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The Primary Care Paradigm Shift

An Overview of the State-Level Legal Framework Governing Nurse Practitioner Practice

Introduction

Like physicians, nurse practitioners now provide primary care in a broad range of settings. Nurse practitioners are registered nurses with advanced training (usually a master's degree) that allows them to treat patients and provide care that is similar in scope to that of a primary care physician. Most nurse practitioners work in collaboration with physicians, as required by the majority of state laws governing nurse practitioner practice. While some states allow nurse practitioners to practice independently without physician involvement, in other states efforts to change laws to permit greater professional autonomy for nurse practitioners have produced friction between the nursing and medical communities.[1] Despite this friction, more and more patients are seeing nurse practitioners for their primary care needs. This article describes how nurse practitioners have been utilized to provide primary care in increasing numbers in recent years, and provides a broad overview of the regulatory framework that governs their practice.

A Brief History and Overview of the Nurse Practitioner Role

Nurse practitioners are educated to "make medical diagnoses while providing care in a nursing model" and are licensed to provide holistic primary care.[2] The nursing profession focuses on building and maintaining medical, social science and behavioral health expertise, and combines that focus with a commitment to counseling, teaching and supporting patients.[3]

The nurse practitioner role was originally created as a response to a physician shortage.[4] The first nurse practitioner training program was developed in 1965 as a pilot program at the University of Colorado School of Nursing. The program, which was the result of collaboration between a nurse and a pediatrician, sought to train providers in a "nursing model focused on the promotion of health in daily living, growth and the development for children in families as well as the prevention of disease and disability."[5] Other nurse practitioner education programs soon began springing up throughout the country.[6]

Nurse practitioners graduating from these education programs began providing care in communities throughout the country. While many nurse practitioners joined physician groups or hospitals and provided care in traditional settings, an innovative concept developed in the late 1970s

"The Primary Care Paradigm Shift" by Ann Ritter, Esq. and Tine Hansen-Turton, JD, MGA, published in Health Lawyer, Volume 20, No. 4, April 2008. *Copyright © 2008 by the American Bar Association. Reprinted with permission.*

that allowed nurse practitioners the opportunity to manage and direct the care of patients. The first federally funded nurse-managed health center in the country was created in 1977 as an affiliate of Arizona State University's School of Nursing.[7] Nurse-managed health centers, as the name suggests, are health centers led by nurses. Nursing staff are responsible for clinic management, and nurse practitioners provide care to patients.[8] Most nurse-managed health centers provide care to vulnerable populations in medically underserved rural and urban communities.[9]

The 1990s saw an "unprecedented" increase in the number of nurse practitioners practicing in the United States,[10] and an increase in practice opportunities for nurse practitioners.[11] The number of nurse practitioners in the United States more than doubled between 1996 and 2001.[12] This increase in professional opportunities in the 1990s was due in part to a coordinated effort by many State Boards of Nursing to define and solidify nurse practitioners' legal authority to prescribe medication to patients.[13]

In recent years, the United States has experienced a steady decrease in the number of medical students choosing to enter the field of family medicine upon graduation.[14] It has not been decisively demonstrated why fewer medical students are choosing to go into primary care following graduation, but the American Academy of Family Physicians ("AAFP") has stated that "factors related to lifestyle and educational debt" increasingly have an impact on physicians' specialty selection.[15] In 2007, only 1,096 Family Practice residency positions (out of a total of 2,603 residency positions offered) were filled by graduating seniors of United States medical schools.[16] In comparison, more than 3,700 family nurse practitioners graduated from masters-level and postmasters-level educational programs in the United States in the same year.[17]

Nurse practitioners now provide care in a variety of settings, and their numbers continue to grow. In 2006, the American College of Nurse Practitioners estimated that there were nearly 145,000 nurse practitioners in the United States.[18] As of 2007, there were approximately 250 nurse-managed health centers that record over 2,500,000 client encounters annually.[19] Since 2000, nurse practitioners have also practiced in retail-based health clinics, which provide care for common episodic ailments.[20]

Nurse Practitioner Quality of Care

Historically, there was little data available regarding nurse practitioner utilization or quality of care, due in part to the fact that the impact of nurse practitioner services was often obscured when nurse practitioners practiced in a physician's office or hospital. Even today in traditional physician practices, data regarding nurse practitioners' productivity, prescriptive practice, and patient revenue generation are often recorded under a physician's name and provider number, both by insurance companies and pharmacists.[21] This can make it difficult to measure the true impact of a nurse practitioner's services.

In one of the earliest attempts by the federal government to collect and analyze information on nurse practitioner quality of care, in 1986 the Office of Technology Assessment of the United States Congress ("OTA") reported in a review of literature and research on nurse practitioner competence that "individual studies comparing NPs [nurse practitioners] and physicians find that the quality of care provided by NPs functioning within their areas of training and expertise tends to be as good as or better than care provided by physicians."[22]

While noting that there were some weaknesses in the methodology of the studies that were summarized, the OTA concluded that nurse practitioners were as good as physicians at providing acute care to patients, their patient outcomes were the same, and their prescribing methods were similarly adequate. The OTA also noted that studies indicated that nurse practitioners were actually better than physicians at "assisting ambulatory patients with chronic problems such as hypertension and obesity" and communicating, counseling, and interviewing patients. In its review of 22 different measures in 17 different studies, the OTA found that studies indicated that physicians achieved better outcomes than nurses in only two areas.[23]

While these early studies provided an indication of the quality of nurse practitioner care,[24] the most methodologically rigorous and well-respected research on nurse practitioner quality of care to date was published in the *Journal of the American Medical Association* in 2000. In this study, a randomized trial was conducted by nurse and physician researchers at Columbia University to compare primary care provided by nurse practitioners and physicians.[25] Researchers randomly assigned 1,316 primary care patients to either nurse practitioners or physicians in an ambulatory care setting where nurse practitioners had the same responsibilities and patient population as primary care physicians. The study concluded that the nurse practitioners' and physicians' patients' outcomes were comparable.[26] The result of the study "strongly supports the hypothesis that, using the traditional medical model of primary care, patient outcomes for nurse practitioner and physician delivery of primary care do not differ."[27] A follow-up study published in 2004 reached the same conclusion.[28]

In 2002, a federally-funded demonstration project was conducted to analyze nurse practitioner primary care services provided using a nursing model (as opposed to "the traditional medical model" that was studied by Columbia researchers). Researchers compared select population-based quality measures among nurse-managed health centers and like providers (*e.g.* physician-managed community health centers serving vulnerable populations). Nurse-managed health centers experienced higher patient retention rates than like providers, and nurse-managed health center patients expressed a high level of satisfaction with the care provided.[29] Results also showed that patients who received care from nurse practitioners at nurse-managed health centers experienced higher rates of generic medication fills and lower hospitalization rates than patients of like providers.[30]

Opposition to the Expansion of the Nurse Practitioner Role

There is a history of friction among nurse practitioners and some members of the medical community.[31] Some physicians view nurse practitioners as inferior providers; however, studies of primary care physicians' views of nurse practitioners have concluded that physicians who work with nurse practitioners have positive attitudes towards them and believe that nurse practitioners enhance the primary care environment.[32]

The American Medical Association ("AMA") and representatives from state medical societies and specialty organizations have been the most vocal opponents to the expansion of the nurse practitioner role. AMA assists state and local medical societies "in identifying and lobbying against laws that allow advanced practice nurses to provide medical care without the supervision of a physician," and opposes the independent practice of nurse practitioners.[33] Physicians who are opposed to increased independence for nurse practitioners argue that nurse practitioners lack the appropriate training to practice medicine.[34] For this reason, they argue that nurse practitioners must be directly supervised by physicians to ensure patient safety.[35] Financial self-interest and concerns about competition may play a role in physicians' opposition to increased clinical independence for nurse practitioners.[36]

The AAFP takes a more measured approach to the issue of nurse practitioner practice and advocates a team approach to providing healthcare, perhaps because many family physicians work closely with nurse practitioners in their practices. For example, the AAFP has taken a position that "supports the training of family practice residents with physician assistants and nurse practitioners in collaborative teams."[37]

Because of the way that the legal framework for nurse practitioner practice is structured, most policy battles about nurse practitioner practice take place at the state level. Despite opposition from some physicians, state governments and legislatures have increasingly adopted laws and regulations that authorize nurse practitioners to prescribe medication and provide primary care to patients with less physician involvement.[38] However, these battles between physicians and nurse practitioners have left their mark on the statutes and regulations that have been enacted, and have led to the creation of a regulatory environment for nurse practitioners that varies widely by state.[39]

The State-Level Legal Framework Governing Nurse Practitioner Practice

While some federal laws, such as those regarding Medicaid and Medicare providers, have an impact on nurse practitioner practice, all laws and regulations governing nurse practitioners' scope of practice, licensure, and physician collaboration requirements are created and enforced at the state level. Many of these laws and regulations are the result of hard-fought compromises among medical and nursing

organizations and many have been crafted incrementally over the course of decades. As a result, there is a great deal of variation in the law governing nurse practitioner practice from state to state.

In many states, nurse practitioner prescriptive authority is governed by statute.[40] States vary as to which state agency holds the power to impose regulations impacting nurse practitioners. Many states, such as Maryland and Massachusetts, have convened joint boards comprised of nurses and physicians to create regulations governing nurse practitioner practice.[41] In some states, like Oregon, the state Board of Nursing has the exclusive power to regulate the practice of nurse practitioners.[42]

However, even in some states where the Board of Nursing is charged by the legislature with regulating the practice of nurse practitioners, state medical boards may also create regulations that impact nurse practitioner practice. For example, in Georgia, where the Board of Nursing has the power to "regulate advanced nursing practice," the state Board of Medical Examiners also has the power to promulgate regulations governing physicians' professional relationships with nurse practitioners.[43] For this reason, it is important to consult statutes, nursing regulations and medical regulations in order to fully understand the scope of practice and authority of nurse practitioners.[44]

Nurse Practitioner Licensure

Nurse practitioners are licensed by the Board of Nursing in their state of practice. The vast majority of states require nurse practitioners to be certified by a national accrediting organization (such as the American Academy of Nurse Practitioners or the National Certification Board of Pediatric Nurse Practitioners) in order to be licensed.[45] Originally nurse practitioners were not required to hold master's degrees in nursing in order to be certified and licensed as advanced practice nurses. Today, new nurse practitioner graduates are required to hold a master's degree from an accredited institution in order to be licensed.[46]

Currently, nurse practitioner degree programs offer the opportunity to specialize (and become certified) within certain practice areas. Recent data from the American Association of Colleges of Nursing indicate that over half of all nurse practitioner students graduate with a family nurse practitioner degree.[47] The next three most prevalent specialties among nurse practitioner graduates are adult primary care, pediatric primary care, and women's health.[48] Nurse practitioners with a family primary health certification (commonly known as Family Nurse Practitioners or "FNP"s) tend to be the most sought after by employers, since they are capable of providing primary care to all patients, regardless of age.[49]

Nurse Practitioner Scope of Practice

An article published in the *New England Journal of Medicine* in 1994 stated that nurse practitioners were able to manage 80-90 percent of the care provided to patients without physician referral or consultation.[50] Because of a growing understanding of the capacity of nurse practitioners to provide primary care, the profession has seen its level of

responsibility, and its legal authority to provide services, grow significantly in recent decades. Today, nurse practitioners provide primary care services that are similar to those provided by family physicians.

Nurse practitioners have a broad scope of practice. While the specificity of individual scope of practice laws varies from state to state, the language of Maryland's scope of practice regulation is typical of scope of practice laws throughout the country:

A nurse practitioner may perform independently the following functions under the terms and conditions set forth in the written agreement [between the nurse practitioner and a licensed physician]:

> *(1) Comprehensive physical assessment of patients;*
> *(2) Establishing medical diagnosis for common short term or chronic stable health problems;*
> *(3) Ordering, performing, and interpreting laboratory tests;*
> *(4) Prescribing drugs;*
> *(5) Performing therapeutic or corrective measures;*
> *(6) Referring patients to appropriate licensed physicians or other health care providers;*
> *(7) Providing emergency care.*[51]

This typically expansive definition of nurse practitioner scope of practice allows nurse practitioners to provide comprehensive primary care to a wide range of patients that "can both substitute for and complement the care of physicians."[52] This flexibility allows nurse practitioners to provide care in a wide range of practice settings.

Nurse practitioners can prescribe medication to patients in all 50 states. The last state to allow nurse practitioners to prescribe medication was Georgia, which enacted a law granting prescriptive authority to nurse practitioners in 2006.[53]

Nurse Practitioner and Physician Interaction

Legal requirements regarding the relationship between nurse practitioners and physicians lack standardization. In some states, physicians must "supervise" nurse practitioners.[54] In other states, nurse practitioners and physicians are placed on more equal footing and required to "collaborate" with one another.[55] Some states require physicians to "delegate" their prescriptive authority to the nurse practitioners that they supervise, while others allow nurse practitioners to practice and prescribe medication independently, without any physician involvement.[56] In addition to these more common terms, a few states have created novel ways to describe the relationship between nurse practitioners and physicians. For example, Hawaii requires nurse practitioners and physicians to have a "collegial working relationship," which has a meaning similar to "collaboration."[57]

Terms such as "independent," "collaboration," and "supervision" are used most widely in state regulations, but their interpretations vary. What is described as "supervision" in one state may, in practice, be more akin to "collaboration" in another state.[58] However, even if this is the case for nurse practitioners working in the field, studies have shown that physician oversight laws that include

restrictive language correlate with restrictive managed care contracting policies regarding nurse practitioners.[59]

In some states, nurse practitioners who do not prescribe medication are subject to a different standard than prescribing nurse practitioners. For example, in Minnesota, nurse practitioners may diagnose and treat patients if they have an oral "collaborative management plan" with a physician, but may not prescribe medication unless a physician delegates that power to them in writing.[60] This is rarely an issue in practice, however, since there are few practicing nurse practitioners who do not prescribe medication. Thus, this article focuses on regulatory language that describes physician involvement requirements for nurse practitioners with prescriptive authority.

Twenty-five states require nurse practitioners to collaborate with physicians in order to practice and prescribe medication. (This figure includes states such as Hawaii, which do not use the term "collaboration" in laws governing nurse practitioner practice, but nevertheless have collaboration-like requirements, as noted above.) In states with collaboration requirements for nurse practitioner practice, nurses and physicians are required to create written agreements that set forth terms and expectations for the collaborative relationship. In these states, nurse practitioners and physicians are required by law to work together as professionals on equal or near-equal terms.[61]

Fourteen states require physician supervision or delegation in order for nurse practitioners to practice. Even though the scope of practice and daily functions of nurse practitioners in states with these types of requirements are not significantly different from those of nurse practitioners in states with collaborative requirements, they are based on a fundamentally different understanding of the relationship between the nursing and medical professions. These types of regulations often explicitly tie the nurse practitioner's authority to practice to that of the supervising physician, who must delegate his or her power to the non-physician providers that (s)he supervises. In other words, even if there is little practical difference between day-to-day nurse practitioner practice in a collaborative state and a supervisory state, the language of "supervision" and "delegation" is based on an underlying assumption that there is a hierarchy among the different healthcare professions, and that physicians hold the uppermost position.

Finally, eleven states require no physician involvement for nurse practitioners to practice and prescribe medication.[62] In these states, nurse practitioners often collaborate with physicians and work in teams with physicians; however, there is no legal requirement that they do so.

States that require collaboration, supervision, or delegation for nurse practitioner practice require nurses and doctors to enter into written agreements that describe the responsibilities and expectations of both parties.[63] In most states, these are called "collaborative agreements," although some states call them by

different names, such as "standard care arrangements."[64] In some states, nurses and physicians are required to write "protocols" that serve a similar purpose; however, this type of regulatory language tends to occur in states where physicians have shown greater opposition to expansion of the nurse practitioner role.[65] In states where nurse practitioners may practice independently, nurse practitioners are not required to enter into written agreements with physicians.

Even when state law mandates physician supervision or oversight of nurse practitioners, in most cases it need not occur on-site. Most states allow professional collaboration and physician supervision to occur remotely.[66] Only seven states have on-site supervision requirements for physicians working with nurse practitioners, a list of which is provided in Table 1. Many states have also modified physician collaboration or supervision requirements to allow more flexibility for nurse practitioners who practice in medically underserved areas.[67]

In addition to laws describing the nature of the professional relationships between physicians and nurse practitioners, some states have regulatory provisions requiring that physicians review a certain percentage of nurse practitioners' charts.

TABLE 1:	**States With On-Site Requirements**
ALABAMA	Physician must be on-site during 10% of nurse practitioner's practice time[68]
ILLINOIS	Once per month (duration of on-site visits unspecified)[69]
MISSOURI	In cases where nurse practitioner is providing care for acute illness, chronic illness, or injuries, physician must be on-site once every two weeks (duration of on-site visits unspecified)[70]
S. DAKOTA	Physician must spend one hour on-site for every 10 hours of nurse practitioner practice[71]
TENNESSEE	Once per month (duration of on-site visits unspecified)[72]
TEXAS	Physician must be on-site during 20% of nurse practitioner's practice time[73]
VIRGINIA	Physician must "regularly practice" at remote site where nurse practitioner practices (duration of on-site visits unspecified[74]

TABLE 2:	States With Quantitative Chart Review Requirements
ALABAMA	10% of patient charts (generally); 100% of adverse outcomes[75]
GEORGIA	25% of patient charts (generally); 100% of adverse outcomes; 100% of charts involving prescriptions for controlled substances[76]
MONTANA	The lesser of 15 charts (quarterly) or 5% of all patient charts (may be reviewed by a physician or nurse practitioner peer)[77]
TENNESSEE	20% of all patient charts[78]
TEXAS	10% of all patient charts[79]

States with these types of regulations are in the minority, and most states (even many of those with "supervision" or "delegation" requirements) allow nurses and doctors to use their own judgment to make decisions about what constitutes appropriate chart review. A list of states with quantitative chart review requirements can be found in Table 2.

Another category of law related to physician interaction with nurse practitioners takes the form of maximum oversight ratios. In some states, regulations prohibit physicians from collaborating with or supervising multiple nurse practitioners at one time. The most commonly-found maximum collaboration ratio regulation states that one physician may not enter into collaborative agreements with more than four nurse practitioners.[80] In some states, such as Pennsylvania, exceptions are made for physicians who support multiple part-time nurse practitioners. In these cases, physicians may enter into collaborative agreements with more than four nurse practitioners, provided that no more than four of those nurse practitioners provide care to patients at the same time.[81] States with these types of ratios are in the minority, however, and most states allow physicians to use their own professional judgment to determine how many nurse practitioners they can safely support at one time.

The Current Political Climate For Nurse Practitioners

Bi-partisan policymakers and healthcare reform advocates have recently taken an increased interest in nurse practitioners. For example, in 2006, Democratic Governor Edward G. Rendell of Pennsylvania based his statewide healthcare reform plan on the concept that access to healthcare would improve if state laws were changed to "free nurse practitioners to do anything they are capable of doing."[82] At the same time, conservative advocates for market-based healthcare reform strategies have seized on retail-based health clinics staffed by nurse practitioners as a market-driven solution to healthcare access problems.[83] In 2007, researchers and thought leaders from the Harvard School of Business and the Pacific Research Institute stated that increased utilization of nurse practitioners could

lead to greater efficiency and lower costs within the healthcare industry.[84]

Leading presidential candidates such as Hillary Clinton and John McCain have also incorporated nurse practitioners into their presidential campaigns' healthcare reform plans.[85] While campaigning for the 2008 presidential election, Hillary Clinton spoke of her intent to "empower advanced practice nurses" and declared in a speech that it would be impossible to "reach our goals for [increased] preventive care if we don't have better utilization of nurses."[86]

Despite the increasing popularity of nurse practitioners among lawmakers, opposition to independent nurse practitioner practice continues to exist. In recent months, proposed legislation that would decrease the professional autonomy of nurse practitioners has been framed in terms of opposition to retail-based health clinics. For example, in February 2007, Illinois State Representative Mike McAuliffe introduced a bill with the state medical society's backing that would have significantly increased supervision requirements for nurse practitioners working in retail-based health clinics.[87] New regulations that would restrict nurse practitioner practice in retail health clinics are currently in the works in Tennessee, with significant backing from the state's medical society.[88]

While there is a lack of uniformity among practice regulations and some continuing opposition to their professional independence, nurse practitioners have made great professional gains in recent years and have seen their autonomy and scope of practice expand significantly since the early 1990s.[89] As more lawmakers and health policy experts look to the increased utilization of nurse practitioners as an opportunity to improve healthcare delivery, nurse practitioners' numbers and opportunities to practice will likely continue to grow.

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Endnotes

1 Tine Hansen-Turton, et. al., *Convenient Care Clinics: the Future of Accessible Health Care,* 10 DIS. MANAG. 61, 68 (2007).

2 HEALTH RESOURCES AND SERVICES ADMINISTRATION, NATIONAL CENTER FOR HEALTH WORKFORCE ANALYSIS BUREAU OF HEALTH PROFESSIONS, A COMPARISON OF CHANGES IN THE PROFESSIONAL PRACTICE OF NURSE PRACTITIONERS, PHYSICIAN ASSISTANTS, AND CERTIFIED NURSE MIDWIVES: 1992 and 2000, 8 (2002), *available at* ftp://ftp.hrsa.gov/bhpr/workforce/scope1992-2000.pdf (last visited February 7, 2008).

3 *Id.* To learn how nurse practitioners differ from physician assistants, please refer to chapter two of the cited report for an excellent summary of the different origins of the two professions. Nursing's emphasis on health promotion, counseling and education distinguishes the "nursing model" theory of care from the "medical model" theory of care. Nurse practitioners are educated using a combination of medical and nursing theories, and are trained to practice with greater independence than physician assistants. Physician assistants are educated using only a medical model, and are trained to assist physicians in their practice.

4 MATHY MEZEY, ET AL., NURSE PRACTITIONERS: EVOLUTION OF ADVANCED PRACTICE 4 (2005).

5 Loretta Ford, *Nurse Practitioners: The Evolution of Primary Care,* 18 J. OF NURS, SCHOLARSHIP 177, 177-178 (1986).

6 In 2007, the American Association of Colleges of Nursing reported that 324 United States schools offered master's-level nurse practitioner education programs. BERLIN ET. AL., AMERICAN ASSOCIATION OF COLLEGES OF NURSING, 2006-2007 ENROLLMENT AND GRADUATIONS IN BACCALAUREATE AND GRADUATE PROGRAMS IN NURSING 63 (2007).

7 Arizona State University School of Nursing Announcement of CHSC Anniversary, http://nursing.asu.edu/news/articles/chscanniversary.htm (last visited January 20, 2008).

8 DONNA L. TORRISI & TINE HANSEN-TURTON, COMMUNITY AND NURSE-MANAGED HEALTH CENTERS: GETTING THEM STARTED AND KEEPING THEM GOING 2 (2005).

9 *Id.* at 3.

10 Joyce Pulcini & Mary Wagner, *Nurse Practitioner Education in the United States: A Success Story,* 6 CLINICAL EXCELLENCE FOR NURS. PRAC. 51, 53 (2002).

11 CENTER FOR HEALTH WORKFORCE STUDIES AT THE UNIVERSITY AT ALBANY OF THE STATE UNIVERSITY OF NEW YORK, A COMPARISON OF CHANGES IN THE PROFESSIONAL PRACTICE OF NURSE PRACTITIONERS, PHYSICIAN ASSISTANTS, AND CERTIFIED NURSE MIDWIVES: 1992 and 2000, *available at* http://bhpr.hrsa.gov/healthworkforce/reports/scope/scope1-2.htm (last visited January 24, 2008).

12 Pulcini & Wagner, *supra* note 10.

13 *Id.*

14 American Academy of Family Physicians, 2007 Match Summary and Analysis, http://www.aafp.org/online/en/home/residents/match/summary.html (last visited January 23, 2008).

15 Perry A. Pugno, et. al., *Entry of US Medical School Graduates Into Family Medicine Residencies: 2006–2007 and 3-year Summary,* 39 FAM. MED. 550, 550, *available at* http://www.stfm.org/fmhub/fm2007/September/Perry550.pdf (last visited February 11, 2008).

16 NATIONAL RESIDENCY MATCHING PROGRAM, RESULTS AND DATA 2007 MAIN RESIDENCY MATCH 29 (2007), *available at* http://www.nrmp.org/data/resultsanddata2007.pdf (last visited January 25, 2008). Ultimately, approximately 88% of available residency positions in family medicine were filled in 2007. The majority of those positions unfilled by graduates of United States medical schools were filled by graduates of international medical schools.

17 BERLIN ET. AL., AMERICAN ASSOCIATION OF COLLEGES OF NURSING, *2006-2007 ENROLLMENT AND GRADUATIONS IN BACCALAUREATE AND GRADUATE PROGRAMS IN NURSING* 63, 65 (2007).

18 American College of Nurse Practitioners, What Is a Nurse Practitioner?, http://www.acnpweb.org/i4a/pages/index.cfm?pageid=3479 (last visited January 25, 2008).

19 National Nursing Centers Consortium, The Nurse-Managed Health Clinic Investment Act of 2007, http://www.nncc.us/policy/NMHCAct.pdf (last visited January 25, 2008).

20 Hansen-Turton, *supra* note 1, at 62.

21 Thomas Mackey, et. al, Nurse Practitioner Referral Patterns In Primary Care/ Occupational Health Care Settings, Internet Journal of Advanced Nursing Practice, http://www.ispub.com/ostia/index.php?xml FilePath=journals/ijanp/vol2n2/referral.xml (last visited January 24, 2008).

22 U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, NURSE PRACTITIONERS, PHYSICIAN ASSISTANTS, AND CERTIFIED NURSE-MIDWIVES: A POLICY ANALYSIS 19 (1986), *available at* http://www.princeton.edu/ ~ota/disk2/1986/8615/8615.PDF (last visited February 7, 2008).

23 *Id.* at 20-21. The two outcomes for which physicians scored higher than nurse practitioners were "management of problems requiring technical solutions" and "level of activity limitation and anxiety in patients with chronic problems." The OTA found that nurse practitioners and physicians provided equivalent care regarding nine other outcomes. The OTA also found that nurse practitioners provided better care than physicians with regard to 12 other outcomes.

24 *See* D. Sackett, et al. *The Burlington Randomized Trial of the Nurse Practitioner: Health Outcomes of Patients,* 80 ANNALS OF INTERNAL MED. 137 (1974); H. Sox. *Quality of Patient Care by Nurse Practitioners and Physician's Assistants: A 10 year Perspective Study,* 91 ANNALS OF INTERNAL MED. 459 (1979).

25 Mary Mundinger, et al., *Primary Care Outcomes in Patients Treated by Nurse Practitioners or Physicians,* 283 JAMA 59 (2000).

26 *Id.* at 59.

27 *Id.* at 68.

28 *See* E. Lenz, et. al., *Primary care outcomes in patients treated by nurse practitioners or physicians: Two-year follow-up,* 61 Med. Care Res. Rev. 332 (2004).

29 T. Hansen-Turton, *The Nurse-Managed Health Center Safety Net: A Policy Solution to Reducing Health Disparities,* 40 NURS. CLINICS OF N. AMER. 729, 734-735 (2005).

30 *Id*. at 735.

31 Leslie Bennets, New York Law Puts Nurse Practitioners in Limbo, N.Y. TIMES, Nov. 4, 1981, available at http://query.nytimes.com /gst/fullpage.html?sec=health&res=9C05EED 71139F937A35752C1A967948260 (last visited February 8, 2008). In this article about a proposed law to confer legal status on nurse practitioners, the Executive Vice President of the Medical Society of New York State is quoted as saying: "We [the members of the Medical Society] object to legal status for nurse practitioners. … What we are afraid of is nurse practitioners opening up their own offices and putting out a shingle. A lot of these gals are practicing medicine, and we feel if nurses want to do that they should go to medical school."

32 Mary Aquilino, et. al., *Primary Care Physician Perceptions of the Nurse Practitioners in the 1990s. 8* ARCH FAM MED 224, 227 (1999).

33 AMERICAN MEDICAL ASSOCIATION, *H-35.988 Independent Practice of Medicine by "Nurse Practitioners"; AMERICAN MEDICAL* ASSOCIATION, *H-160.947 Physician Assistants and Nurse Practitioners.* These policies can be found using AMA's online Policy Finder, available at http://www.ama-assn.org/ ama/noindex/category/11760.html (last visited February 8, 2008).

34 Keith Darce, *Are retail clinics a healthy choice?,* SAN DIEGO UNION-TRIBUNE, Nov. 7, 2007, *available at* http://www.signonsandiego.com/ uniontrib/20071107/news_1n7clinics.html (last visited February 8, 2008). In this article about nurse practitioners in retail-based clinics, the Executive Director of the San Diego County Medical Society is quoted as saying: "Physician oversight of allied health professionals must be maintained. If you want to be a doctor, go to med school."

35 *Id.*

36 UNIVERSITY OF CALIFORNIA, SAN FRANCISCO, OFFICE OF THE HEALTH PROFESSIONS, OVERVIEW OF NURSE PRACTITIONER SCOPES OF PRACTICE IN THE UNITED STATES 5 (2007), *available at* http://futurehealth.ucsf.edu/ pdf_files/NP%20Scopes%20discussion%20Fall %202007%20121807.pdf (last visited February 8, 2007).

37 AMERICAN ASSOCIATION OF FAMILY PHYSICIANS, *Policy Center One-Pager,* http://www.aafp.org/afp/20011015/policy.html (last visited February 11, 2008).

38 The Center for Health Workforce Studies at the University at Albany of the State University of New York, "A Comparison of Changes in the Professional Practice of Nurse Practitioners, Physician Assistants, and Certified Nurse Midwives: 1992 and 2000," available at: http://bhpr.hrsa.gov/healthworkforce/ reports/scope/scope1-2.htm

39 UNIVERSITY OF CALIFORNIA, *supra* note 36, at 21.

40 *See, e.g.* N.H. REV. STAT. ANN. § 326- B:11(III) (2007); FLA. STAT. ANN. § 464.012(3) (West 2007).

41 MD. CODE ANN. HEALTH OCC. § 14- 306(d)(1) (West 2007); MASS. GEN. LAWS ANN. ch. 112 § 80B (2007).

42 OR. REV. STATCODE ANN. § 678.380 (West 2007).

43 *See, e.g.,* Ga. Code Ann. § 43-26-5(11) (2007) (setting forth the power of the Board of Nursing to "regulate advanced nursing practice"); Ga. Code Ann. § 43-34-26.1 (2007) (setting forth physician oversight requirements for advanced practice nurses).

44 This article does not describe any special physician oversight or practice requirements that may apply to nurse practitioners who have recently graduated from education programs or are just beginning their practice.

45 *See, e.g.,* ILL. ADM. CODE tit. 68, § 1305.20 (2008) (requiring evidence of national certification from specified national certifying bodies).

46 *See, e.g.,* N.M. STAT. ANN. § 61-3-23.2(A)(2) (2007).

47 BERLIN ET. AL, *supra* note 17, at 63.

48 *Id.*

49 Hansen-Turton, *supra* note 1, at 66.

50 Mary Mundinger, *Advanced Practice Nursing – Good Medicine for Physicians,* 330 N. ENGL. J. MED. 211, 213 (1994).

51 MD. REGS. CODE tit. 10, § 27.07.02.A (2007)

52 CENTER FOR HEALTH WORKFORCE STUDIES, *supra* note 11, at 24.

53 S.B. 480, 148th Gen Assem., Reg. Sess. (Ga. 2006) (enacted).

54 *See, e.g.,* Okla. Stat. Ann. tit. 59 §567.4a(1) (West 2007).

55 *See, e.g.,* WIS. ADMIN. CODE § N 8.02(6) (2007) (definition of collaboration); WIS. ADMIN. CODE § N 8.10(7) (2007) (mandating that nurse practitioner enter into a collaborative agreement with at least one physician).

56 *See, e.g.,* Ga. Code Ann. § 43-34-26.1(b)(1)(B) (2007) (a physician "may delegate to a nurse…the authority to order controlled substances"); N.M. Stat. Ann. § 61-3-23.2(B)(2) (2007) (nurse practitioners may "practice independently… and carry out health regimens, including the prescription and distribution of dangerous drugs and controlled substances").

57 HAWAII CODE R. § 16-89C-5 (2007).

58 *Compare* 21 N.C. ADMIN. CODE 36.0810 (2007) and 21 N.C. ADMIN. CODE 36.0802 (2007) (requiring physician supervision, a written agreement, and authorizing nurse practitioners to diagnose, treat, refer and prescribe) *with* MD. CODE REGS. 10.09.01.02 (2007) and MD. CODE REGS. 10.27.07.02 (2007) (requiring physician collaboration, a written agreement, and authorizing nurse practitioners to diagnose, treat, refer and prescribe).

59 T. Hansen-Turton, et. al., *Insurer Policies Create Barriers to Health Care Access and Consumer Choice,* 24 NURS. ECON. 204, 210-211 (2006).

60 MINN. STAT. ANN. § 148.171 (West 2007) (defining a collaborative management plan); MINN. STAT. ANN. § 148.235 (2007) (stating that a "nurse practitioner who has a written agreement with a physician… that defines the delegated responsibilities related to the prescription of drugs… may prescribe and administer drugs").

61 *See, e.g.,* HAWAII CODE R. § 16-89C-3 (Weil 2007) (defining the working relationship among nurse practitioners and physicians as one where "the power or authority [is] vested equally in each of the working parties.")

62 *See, e.g.,* OR. REV. STAT. ANN. § 678.390 (West 2007) (setting forth the Board of Nursing's authority to grant prescriptive authority to nurse practitioners if certain requirements unrelated to physician involvement are met); N.H. REV. STAT. ANN. § 326-B:11(III) (2007) (stating that a nurse practitioner "shall have plenary authority to possess, compound, prescribe, administer, and dispense and distribute to clients controlled and non-controlled drugs").

63 *See, e.g.,* W. VA. CODE ST. R. § 19-08-3.1(b)(2007) (stating that a collaborative agreement between a nurse practitioner and a physician must describe "individual and shared responsibilities of the advanced nurse practitioner… and the physician.")

64 *See, e.g.,* 49 Pa. Code § 18.55 (2007) ("collaborative agreement"); OHIO REV. CODE ANN. § 4723.431 (West 2007) ("standard care arrangement").

65 *See, e.g.,* Ga. Code Ann. § 43-34-26.1(7) (2007).

66 *See, e.g.,* 225 Ill. Comp. Stat. 65/15-15(b) (stating that a collaborative agreement "shall not be construed to require the personal presence of a physician at all times at the place where services are rendered. Methods of communication shall be available … in person or by telecommunications").

67 *See, e.g.,* MO. CODE REGS. ANN. tit. 20 § 2200-4.200(2)(B)(2007).

68 ALA. ADMIN. CODE r. 610-X-5-.08(4) (2007).

69 ILL. ADMIN CODE tit. 68 § 1305.35(a)(2)(2007).

70 MO. CODE REGS. ANN. tit. 20 § 2150-5.100(4)(c)(2007).

71 S.D. ADMIN. R. 20:62:03:03 (2007).

72 TENN. COMP. R. & REGS. 0880-6-.02(9) (2007).

73 TEX. OCC. CODE ANN. § 157.0541(c) (Vernon 2007).

74 18 VA. ADMIN. CODE § 90-40-100(B)(2007).

75 ALA. ADMIN. CODE r. 610-X-5-.08(9)(g) (2007).

76 GA. COMP. R. & REGS. 360-32-.02(7) (2007).

77 MONT. ADMIN. R. 8.32.1508(2)(a) (2007).

78 TENN. COMP. R. & REGS. 0880-6-.02(8) (2007).

79 TEX. OCC. CODE ANN. § 157.0541(c)(2) (Vernon 2007).

80 *See e.g.* Va. Code Ann. §54.1-2957.01(E)(2) (2007).

81 *See, e.g.,* 49 Pa. Code §21.287 (2007).

82 Tracie Mauriello, *Rendell wants more health care by nurse practitioners,* PITTSBURGH POSTGAZETTE, Dec. 12, 2006, *available at* http://www.post-gazette.com/pg/06346/745432-85.stm (last visited January 25, 2008).

83 Mark D. Smith, *Disruptive Innovation: Can Health Care Learn From Other Industries? A Conversation with Clayton M. Christensen,* HEALTH AFF. ONLINE, Mar. 13, 2007, *available at* http://www.inhealth.org/MediaCenter/20070313_Sixth_Interview_Christensen_and_Iglehart.pdf (last visited January 25, 2008); Diana Ernst & John Graham, *California's governor need not look far to identify the cause of the health care affordability crisis: He works every day at its center,* MED. PROGRESS TODAY, Feb. 16, 2007, *available at* http://www.medicalprogresstoday.com/spotlight/spotlight_indarchive.php?id=1576 (last visited January 25, 2008).

84 *Id.*

85 Laura Meckler, *McCain's Health-Care Divergence,* WALL ST. J., Oct. 11, 2007, at A6.

86 Hillary Rodham Clinton, Speech at the Dartmouth-Hitchcock Medical Center (August 23, 2007), *available at* http://www.hillaryclinton.com/news/speech/view/?id=3006 (last visited January 24, 2008).

87 ILLINOIS STATE MEDICAL SOCIETY, *Press Release: Citing Patient Safety Concerns, Doctors Seek Oversight of Retail Health Clinics* (Mar. 1, 2007), *available at* http://www.isms.org/newsroom/newsrelease/nr2007_0301.html (last visited February 11, 2008). While Illinois does not currently have a maximum ratio for collaborating physicians who support nurse practitioners, this bill would have instituted one of the strictest in the country by prohibiting a physician from collaborating with more than two nurse practitioners in a retail-based health clinic. The bill died in committee.

88 Gethan Ward, *Fast growth of retail clinics concerns doctors,* THE TENNESSEAN, Jan. 24. 2008, *available at* http://www.tennessean.com/apps/pbcs.dll/article?AID=/D4/20080124/BUSINESS/801240329 (last visited February 11, 2008).

89 CENTER FOR HEALTH WORKFORCE STUDIES, *supra* note 11, at 24.