consequences of noncompliance. Dr. Z also expressed his fears that if JG did not lose weight or continued to gain weight, his health would likely deteriorate further. For these reasons, Dr. Z recommended LAGB. He informed JG and his parents that clinical trials were underway; and based on his history, demonstrated motivation, and compliance, he met criteria for enrollment.

**Discussion**

JG, a severely obese adolescent with type 2 diabetes and sleep apnea, is seeking aggressive treatment for weight reduction in the hopes that his health and well-being will improve. On one hand, only limited scientific evidence exists to support the use of bariatric surgery in this age group, and on the other hand, JG’s extreme obesity is refractory to conservative measures, continues to worsen, and is associated with serious comorbid conditions. The case of JG poses an ethical dilemma; a complex situation involving conflict between moral imperatives with no obviously right or wrong solution. The ethical principles of beneficence and nonmaleficence provide the pillars on which our bioethical decision making should rest. The nurse practitioner must consider the obligation to act in the best interests of his or her patient and at the same time not lose sight of the obligation to do no harm, either directly or indirectly.

Patients and surrogates sometimes request medical procedures that the clinician is not convinced will be beneficial and, in fact, may actually be harmful. When patients choose interventions with potentially harmful consequences, some health professionals do not interfere beyond attempts at persuasion, thereby respecting their autonomy. In the case presented, Dr. Z’s unwillingness to perform a gastric bypass on JG might be considered an act of passive paternalism; a refusal to carry out a patient’s, or in the case of JG, a parent’s request for an intervention for reasons of patient-centered beneficence (Beauchamp & Childress, 2009). Passive paternalism can be justified because clinicians do not have a moral obligation to carry out their patient’s desires when they are incompatible with accepted standards of medical practice (Beauchamp & Childress, 2009).
Bariatric surgery in adults has stood the test over time, but little is known about its application to the pediatric population. Even less is known about its long-term effects on growth and development. No long-term studies are available to assess the durability of these surgical interventions or to determine the most appropriate procedure for this patient population. Adolescent bariatric surgery must be considered an innovative treatment, one that does not fall within the clinical standard of procedure for this patient population. It should be considered only after multiple organized, structured attempts of formidable duration have failed to produce significant and sustained weight loss. As previously described, bariatric surgery has significant risks, and outcomes data in adolescents is sparse. Therefore, surgical risks must be justified, and the risks, expected outcomes, and necessary lifestyle changes must be thoroughly explained to both the adolescent and their parents.

When potentially serious consequences of nonadherence to postoperative guidelines are coupled with a population of individuals whose developmental stage is often characterized by risk-taking, challenging the conventional, and limit testing, the stakes are high and outcomes may be less than optimal.

In the context of innovative therapy, bariatric surgery in adolescents might be considered by some to pose a threat. Without sufficient scientific evidence, however, the magnitude of adverse outcomes, or even the probability of their occurrence, cannot be quantified. In the absence of conclusive evidence, it is ethically justifiable and even obligatory to take precautionary measures to avoid a hazard when the harm could be both serious and irreversible.

Conclusion

Bariatric surgery for the treatment of severe obesity in adolescents may be considered only after conservative measures have failed to produce sustained weight loss. It should only be performed after the adolescent has undergone intensive preoperative evaluation and education by an interprofessional team of pediatric and bariatric specialists. To ensure optimal outcomes, adolescent patients must be thoroughly assessed. Careful preoperative evaluation of the obese adolescent should assess for level of emotional maturity, decision-making capacity, level of knowledge regarding their disease and its potential consequences, understanding of the risks and benefits of surgical intervention, and knowledge of the necessary lifestyle changes and skill sets required. Carefully developed guidelines, protocols, and professional standards must be in place before these innovative treatments are made available to adolescents. More research, preferably randomized controlled trials with long-term follow-up, is needed to add to the existing body of knowledge. The ethical principle of beneficence clearly supports that adolescent bariatric surgery is morally sound when performed using the earlier-mentioned recommendations. The complexity of ethical decision making in the field of adolescent bariatric surgery needs further attention so that nurse practitioners are better prepared to deal with such issues.

References


Correspondence regarding this article should be directed to Dorothy Roedel Ferraro, DNP, ANP-CS, CBN, Stamford Hospital, Center for Surgical Weight Loss, 166 West Broad Street, Suite 303, Stamford, CT 06902. E-mail: dferraro@stamhealth.org
Incivility, horizontal violence, and/or bullying in health care is a growing problem and threat to patient safety. This article will provide an overview of bullying, synthesis of the literature, discussion of the effect on patients, nurses and organizations, and description of steps that can be implemented to eradicate bullying.

**Keywords:** civility; bullying; patient safety; nurse engagement; moral courage; oppression theory; nurse leader; structural empowerment; horizontal violence; caring theory

The literature demonstrates incivility, horizontal violence, and/or bullying in health care is not only a growing problem but perhaps the greatest unrecognized threat to patient safety. A literature search of the last 5 years found more than 200 articles and five books focused on raising awareness, defining the problem, establishing prevalence, understanding the causes, and implementing civility programs. Hutchinson (2009) references workgroup bullying as “influencing, persuading, rationalizing or complying.” Studies reported more than 80% of those surveyed were victims of this type of bullying. A descriptive cross-sectional survey of nurses concluded that 72.6% experienced a workplace bullying event within the previous month (Berry, Gillespie, Gates, & Schafer, 2012). The state of the science stands at a place of knowing, yet understanding and effective interventions continue to evade the health care community because there are few studies that provide effective interventions for this complex problem in the nursing profession.

This article will provide an overview of bullying; synthesis of the literature; discussion of the effect of bullying on the patient, nurse, and organization; the steps nurse leaders and organizations can implement to eradicate bullying and incivility; and, finally, a call to action. In addition, the authors are including a *Voice of the Nurse*—real stories in the words of the nurse who experience bullying in their work setting from www.stopbullyingnurses.com (StopBullyingNurses.com, 2012) to create a connection between theory, research, and the actual experience.

Incivility and bullying are described as episodes when a nurse is verbally, emotionally, or physically abusive toward another nurse or employee. These terms are sometimes used interchangeably (Becher & Visovsky, 2012; Major, Abderrahman, & Sweeney, 2013). This behavior can be in the form of belittling, name-calling, not providing assistance when asked, or being noninclusive in group events. It can also be described as “nurses eating their young,” which is how new nurses are treated when entering the profession. These types of behaviors can be devastating to nurses. Distinctions between incivility and bullying can be described in terms of intent; bullying has a purposeful and targeted intent to harm an individual or group (Dellasega, 2011).

*Voice of nurse faculty:* “I remember my nursing professor warning us that sometimes, experienced nurses were mean to new nurses, until they proved themselves. It was to be expected, and we knew it was coming. Twenty plus years later, I found myself back in school earning my DNP while continuing my job as faculty. It was an exciting time.”
The bullying began slowly, with more duties, additional assignments, etc. She would tell others, ‘She’s leaving us.’ I began to feel guilty about wanting to go back to school. During our last meeting, she said I was disloyal, not committed, that I wasn’t there for her. I was shocked. Elevating ourselves through education should have been applauded; instead it was discouraged.”

Theory

Caring Theory

Boykin and Schoenhofer’s Caring Theory: A Model for Transforming Care states that “caring is the intentional and authentic presence of the nurse with another who is recognized as a person living caring and growing in caring,” and a conflict exists with a nurse who is bullying others (McCance, McKenna, & Boore, 1999, p. 1390).

Caring is complex in conceptualizing. Ranheim, Kärner, and Berterö (2012) define caring as “thrownness [sic] in the world – being thrown into an existence that we did not choose – where death limits the being” (p. 78). Caring has also been described as helping one grow into self-actualization of being. In addition, caring is framed as an attitude and from feministic perspective—one that was born from natural motherly actions.

Nursing has been described as holistic and caring in approach, combining the patient’s needs with the patient’s experiences, values, and opinions (Ranheim et al., 2012; Rocker, 2012). Caring theory has evolved through several nursing theorists. Jean Watson’s theories encompass the values and knowledge of caring for physical and nonphysical needs (Ranheim et al., 2012). Her work is known for describing the 10 clinical caritas that nurses can use to have supportive caring verbal exchanges with patients (Sitzman, 2007). A relevant example is her caritas of “practicing loving-kindness with the context of an intentional caring consciousness”; “developing and sustain helping-trusting, authentic caring relationships”; and “engaging in genuine teaching—learning experiences that rise from an understanding of the interconnectedness” (Sitzman, 2007, p. 9). How do nurses who are holistic and have developed their practice through a caring theory approach allow nurse–nurse bullying to exist? Caring is centric to our professional being. This presents a paradox with our true being as a nurse if we can provide and sustain caring relationships on a physical level and nonphysical level with our patients and in the same moment disrespect and bully nursing colleagues.

Moral Courage Framework

Corley (2002) described nurses as the moral center of health care. When nurses are morally courageous, then patients, nurses, and organizations benefit. Translating this to the nurse-to-nurse caring relationships would propose that nurses who are targets of noncaring acts and do nothing can develop moral distress just as they do when they see noncaring acts toward patients. Moral distress occurs when one knows the right thing to do but cannot do it (Jameton, 1984). The experience of prolonged moral distress in nurses can lead to moral residue—the buildup over time of negative psychological feelings toward self caused in part by not acting on their morals.

Nurses experiencing bullying or incivility from another nurse who knows the act violates their moral threshold, yet do not act to address the act or voice their concern, can feel a greater level of moral distress. Moral courage (the ability to act on one’s morals) is one way to help effectively relieve the acute moral distress and prevent moral residue. Nurses who have formal ethics training and a moral courage framework from which to view morally distressing issues are better prepared and more likely to demonstrate courageous acts than those who do not (Edmonson, 2010).

Oppression Theory

The literature describes the nursing profession as having the characteristics of an “oppressed group” with most of its members being female (Becher & Visovksy, 2012). Oppressed groups generally suffer from self-esteem issues and lack of control, which leads to the development of bullying and horizontal violence. One characteristic of an oppressed group is horizontal violence turned inward because no safe outlets exist to express anger, frustration, and so forth toward the oppressor. Roberts (1983) understood this and described nurses practicing in acute care settings as being burdened by numerous hierarchies, but specifically medicine and leadership who removed power and control from them.

Oppressed groups describe themselves as powerless, invisible, and under recognized. The bullies within nursing are staff nurses, charge nurses, faculty, and leaders alike. Women psychologically work through stress differently than men, and it is through powerlessness feelings that abusive behavior is directed toward one another. These behaviors range from withholding information, intimidating others, verbal innuendos or nonverbal gestures, rolling eyes in disgust, and not assisting when
a nurse is in need (Hutchinson, 2009; Laschinger, Grau, Finegan, & Wilk, 2010; Major et al., 2013).

When considering the environment through the lens of oppression, structural empowerment, and supportive leaders found in Magnet facilities report less horizontal violence and nurse bullying. Increased autonomy of nursing in practice environments is generally associated with less expressed oppressive behaviors. Conversely, poor staffing, high acuity, and low resources are associated with an increased incidence of horizontal violence and bullying in the workplace (Becher & Visovsky, 2012; Rocker, 2008; Yildirim, 2009).

Conflict Theory

The literature supports that conflict theory and social identity theory are where individuals develop their response to conflict. It is natural for human beings to search “in-groups” and “out-groups” to find people that have characteristics in common to ones’ self. Human beings look to define themselves, developing an identity with a group. Inherently, “in-groups” and “out-groups” develop conflict where stereotypes are developed and a sense of threat to others that are not in their group (Cuhadar & Dayton, 2011).

Conflict primarily develops from a lack of understanding and can include differences in beliefs, values, attitudes, goals, and priorities (Yoder-Wise, 2003). One can also view conflict from the perspective of Abraham Maslow’s writings on human needs, theory of conflict. “He theorized that all people are driven to fulfill fundamental human needs for safety, security, love, a sense of belonging to a group, self-esteem and attaining their goals” (Clark, 2009). As a nurse develops where he or she fits into the nursing profession within his or her organizations, he or she may witness bullying or incivility and not speak up because the “association need” is very strong and he or she fear not fitting in. In turn, this inaction adds to the devastating cycle of bullying. As nurses, leaders, and executives, it is critical to understand the influence of how conflict theory can be formative in the creation of an environment where conflict can be positive in nature and build safe and learning environments.

Feminist Theory

The nursing profession exists in the context of a predominately patriarchal society and the practice of medicine. Feminist theory proposes gender oppression as the dominance of women by men. The professions of medicine and nursing from a historical perspective have developed along gender lines, medicine-male and nursing-female until the last decade. These professions gender-based evolution influences the role of the nurse both in practice and academia to be, in general, more submissive, less assertive, more deferring, and more respectful of the role of medicine than vice versa.

Interestingly, men and women work through stressors in different ways. In general, men tend to work through concerns or events in a personal, one-on-one, direct way with the person who is involved with the event. Likewise, women in general tend to take a more passive approach, which through feminist theory have been described as working through their aggression using verbal and non-verbal gestures, connecting with cliques, and even forming campaigns against one another. Dellasega (2011) describes this as “relational aggression” or female bullying. It should be noted no gender is the sole owner of any behavior or style of conflict management and both may demonstrate the same uncivil or bullying behaviors at any time.

Literature Review

Bullying in the workplace appears in the literature as early as 1992, when Dzurec and Bromley (2012) described it “as the most prevalent and crippling problem with devastating outcomes of all work related stressors that exist” (p. 249). This is still accurate today but appears to be emerging in awareness, knowledge, and recognition in the literature specific to health care and nursing over the last 5 years. In reviewing the literature, three key words were used to index EBSCOHost database—bullying, incivility, and horizontal violence—from 2008 to 2013.

Data regarding the number of nurses who have experienced workplace bullying or horizontal violence are not consistent from one study to the next, which may be related to unrecognized and underreported events. There is evidence to suggest that students can be victims as early as their undergraduate programs and then bullying extends into the workplace (Hutchinson, 2009).

Voice of the clinical nurse: “I remember a personal experience, where I was literally chastised by experienced nurses in a labor and delivery rotation as a male nursing student, not being allowed to see any deliveries. When as a Paramedic student, 6 years previously, I was treated very differently on a labor and delivery rotation, observing and assisting in multiple deliveries.”

In addition, new graduate nurses and experienced nurses reported experiencing bullying behaviors ranging
from 63% to 95% (Becher & Visovsky, 2012; Berry et al., 2012; Laschinger et al., 2010; Major et al., 2013; Yildirim, 2009). These experiences can leave long-lasting impressions, as one described it, “the very first incident burned in my heart and brain” (Gaffney, DeMarco, Hofmeyer, Vessey, & Budin, 2012, p. 4).

Bullies, Bystanders, and Victims

In reviewing the profile of a bully, typically these nurses have low self-esteem and suffer from the inability to feel like they belong to a group, which leads to the abusive behavior. Some findings have indicated that these bullies may be those who are influential and socially dominant for various reasons (Hutchinson, 2012). They are also described as people who are self-centered and strive for power related to personal problems or mental health problems (Rocker, 2012). The bully will often attempt to cover up their bullying behavior by talking negatively about the victim. In addition, the bullies are fully aware of their actions, although they are often covert and hidden in nature (Rocker, 2008).

Voice of the bully nurse: “I don’t think I was a bully when I started nursing school, but I knew how to get my way from others through manipulation and intimidation. I had seen it many times in my own home growing up and even been on the receiving end of it. I guess I became a bully to avoid being bullied again myself. It’s not right and I’m not proud of it.”

The bystander could look like a new nurse who may observe and silently, through inaction, support the bullying behavior of nurses just to fit in. Just like a more experienced nurse may witness the behavior and not intervene to maintain their perceived status in a clique or group they feel power from and to avoid becoming the target. Unfortunately, nonreaction to bullying or remaining passive only increases the chances of continued bullying and diminishes the support and trust within the group members (Hutchinson, 2009).

Voice of the bystander nurse: “I watched in horror as the new nurse on the unit was being verbally attacked by her preceptor. I couldn’t believe it and all I could think was, I’m so glad it was not me on the receiving end of that, I would probably leave the unit and maybe nursing.”

A victim may be a new nurse to an experienced nurse. This person often suffers from self-esteem issues and is victim to unwarranted, unwanted hostile attitudes or behaviors from other nurses. Victims are typically targeted because of differences from the larger group. This can be extremely damaging to ones’ psyche and professional practice development. Janoff-Bulman (1992) reported that victimization may even threaten one’s basic assumption of being competent and valuable and destroy the feeling of being in a caring and safe environment.

Voice of the victim: “I was a new nurse, but I have a great deal of life experience and this was my second career. I worked in an ED, I was not only trying to learn the procedures and systems, but learn to be a good nurse, perfecting my technical skills. The nurse educator would literally stand behind me and yell when she did not like what I was doing. Rather than teach me, she would just degrade me in front of others. It lasted for months and I had to leave.”

Effects of Nurse Bullying

The effects can be devastating to the patient, nurse, and the organization. The greatest affect on the patient is poor communication, which has been reported as the leading cause of sentinel events by the Joint Commission (Becher & Visovsky, 2012). Other affects on the nurse include reduction in motivation, increase risk of making an error at work resulting in increased patient risk, and reduction in the nurse’s commitment to the organization. Nurse job satisfaction and retention become a challenge for organizations with bullying and incivility related to increased stress, fear, and burnout. The nurse victim can suffer from low self-esteem, anxiety, sleeping disorders, and depression. Rodwell and Demir (2012) reported depression (scores) were significantly higher among nurses employed in long-term care facilities who reported bullying.

Bullying can lead to communication problems, difficulty maintaining social contact, impaired personal reputation, and health problems. The stress from bullying and incivility can lead to poor mental and physical health (Read & Laschinger, 2013). New nurses seek to learn and grow as they build their professional practice. Becoming a victim of bullying or incivility can significantly limit their potential professional growth.

Organizations are impacted when nurses leave their employment because of job dissatisfaction. The organization is also impacted by absenteeism, nurse burnout, and exhaustion (Berry et al., 2012; Read & Laschinger, 2013). Rocker (2008) estimated that up to 37% of nurses may leave their jobs because of bullying. The cost to an organization per individual victim of bullying or incivility
ranges from $30,000 to $100,000 per year (Becher & Visovsky, 2012).

**Eradicating Nurse Bullying and Incivility**

A professional nurse has the responsibility to understand the American Nurses Association Code of Ethics and the implied expectations for professional nurses. Nurses need to take a stand and confront episodes of bullying and/or incivility. The victims need to be supported by leadership and the organization to address the bully in a way that will share how the act affected that victim. Nurse bystanders should be encouraged to “stop the line” when witnessing nurse bullying without fear of retaliation from the bully, leadership, or the organization. Nurse leaders must be able to connect the bullying behavior to the outcome for all involved to improve outcomes for individuals, groups, organizations, the profession, and most importantly the patient who all nurses have a duty to protect and provide safe passage.

*Voice of the nurse leader:* “As a nurse manager, I knew everyone expected me to deal with our bully, but honestly I wasn’t sure how, as she had a lot of informal expert power. Thank goodness my chief nurse and human resources were there for me.”

Nurse executives and other nurse leaders can set at a positional distance from the actual point of care that can prevent line of site and recognition of such behaviors and their impact on outcomes. Positional distance can create unintentional blind spots for nurse leaders or the inability to see clearly the civil or uncivil environments of units or shifts that exist. Nurse leaders need the transparency and early warning systems of civility metrics that directly or indirectly measure the civility of both the macro and the micro level. The Civility Dashboard created by the Chief Nursing Officer (CNO) and oncology nurse manager at Texas Health Dallas is an example of a leadership innovation that applies the early warning concept—the ability to drill down and provide a longitudinal view required for such a measurement tool to be effective.

The nurse leader and organization need to identify a “zero-tolerance” policy and educate all leaders and employees around the concepts of workplace bullying and incivility; and then take appropriate actions that demonstrate true commitment to align espoused values and actual behavior. Zero tolerance policies alone are not enough, organizations must have clear nonretaliation standards that define reporting pathways, structures of support, and protections offered to those who report. Research in grounded theory offers the strategy of transforming “bystanders” to “upstanders” who have the courage and ability to stand up for themselves and others through capacity building.

Organizations that support structural empowerment for their staff inversely reduce the amount of bullying and incivility (Becher & Visovsky, 2012; Laschinger et al., 2010). Kanter’s theory of structural empowerment supports social structures that provide the necessary tools for nurses to accomplish their work in meaningful ways. In addition, Kanter’s theory has been reported to be a statistically significant predictor of high job satisfaction (Laschinger et al., 2010). Strategies that assist in building empowerment include education around having crucial conversations, confronting, and team building. Bystanders need to be encouraged to report events that are witnessed and victims encouraged to demand the abuse stops. This reporting process needs to be clear to all employees. Nurse leaders need to promote organizational values, coupled with ethical standards of nursing practice, and foster a moral work environment. In addition, leaders must dedicate time on all organizational agendas to focus on building civility including awareness, education, prevention, and reinforcing support for upstanders and victims that align with organizational values.

In relation to the framework of Boykin and Schoenhofer’s caring theory, nurses need to care for each other in a caring and giving way to provide the complex care they deliver to the patients every day. Nurse leaders need to increase social support for the nurses and supervisors as it has been proven to aid in reducing bullying and incivility (Demir & Rodwell, 2012). In educating a shared responsibility, Hutchinson (2009) describes a process much like Just Culture where there is not a “blame-free or punitive” process. Each event must be examined using a comprehensive, consistent, and transparent approach that creates learning, support, and accountability. There needs to be recognition that humans are fallible and look to share the experiences through a restorative process that focuses on the act of bullying and not making the perpetrator the main focus. Hutchinson reports that this process is transformational and provides an opportunity for critical reflection on the behaviors, roles, attitudes, choices, and outcomes.

Another opportunity that nurse leaders have in supporting their nurse employees is developing a “crucial conversations” program that provides support and role play in developing the skills to confront behaviors that are not appropriate nurse to nurse (Major et al., 2013). This type of training provides empowerment and structure around working through conflict, which will increase nurses’ self-esteem and likelihood of success in confronting an
event. It may be necessary for nurse leaders to increase supervision in areas where these behaviors are occurring temporarily.

A single site study by Stagg, Sheridan, Jones, and Speroni (2011) offers a framework for future studies and one of the few quasi-experimental studies to have outcomes associated with strengthening the individual nurse to respond to bullying. Sixty-two medical–surgical nurses completed a before and after bullying survey instrument after receiving an intervention of Cognitive Rehearsal Training program consisting of bullying concepts, behaviors, consequences, action, policy support, and cognitive rehearsal intervention (CRI). The CRI uses a method to help identify the offending behavior and prepare, devise, and practice future solutions. The primary outcome of feeling more prepared to handle bullying is a true step in the right direction.

The American Nurses Association identified several strategies to employ to eliminate bullying. One must recognize bullying and not accept it as appropriate behavior (American Nurses Association, 2009). Secondly, all clinical nurses need to be engaged to confront the bullying behavior. The literature reports the number one response to bullying behavior as avoidance, which leads to the continued behavior (American Nurses Association, 2009). Finally, learn and develop conflict management and/or crucial conversations skills to increase one’s ability to listen, learn, and develop a plan of action (American Nurses Association, 2009; Major et al., 2013).

Conclusion and Call to Action

Finding the meaning in civility is key in developing a bullying free environment, a key element to a culture of positive regard and respect. The literature has reported that incivility, horizontal violence, and/or bullying in health care is a growing problem. This problem is contributing to the nursing shortage nationally and internationally. These bullying behaviors include but are not limited to belittling, gossip, withholding information, intimidating others through threats, body language or hand gestures, rolling of the eyes, refusing to help a colleague in need, yelling at coworkers, and refusing to mentor or precept staff in their presence.

Nurse leaders must provide education and training for clinical staff, which include examples of nurse bullying and incivility to heighten awareness. In addition, leaders need to share the consequences on patients, colleagues, and the organization when bullying is unnoticed or unreported. There must be a “call to action,” to stop the line, and provide a “no bullying zone” proclamation. These fundamental actions must be supported by developing and providing an environment of structural empowerment that includes working with front-line nurses to learn the challenges, barriers, and possible solutions to bullying and incivility. Clinical nurses, nurse faculty, nurse leaders, and executives have a responsibility to provide a safe environment not only to provide quality–nursing care but also to provide a healthy work environment for all nursing professionals. It is a chance to be the change so desperately needed in health care today.

References


Correspondence regarding this article should be directed to Cole Edmonson, DNP, RN, FACHE, NEA-BC, Texas Health Presbyterian Hospital Dallas, 8200 Walnut Hill Lane, Dallas, TX 75231. E-mail: coleedmonson@texashealth.org
The Introduction of a Nurse Practitioner Model of Care Into an Australian Outpatient Setting

Andrew Scanlon, DNP, MNS, MN, RN, NP, FACN, FACNP, PhD-c
La Trobe University Clinical School of Nursing, Austin Health, Heidelberg, Victoria, Australia
The University of Sydney, Sydney, New South Wales, Australia

Introduction: This article aims to examine the role of a nurse practitioner (NP) within a public hospital Department of Neurosurgery outpatient setting in Melbourne Australia. Background: Neurosurgical activity in the outpatient clinic has been increasing. Public health networks around Australia have introduced various initiatives to address the growing concern of timely access for specialized care. One such initiative has been the introduction of NPs in both outpatient and acute care settings.

Contemporary practices of an NP working in an Australian neurosurgery department are described. How the role was first proposed initiated, and the training and capacity building is also explored and the national, state, and local structures and processes that have defined the role will be described.

Public health networks throughout Australia have introduced various initiatives to address the growing concern of timely access to specialized care. One such initiative has been the introduction of nurse practitioners (NPs) in both outpatient and acute care settings. This article aims to examine the role of an NP within a public hospital Department of Neurosurgery outpatient setting in Melbourne, Victoria, Australia.

Background

Nurse Practitioner project work to develop the role within Australia started more than 20 years ago in the State of New South Wales, Australia with the first NP authorized in the year 2000 (The National Nursing and Nursing Education Taskforce N3ET, 2005). In 2004, the Australian Nursing and Midwifery Council (ANMC; with contributions from the Nursing Council of New Zealand) commissioned a project to develop a set of national competency standards for the NP (ANMC, 2006). These standards are used guide curriculum as well as the assessment of those deemed eligible to and/or for endorsement/authorization. Currently, there are 843 NPs endorsed across in varied roles Australia (Nursing and Midwifery Board of Australia [NMBA], 2013). The definition of NP within Australia is a registered nurse educated and authorised to function autonomously and collaboratively in an advanced and extended clinical role. The nurse practitioner role includes assessment and management of clients using nursing knowledge and skills and may include but is not limited to the direct referral of patients to other health care professionals, prescribing medications and ordering diagnostic investigations. The nurse practitioner role is grounded in the nursing profession’s values, knowledge, theories and practise and provides innovative and flexible health care delivery that complements other health care providers. The scope of practice of the nurse practitioner is determined by the context in which the nurse practitioner is authorised to practise. (ANMC, 2006, p. 1)
National Requirements

National requirements for endorsement as an NP within Australia are listed in detail in Table 1.

Within Australia, NPs practice within their own individual scope of practice (SOP). The NMBA (2011c) has stated that it is an expectation that the NP will only practice in that specific area of practice and thus within their individual SOP in accordance with the Safety and Quality Framework. However, the NMBA (2011c) has stated that "given the dynamic nature of health care and the evolving role of NPs, the NMBA does not place a SOP notation on the endorsement of nurse practitioners." Thus, Australian NPs, in general, do not hold an NP license under a specialization such as a Family Nurse Practitioner, Acute Care Nurse Practitioner, and so forth as found in the United States (American Association of Nurse Practitioners, 2013). The exception to this rule are 124 NPs within the state of Victoria, Australia (NMBA, 2013) who have an additional notation placed on their endorsement in relation to their area of practice, which also defines what they can prescribe (NMBA, 2011a). This notation of one or more of eight NP categories is needed to meet the Victorian state legislative requirements. Under the Drugs, Poisons and Controlled Substances Act 1981, the eight categories of NPs are as follows:

- Acute and supportive care
- Care of the older person or aged care
- Critical care
- Maternity care
- Mental health care
- Pediatric care
- Perioperative care
- Primary care (The State Government of Victoria, 2010)

Austin Health Department of Neurosurgery

Background

In April 2005, a comprehensive review of neurosurgery services at Austin Health was conducted. Recommendations from this review included the expansion of the current service, building on core strengths, and establishing others as well as the need to implementation of an NP role to assist in this expansion (Donnan et al., 2005). It was thought that implementing such a role would provide consistency and quality of care and an increase in patient throughput through limited substitution or delegation of some medical roles allowing for efficient use of medical officer time. After intense lobbying by the preferred candidate and the Department of Neurosurgery in late 2007, ongoing funding was secured to develop the role.

Neurosurgery Outpatients Service Need

Historically, general outpatient clinics consisted of two clinics that treated about 2,000 patients per annum (Fabinyi, 2007). These clinics' new nonurgent waiting list times were extended over 12 months, frequently overbooked (sometimes by more than 30%), and extended waiting times for patients to be seen in when in attendance at clinic (Fabinyi, 2007). Thus, patients waiting for an appointment in clinic waited longer than the national norm of 6 months (Australian Institute of Health and Welfare, 2007).

In 2006, an unfunded carpal tunnel syndrome (CTS) clinic was created to alleviate some pressure on these clinics. The neurosurgical registrars traditionally ran this service but had competing commitments to inpatients and urgent reviews and, as such, this clinic was haphazard at best. Both clinics required additional clinical support and it was thought best to implement a nursing model of care to help alleviate this problem.

The NP model of care (acute and supportive care) for the outpatient care setting was considered to be appropriate and would complement the current process. It was perceived that through the use of an autonomous practitioner treating patients from a nursing background would further enhance the service through not only increased throughput and continuity of care but also patient outcomes and satisfaction (Challenor, Henwood, Burgess, & Clare, 2006; Faithfull, Corner, Meyer, Huddart, & Dearmaley, 2001; Garfin, Kurz, Harlow, Katz, & Weisman, 1988; Sarro, Rampersaud, & Lewis, 2010; Williams, Hollins, Barden-Marshall, & Harper, 2003).

Scope of Practice

Although an individual RN, midwife, or NP's SOP is defined as what they are educated, authorized, and competent to perform, it can be influenced by the context in which they practice, client's health needs, the individual NP, as well as the service provider's policies and needs (ANMC, 2007). As such, despite being educated and possibly authorized to perform tasks in certain contexts, the NP role would not be renumerated by the state or federal government for services rendered under certain circumstances. This will alter an NP’s practice and SOP because they may not be allowed to perform tasks that they cannot be renumerated for because acute inpatient (hospital
<table>
<thead>
<tr>
<th>Requirement</th>
<th>Evidence</th>
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<tr>
<td>Current general registration as a registered nurse with no conditions on the registration relating to unsatisfactory professional performance or unprofessional conduct.</td>
<td>An applicant who is currently registered with the Board in the general category of “registered nurse” and whose registration does not have any conditions imposed on his or her registration in relation to unsatisfactory professional performance or unprofessional conduct has satisfied this requirement.</td>
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<td>An applicant who is not currently registered with the Board in the general category of registered nurse will first need to apply for registration. The applicant may be one of following:</td>
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<td>1. An applicant, including an internationally qualified applicant, who has not previously held general registration as a registered nurse in Australia and is applying for initial registration in the general category of registered nurse or</td>
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<td></td>
<td>2. An applicant, including an internationally qualified applicant who has previously held general registration as a registered nurse in Australia and is applying to enter the register again.</td>
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<td>Evidence would be a current registration certificate as a registered nurse with no conditions on the registration relating to unsatisfactory professional performance or unprofessional conduct issued by the NMBA.</td>
</tr>
<tr>
<td>The equivalent of 3 years’ full-time experience in an advanced practice nursing role within the previous 6 years from date of lodgement of application.</td>
<td>Advanced practice defines a level of nursing practice that uses extended and expanded skills, experience, and knowledge in the assessment, planning, implementation, diagnosis, and evaluation of (nursing) care required. Nurses practicing at this level are educationally prepared at postgraduate level and may work in a specialist or generalist capacity. However, the basis of advanced practice is the high degree of knowledge, skill, and experience applied in the nurse–patient/client relationship to achieve optimal outcomes through critical analysis, problem solving, and accurate decision making.</td>
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<td>The applicant must also meet the Board’s registration standard on recency of practice.</td>
<td>The Board has two pathways that fulfill the education requirements for endorsement as a nurse practitioner. They are as follows:</td>
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<td>Completion of a Board-approved nurse practitioner program of study at master’s level or equivalent as determined by the Board.</td>
<td>Pathway 1 Evidence of successful completion of an Australian Nursing and Midwifery Accreditation Council (ANMAC)-accredited and Board-approved nurse practitioner program of study at master’s level. Board-approved programs of study are listed on the Board’s website at <a href="http://www.nursingmidwiferyboard.gov.au/Accreditation.aspx">http://www.nursingmidwiferyboard.gov.au/Accreditation.aspx</a></td>
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<td>Pathway 2 Evidence of successful completion of</td>
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<td>1. a program of study at master’s level that is clinically relevant to the applicant’s context of advanced practice nursing for which they are seeking endorsement as a nurse practitioner; and</td>
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<td>2. supplementary education that will demonstrate equivalence and meet the National Competency Standards for the Nurse Practitioner. The National Competency Standards for the Nurse Practitioner are listed on the Board’s website at <a href="http://www.nursingmidwiferyboard.gov.au/Codes-and-Guidelines.aspx">http://www.nursingmidwiferyboard.gov.au/Codes-and-Guidelines.aspx</a></td>
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<tr>
<td>Compliance with the National Competency Standards for the Nurse Practitioner.</td>
<td>The National Competency Standards for the Nurse Practitioner is one of a suite of competency standards developed as part of a Professional Practice Framework by ANMAC and subsequently approved by the Board.</td>
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<td>An applicant who has successfully completed a Board-approved nurse practitioner program of study at master’s level is not required to provide further evidence of compliance with the National Competency Standards for the Nurse Practitioner.</td>
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<td></td>
<td>An applicant who has not completed a Board-approved nurse practitioner program of study at master’s level will be required to provide evidence of compliance with the National Competency Standards for the Nurse Practitioner.</td>
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<td></td>
<td>These competency standards are listed on the Board’s website at <a href="http://www.nursingmidwiferyboard.gov.au/Codes-andGuidelines.aspx">http://www.nursingmidwiferyboard.gov.au/Codes-andGuidelines.aspx</a></td>
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<tr>
<td>Compliance with the Board’s standard for registration standard on continuing professional development.</td>
<td>An applicant will be required to complete a minimum of 20 hr of continuing professional development relevant to their context of practice each year and may be required to provide this evidence on application.</td>
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stay) care and outpatient (ambulatory care) services are funded differently. Generally, patients (Australian residents and eligible overseas visitors) admitted for care in the inpatient setting are covered under a state and federal government by a casemix funding model arrangement where the hospital admission and not the individual procedures, tests, assessments, referrals, care delivered, and even medication prescribed are costed in accordance with the condition and complications the patient has been admitted for (Department of Health, Victoria, Australia, 2013a). The outpatient setting is more complex with multiple sources of funding available through federal, state, and privately funded schemes. Until the 1st of June 2012, most outpatient services were funded under the Victorian Ambulatory Classification and Funding System (VACS) in which outpatient encounters or occasions of service are billed to the state government (Department of Health, 2013c). From July 2012 to July 2013, the Victorian public hospital specialist outpatient services have continued to be block funded, consistent with historical VACS funding levels but now under a new National Activity Based Funding—Non-Admitted (Department of Health, Victoria, Australia, 2013b). This process is adequate for general assessments but becomes problematic when the NP must perform other activities inherent in their role. An example may be ordering diagnostics or making a referral to a specialist physician in the outpatient setting. Because this would require a Medicare Benefits Schedule (MBS) number that is not available to NPs working in the public sector (Medicare, 2013a). If an NP were to order diagnostic tests or make a referral to specialist physician services without a valid MBS number, the cost of the diagnostic test or referral would not be renumerated from the federal government and the provider or the patient would have to absorb the cost, both of which would be unacceptable in the Australian public health care system. In addition, extra revenue sources for the public hospitals that may be accessed through state government compensation schemes such as Work Safe or the Transport Accident Commission (Transport Accident Commission, 2013; Work Safe, 2013) or through a nominated private insurance payer cannot be access by services rendered by an NP because of existing legislation and agreements.

NPs within Australia have the authority to prescribe related to their SOP as well as state and federal legislation and funding arrangements as discussed previously. The cost of this medication is another concern for patients and NPs alike. Australia has the Pharmaceutical Benefits Scheme (PBS) that gives all Australian residents and eligible overseas visitors access to affordable prescription medicine through the Australian government subsidies of the cost of listed prescription medicine (Medicare, 2013b). Prescribing of PBS medicines is only available in outpatient setting or medications prescribed at discharge and is contingent on the NP having collaborative arrangements in place, as required by amendments to the National Health Act of 1953 (Department of Health and Ageing, 2013; Medicare, 2013a). The additional problem for Victorian NPs is that they are able to prescribe certain medications within their SOP and notation within the inpatient setting (casemix funded) but may not do so in the outpatient setting. As medications listed on their Victoria NP notation may not be available for NPs to prescribe on the PBS. Again, if these certain medications were to be dispensed, there would be no subsidy attached to them and either the provider or the patient would have to absorb the cost, both of which would be unacceptable in the Australian public health care system.

**Neurosurgery Outpatient Data**

The Department of Neurosurgery at Austin Health has 33 outpatient clinic sessions a month (two general clinics a week, five preadmission clinics a week, one CTS clinic a week, and one pituitary clinic a month). The neurosurgery NP attends works 3 outpatient sessions a week currently or 12 outpatient sessions a month. Within the one CTS (upper limb nerve compression syndrome) clinic and two sessions in general neurosurgery outpatients a week, the NP sees approximately 20% of all patients in the ambulatory care setting. In the CTS clinic, the NP reviews all patients; however, within the general neurosurgery outpatient clinic, the NP works as one of the clinicians seeing those patients within their SOP. In attendance at the general neurosurgery outpatients are one NP, six neurosurgeons, one interventionist radiologist and two registrars, and two specialty surgery fellows.

The contribution the NP made to the neurosurgery general outpatient clinic can be seen when comparing the neurosurgery annual audit data 2011–2012 (most recent data) to that of the period of 2008–2009 (during the NP’s sabbatical; see Figure 1). The data from the period of 2011–2012 shows waiting times for nonurgent patients to be seen in clinic are currently 120 days with 2,097 presentations (Gonzalvo, 2012) seen in Figure 2. When compared to the 2008–2009 data, waiting times to be seen in clinic were 181 days with only 1,707 presentations (Fabinyi, 2009) seen in Figures 1 and 2.
In regards to the NP CTS clinic, waiting times for initial assessment in clinic is down from 12 months (2008–2009 audit data) to just 6 weeks (2011–2012 audit data; Gonzalvo, 2012). Figure 3 compares neurosurgery annual audit data between the period of 2008–2009 and 2011–2012 on the NP CTS clinic. This shows an increase in number of patients seen in CTS clinic from 31 in 2008–2009 (Fabinyi, 2009) to 297 in the period 2011–2012, with a projected increase again for the period of 2012–2013 (Gonzalvo, 2012).

Gains Made

The NPs’ presence in general outpatient has made significant impact with decrease in time waiting for nonurgent patients to be seen of 61 days despite an increase of 390 patient presentations per year. The only other change to the neurosurgery outpatient service in this time (apart from the introduction of the NP) was the inclusion of an additional neurosurgical consultant at one outpatient session since December 2009.

In relation to the NPs’ role within CTS clinic, there has been a decrease in waiting time by almost 10 months despite an increase in patient load of 950%. In addition to this success is the recognition by the hospital of the value of the NP-run service. An example of this is the change in CTS referrals and care. Previously at Austin Health, patients with suspected CTS were sent to several surgical units—general surgery, orthopedic surgery, plastic surgery, and neurosurgery. In December 2011, the surgery clinical service unit (CSU), which incorporates general, orthopedic, and plastic surgery took the unilateral move to funnel the entire suspected CTS patient group to general surgery unit to review and care. This was opposed by neurosurgery who continued to provide service as usual. However, in March 2013, the surgery CSU has asked the Department of Neurosurgery to take over all patients with suspected CTS.

Figure 1. General neurosurgery outpatients.

Figure 2. Waiting time until new nonurgent neurosurgery outpatient clinic.
because of the expanding waiting times to be seen in clinic and treated.

Conclusion

Despite the implementation and the proven effectiveness of the NP role in the neurosurgical outpatient setting, further work of its evolution must be done. Improvement of the service at the local level will be performed through auditing patient experience as well as care delivered by NP through prospective study to commence in late 2013. At the state and federal level, further work is required through better access to PBS and MBS for the NPs and the patients they serve. Lobbying for the latter is ongoing by the Australian College of Nurse Practitioners, the Australian College of Nursing, and the Australian Nurses Federation despite the ongoing opposition by the Australian Medical Association.

References


Figure 3. Carpal tunnel clinic (records started in late 2008).


Correspondence regarding this article should be directed to Andrew Scanlon, DNP, MNS, MN, RN, NP, FACN, FCNP, FACNP, PhD-c, Austin Health, Level 4 Austin Tower, PO Box 5555, Heidelberg, Victoria, Australia 3084. E-mail: a.scanlon@latrobe.edu.au
Margaret A. Fitzgerald, DNP, FNP-BC, NP-C, FAANP, CSP, FAAN, DCC, is the founder, president, and principal lecturer with Fitzgerald Health Education Associates, Inc. (FHEA), an industry leader in nurse practitioner (NP) board review, with more than 70,000 NPs using her program for board certification preparation. She is an international provider of NP certification preparation and continuing education for health care providers. For more than 25 years, Dr. Fitzgerald and the Fitzgerald Health faculty have provided graduate-level pharmacology courses for NP students at several universities in the United States. She maintains a clinical practice as a family NP at the Greater Lawrence Family Health Center, Lawrence, Massachusetts, a federally qualified health center (FQHC) where she currently is part of a team mentoring a group of newly graduated NP as they transition to practice. In 2006, Dr. Fitzgerald earned her doctor of nursing practice (DNP) from Case Western Reserve University, Cleveland, Ohio, where she received the Alumni Association Award for Clinical Excellence.

Dr. Fitzgerald is the recipient of the National Organization of Nurse Practitioner Faculties’ Lifetime Achievement Award. This award is given in recognition of vision and accomplishments in successfully developing and promoting the NP role. She is the recipient of the American College of Nurse Practitioner’s Sharp Cutting Edge Award and the Outstanding Nurse Award for Clinical Practice by the Merrimack Valley Area Health Education Council. She is a fellow of the American Academy of Nursing; Dr. Loretta Ford, the cofounder of the first NP program in 1965, was her lead sponsor for this honor.

Dr. Fitzgerald is also a member of the first group of 20 NP leaders inducted into the fellow of the American Academy of Nurse Practitioners. She is a professional member of the National Speakers Association and is the first NP to earn the Certified Speaking Professional (CSP) designation in recognition of excellence and integrity as a speaker. In 2011, Dr. Fitzgerald became certified by the American Board of Comprehensive Care as a diplomate of comprehensive care (DCC). This prestigious designation is available to DNP graduates who are licensed advanced practice registered nurses (APRNs) and nationally certified in an APRN specialty.

Dr. Fitzgerald serves as a consultant to nursing organizations both in the United States and internationally in Canada, the Dominican Republic, Japan, South Korea, Hong Kong, and the United Kingdom.

As an associate editor of the “Dialogues” section of Clinical Scholars Review, I had the opportunity to interview Dr. Fitzgerald and am honored to share her insights regarding opportunity, education, lifelong learning, and practice.

**CR:** How and why did you develop Fitzgerald Health Education Associates?

**MF:** At the time I started I did not realize I was starting a company. I was trying to fill a void. I was teaching part-time and precepting a
I recently had a new patient transfer to my practice. I don't typically accept new patients in my practice, as I practice part-time. In my role as an NP, I educate many of the family medicine residents. One of the family practice physicians was leaving our practice. The new patient was referred to me because this physician recognized my expertise in providing primary care for patients with complex mental and physical health problems. The referral reflects the confidence my colleague has that I could manage this patient's considerable psychiatric health care needs. This is a compliment to me and my practice.

I often get curb side consultations which I see maintaining a high-level practice and a compliment. I get referrals from my former students. This is a compliment.

CR: How has the Doctor of Nursing Practice degree impacted the role of the advanced practice nurse?

MF: I believe we are at least one decade before this degree is required for certification. Major NP programs are looking to move to the DNP program for NP preparation. However, new programs and expansions cost schools a lot of money and resources. Had it not been for the economic downturn, we might be further along in programs transitioning to the DNP degree. State institutions have had funding slashed. Private institutions which rely on endowments have watched those endowments shrink. I believe the economy has slowed the transition of education. The LACE consensus model and AACN position recommendations occurred prior to the economic changes. I do not believe anyone participating in the development of this important document could have predicted how the recent recession would impact NP education and the movement to the DNP as the entry degree to advanced practice.

There is also a misconception that if programs transition to DNP preparation for NP education, this will decrease program enrollment. To date, this has not had a change in enrollment. Particularly in the direct entry students, these students are very motivated for the DNP degree.

CR: Has the degree impacted other nursing roles and the delivery of health care services?

MF: Setting the DNP as the entry into advanced practice nursing helps recognize the rigor of current master's level education in nursing
while providing a venue for the APRN student to study areas not currently included, or presented in a less formal fashion, in the current programs; this includes but is not limited to education in evidence-based practice, quality improvement, and systems leadership. The DNP also offers an alternative to research-focused doctoral programs. DNP-prepared nurses can facilitate the implementation of the science developed by researchers prepared in PhD and other research-focused doctorates.

Another important factor is need for APRNs to achieve educational parity with other professions including law, dentistry, social work, pharmacy, medicine, and physical therapy that have established the practice doctorate as entry into practice. This parity is critically important to NP advancement in the area of health care policy and leadership. The NP profession has survived and thrived since the transition from the certificate to master's level as entry into practice. I believe the transition to the DNP will yield similar results.

Over the years, requirements for the profession of nursing have evolved, consistent with needs of the health care environment. Transforming health care delivery recognizes the critical need for clinicians to design, evaluate, and continuously improve the context within which care is rendered. Nurses prepared at the doctoral level with a blend of clinical, organizational, economic, and leadership skills are most likely to be able to critique nursing and other clinical scientific findings and design programs of care delivery that are locally acceptable, economically feasible, and which significantly impact health care outcomes. This will help advance the NP profession beyond its current considerable reach.

CR: How has the DNP degree impacted your work?
MF: Given I earned my DNP after two decades of NP practice, and 36 years after entering the nursing profession, I am often asked why I chose to return to school. For much of my NP career, my work in education, leadership, and practice has been more at the level of a person with an earned doctoral degree. After completing my DNP studies, I finally feel as if my education and professional responsibilities are a much closer match. In addition, I am far more skilled at evaluating clinical evidence and research. I feel like a chamber in my brain that I did not know I had was opened in my doctoral studies at Case where I had amazing faculty, mentors, and classmates. As a speaker, consultant, author, and clinician, I am blessed with ample professional opportunities. At the same time, many more opportunities have come my way post DNP, particularly when a group is looking for a doctorally prepared, actively practicing NP to participate in a given project.

CR: Do you anticipate this degree will influence lifelong learning programs?
MF: You know that chamber in my brain that popped open during my DNP studies? Apparently this has lots of capacity! My zeal for being a lifelong learner is even keener now. I believe most of my DNP colleagues feel the same.

CR: You are credentialed as a diplomate of comprehensive care having successfully completed the requirements of the American Board of Comprehensive Care examination. What motivated you to test and certify? What recommendations do you have for other DNP graduates considering this certification?
MF: I often get asked why I took this examination. There are two main reasons. One, I was eligible. I viewed it as an opportunity to be tested on the broad content of primary and emergency care. I view myself as a role model, particularly to NPs new to practice. I wanted to demonstrate after 25 years I have breadth and depth of practice and hold myself to the high standards that I ask the new grad NPs to do. I performed very well in all areas of this examination and this made me very happy and proud of my performance.

Two, I wanted the experience of taking a high stakes exam. I teach a review course for those taking a high stakes examination so I wanted that opportunity. After 25 years of practice, it is a way to demonstrate a high level of practice.

I believe this certification is the wave of the future and this certification will be sought after as more NPs are prepared with the DNP degree.

There is a DNP page on Facebook and I counsel people on preparing for this examination. While I do not reveal the exam content, I mentor and plant the seed for those considering whether or not to test. I do believe this certification will one day be eligible for use for licensure.
The DCC is a marker of excellence. It demonstrates we took a risk and put ourselves out there to be measured. This is very exciting to do and to be able to pass. “Marvelous!” I can hold myself up to this high standard and demonstrate my knowledge base.

**CR:** What does your company offer in the way of exam preparation for the DNP who wishes to sit for the DCC exam?

**MF:** At this time we offer our family NP review courses, high level pharmacology reviews, and advanced pathophysiology. Taking these three courses will provide a broad-based preparation for the content of the DCC exam, particularly if the NP has been in a specialty practice or not seeing all age groups. This individual will have a strong knowledge base.

**CR:** What is next for you and your business?

**MF:** I look for the next opportunity. This is how my business grows.

**CR:** Any additional thoughts you care to share?

**MF:** I want people to remember to keep your eyes open to opportunity. Never define what you do as being a fill in. Define who you can help in teaching, practice, scholarship, and identify this as your strength. Always know the reason for what you are doing. We need to identify and share our knowledge. Surround yourself with like-minded people, as I have. You will succeed.

Correspondence regarding this article should be directed to Courtney E. Reinisch, DNP, FNP-BC, DCC, College of Nursing, Rutgers, The State University of New Jersey, 180 University Ave., Newark, NJ. E-mail: courtney.reinisch@rutgers.edu
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Articles submitted for consideration discuss clinical practice and patient care; case studies; practice issues, including management, scope of practice, and reimbursement; ethical dilemmas, legal issues, and business practices; innovative methods of teaching and evaluating advanced practice; and profiling the scholarly nature of clinical practice of nursing. As an innovative feature, students in clinical doctoral (DNP) programs will be asked to contribute original articles as well as serve as part of the review team for student submissions.

Manuscript Preparation and Review: Manuscripts must be submitted electronically as a Word document, should be double-spaced with one-inch margins, and the font set to Times New Roman (12 points). A title page separate from the main manuscript must include the title; the names of all authors (including academic degrees and primary affiliations); and the name, mailing address, e-mail address, and telephone number of the corresponding author. The manuscript itself should include a title page without author identifiers. The manuscript should conform to the Publication Manual of the American Psychological Association, 6th Edition. Digital files for any figure should conform to tiff at 300 ppi or eps. Please include written permission for previously published materials. A brief abstract should accompany the manuscript.

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Original Research Contribution: These manuscripts include intervention studies, cohort studies, observational studies, survey research, cost-effectiveness analyses, and decision analyses. Each manuscript should clearly state an objective or hypothesis; design and methods; intervention; outcome measures; results; and limitations, discussion, and conclusion. Manuscripts may be prepared using traditional research format or Guidelines for Quality Improvement Reporting (Qual Saf Health Care 2008;17[Suppl. 1]:i13–i32. doi:10.1136/qshc.2008.029058). An abstract of no more than 200 words is required. Maximum length of manuscript is 3,000 words (not including abstract, tables, figures, and references), with no more than a total of four tables and/or figures.

Systematic Review: These manuscripts critically assess clinical topics in the literature that address factors, including cause, diagnosis, prognosis, therapy, or prevention. All data sources should be searched and selected systematically for inclusion. The search, selection, and critical assessment process should be described in the manuscript. For each data source, the type of study, population, intervention, exposure, and outcomes are described. An abstract of no more than 200 words is required. Maximum length of manuscript is 3,000 words (not including abstract, tables, figures, and references), with no more than a total of four tables and/or figures and no more than 50 references.

Brief Report: These manuscripts are short reports that pertain to evidence-based practice, business of practice, clinical case reports, ethics and law, and education. An abstract of no more than 100 words is required. Recommended length of manuscript is 1,500 words (not including abstract, tables, figures, and references), with no more than a total of two tables and/or figures.

DNP Dialogue or DNP Commentary: These manuscripts may address topic of interest to DNP role as it relates to nursing and interdisciplinary dialogue, research, ethics, health policy, law, education, and current events. Commentaries should be scholarly and clearly presented. Maximum length of submission is 1,000 words of text, with one small table or figure and no more than 10 references.

The DNP Experience: These manuscripts are written in essay form for the purpose of explicating the experiences of the DNP students, residents, faculty, and practitioners as they affect the professional development and scholarship. Abstract is not required. Maximum length of submission is 1,500 words of text, with no more than five references.

Case Studies: These manuscripts present cases of interest related to clinical practice. The manuscript begins with a paragraph that discusses the reason for selecting the case, which is followed by the case vignette. The remaining portion of the manuscript uses scholarly inquiry to define the problem and describe the underlying condition and associated challenges. Best clinical evidence for practice is presented to provide a rationale for therapeutic interventions and actions taken to resolve the case. Recommendations for future practice and building evidence from practice may be presented. An abstract of no more than 150 words is required. Maximum length of manuscript is 2,500 words (not including abstract, tables, figures, and references), with no more than a total of four tables and/or figures and no more than 30 references.

Authors may direct inquiries to: Janice Smolowitz, DNP, EdD, DCC, Editor, Clinical Scholars Review, Senior Associate Dean, Columbia University School of Nursing, 630 West 168th Street, Box 6, New York, NY 10032. E-mail: js928@columbia.edu