STATEMENT
Of
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To
Senate Committee on Health Education Labor and Pensions
Subcommittee on Primary Health and Aging
On
"Successful Primary Care Programs: Creating the Workforce We Need."

April 23, 2013

Thank you Chairman Sanders, Ranking Member Burr, and members of the Committee. I appreciate the opportunity to speak with you on behalf of the 155,000 Nurse Practitioners across the United States. I would also like to take this time to note that I currently serve as Vermont's state representative for the American Association of Nurse Practitioners (AANP), which is the largest nurse practitioner association in the country.

My name is Deborah Wachtel. I have been a registered nurse since 1975 and a nurse practitioner since 1986. I have a Bachelor's degree in Community Health Sciences, a Master's Degree in Public Health, and a Master's Degree in Nursing, and I am currently in a Doctor of Nursing Practice (DNP) program. My field of practice is as an adult nurse practitioner; my focus has always been toward primary care, first in women's health and now in chronic disease prevention and management. My current work as an nurse practitioner (NP) includes work with diabetes, obesity, cardiovascular disease, and endocrine disorders. In addition to my role with AANP, I am also the president of the Vermont Nurse Practitioner Association, a governor appointed Commissioner on the Vermont Blue Ribbon Commission on Nursing, and represent NPs on the Vermont Action Coalition which focuses on advancing the Institute of Medicine (IOM) recommendations on the Future of Nursing.

NPs have been providing primary care for half a century and are rapidly becoming the health care provider of choice for millions of Americans. The vast majority of nurse practitioners throughout the United States are currently providing primary care services. This includes adult, family, gerontological, pediatrics and women's health nurse practitioners. In fact, 88% of NPs are prepared to be primary care clinicians and nearly 70% are currently practicing in a primary care setting. Currently in Vermont there are 441 practicing NPs. As clinicians that blend clinical expertise in diagnosing and treating health conditions with an added emphasis on health promotion and disease prevention, NPs bring a comprehensive perspective to health care. NPs are clinicians with advanced education and training who provide primary, acute and specialty healthcare service including diagnosis and treatment of acute and chronic illnesses-from a straightforward pharyngitis to complex multiple health problems-ordering, performing, supervising and interpreting diagnostic tests including laboratory tests and x-rays, prescribing medications and other treatments and managing patients' overall health care. *I have attached*

AANP's NP Facts, Scope of NP Practice, Standards of Practice, Quality of NP Practice, and NP Cost-Effectiveness documents to my testimony for your reference.

This comprehensive perspective is deeply rooted in our educational background. All NPs must complete a master's or doctoral degree program, and have advanced clinical training beyond their initial professional registered nurse preparation. Didactic and clinical courses prepare nurses with specialized knowledge and clinical competency to practice in primary care, acute and long-term health care settings. Growth in our nation's nurse practitioner programs has steadily increased with the demand for primary care. According to the American Association of Colleges of Nursing (AACN), since 2010, enrollments in master's and doctor of nursing practice programs grew by 33% yet more encouraging, since 2010, graduations from these programs increased by 40%. In the 2012 academic year, 46,353 students were enrolled and 11,540 students graduated from nurse practitioner programs that prepared them as primary care providers. While this growth rate is critical to addressing the shortage of primary care providers, it is sobering to note that our schools of nursing also turned away 9,640 qualified applicants to primary care nurse practitioner programs due to faculty shortage, budget restraints, and lack of clinical sites. This represents a 54% increase in applicants turned away since 2010. In particular, the shortage of nurse faculty creates a bottleneck for sustainable growth in our NP programs. Across the country, nearly 1,800 vacant faculty positions were reported by AACN member schools in academic year 2011-2012. It is critical that investments are made to reduce the barriers that prohibit schools of nursing from accepting primary care nurse practitioner students.

In my home state of Vermont, the University of Vermont (UVM) responded to AACN's survey; which shows that the University graduated 24 students and currently has 84 students enrolled in primary care NP programs. At the same time, the University turned away 48 qualified applicants; this is double the number of students graduated. According to Health Resources and Services Administration (HRSA), 6,333 Vermont residents are living in 30 primary care Health Professional Shortage Areas. Vermont's demand for primary healthcare is emblematic of the need at the national level. Nurse practitioners can help to meet that need.

UVM has offered graduate level education for Primary Care NPs since 1999. The NP program at UVM includes Family, Adult and Psychiatric-Mental Health NPs. The vast majority of these graduates stay in Vermont to practice and approximately 90% practice in primary care settings. The NP students have applied for HRSA Graduate Traineeship funds, and the awards have been as much as $1400 per year (per student) over the past eight years, though many students received no award. In 2012, through the Affordable Care Act, UVM was awarded Traineeship funds for $350,000 for two years. This substantial increase in funds has helped to increase support for 48 students, whose awards ranged from $5200 to $14,500 for this past year. We are hopeful that this HRSA funding will continue in subsequent years. UVM strives to increase diversity within their program, and all students are expected to participate in caring for populations in rural and underserved areas. Clinical rotations are spread throughout our rural state.

Unfortunately, UVM faces the same faculty shortages felt across the nation with 1 full time tenure track NP position vacant for 4 years, despite searches for the position every year. Additionally, we have had a full time clinical track NP position that has been filled by faculty for 2-3 years only, representing turnover of faculty and disruption of coverage for classes.

To meet the demand for, and adhere to, the highest level of quality care standards, NPs undergo rigorous national certification, periodic peer review, clinical outcome evaluations, and observe a code for ethical practices. Continuing education and professional development are also essential to maintaining clinical competency. It is important to note that NPs are licensed in all states and the District of Columbia and practice under the rules and regulations of the state in which they are licensed. We provide care in many types of settings including clinics, hospitals, emergency rooms, urgent care sites, private physician or NP practices, nursing homes, schools, colleges, and public health departments. In the state of Vermont, NPs are able to practice at the full scope of their education and credential; patients have benefited from this privilege for over 2 years. Several states in my region including, Rhode Island, Maine, and New Hampshire have had autonomous practice for nearly two decades, and patients in those states have benefited from full and direct access to safe, high quality NP services.

The vast majority of nurse practitioners in Vermont practice in rural, primary care settings, many in advanced primary care practices often referred to as "the patient medical home." This innovative Vermont-born network of primary care practices is known as The Vermont Blueprint for Health. The growing network of practices, which number over 100, span the entire state and the numbers are increasing as new practices join. The focus is interdisciplinary and inter-professional primary health care, utilizing all providers and health care workers at the full extent of their credentials and education. Outcome data and benchmarking will drive the reimbursement schemes and focus of chronic disease prevention and management programs. There are approximately 122 nurse practitioners currently practicing at these health centers. This is yet another example of how we can utilize a highly educated workforce to improve the health of our citizens in a cost-effective model of high quality, patient-centered care.

A nurse owned and managed primary care health center opened its doors in southern Vermont on March 5, 2012, in response to 9,000 patients who were without primary care providers. This NP practice saw approximately 2000 patient visits in its first year. The NP sees between 25-40 patients daily with 33% on Medicaid, 35% on Medicare, 5% uninsured, and the rest with private insurance and is currently booking into July. In the last 6 years, this southern county lost 14 primary care physicians and will be losing 2 more this year. Having full practice authority has made it possible for the patients in this community to have access to high quality primary care but is not without remaining barriers. The limitation of NPs to order home care under current law has created a significant barrier for addressing patient needs adding additional expense and on occasion prolonged hospital stays or avoidable re-admissions.

As an active member of AANP, I have a vast network of colleagues who practice in primary care settings. My experiences have made me acutely aware that providing high quality care in various settings provides patients with the best health care outcomes. I thank Senator Sanders, who has been a major supporter of the FQHC model of health care delivery in Vermont which has shown great success in delivering primary care services. Currently, there are a total of 29 health centers serving 8 counties where 32 NPs provide primary care to the states' most vulnerable population. It is important to note, NPs within these practices also provide valuable preceptor opportunities for nurse practitioner and medical students.

Nationally, 87% of NPs care for Medicare beneficiaries. Even though enormous strides have been made, multiple barriers still exist in current law. These barriers contribute to increased costs, administrative burden and interfere with the provision of quality health care delivery to Medicare beneficiaries. There are many limitations in current law including:

- the requirement that a physician must certify that face to face visits by nurse practitioners have been completed in order for an NP to certify eligibility for home health care services,
- that a physician must certify that a face to face visit by a nurse practitioner has been made in order for certain durable medical equipment to be ordered for patients,
- that a physician is required to conduct the admitting physical examination and every other routine visit to patients in skilled nursing facilities when a fully capable nurse practitioner is available to conduct those visits,
- that a physician rather than a nurse practitioner must be on site when cardiac and/or pulmonary rehabilitation is being conducted,
- and a physician must conduct the admitting physical examination in a rehabilitation center.

I bring these examples to your attention in order to emphasize these barriers and unnecessary redundancies to delivering care.

Additionally, I would like to point out that the current Medicare Shared Savings Program limits the assignment of beneficiaries to those who receive primary care services from a physician. This makes it difficult to participant in and impossible for nurse practitioners in independent practices to establish Accountable Care Organizations (ACO) under the Shared Savings Program creating a disincentive for NPs and a challenge to patients who participate in these organizations. Removing these barriers can increase efficiency, create cost effective access to patient appropriate care and enhance the quality of the care that is being delivered more effectively by the health care workforce.

An example of how these reimbursement barriers impact access to care was recently demonstrated in the New North End of Vermont in a private practice that included three physicians and one nurse practitioner. This practice provided care for a vulnerable and aging population where each provider had a roster of 1000 – 1500 patients. The three physicians left the practice. The nurse practitioner arranged with the University of Vermont to transform this practice into a UVM owned nurse managed health center which would accomplish multiple objectives: 1) the patients who wanted to remain with this practice would not be forced to travel out of their community to seek primary care services, 2) the practice would be managed by clinical faculty, all of whom are primary care NPs, 3) the practice would provide badly needed preceptors for NP and medical students, 4) the practice would provide fellowship positions for new NP grads under the guidance of experienced primary care NPs. The Director of the Vermont Blueprint agreed to include this practice in their network, which gave the patients immediate access to a highly skilled community care team. Even with all of the above noted support, unfortunately, two large insurance entities in the state refused to empanel the NPs without the presence of a physician in the practice. The practice has remained closed.

In October 2010, the IOM released a lengthy document entitled *The Future of Nursing: Leading Change, Advancing Health.* This document describes how the nursing profession should be transformed and how harnessing the full potential of the profession can improve health care in the United States. The document recommends that nurses should practice to their full scope and should be full partners with physicians and other health care professionals in redesigning health care in the United States. I ask that you pay particular attention to recommendation 1 entitled: "Remove scope-of practice barriers." My colleagues and I fully endorse the IOM finding and are striving for implementation at the state and national level. *Chapter 7 of the IOM Report: Recommendations and Research Priorities, is attached for your reference.*

Vermont has embraced these recommendations in many areas. In 2011 Vermont legislature adopted the National Council of State Boards of Nursing recommendations for nurse practitioner practice laws. The Vermont Blue Ribbon Commission on Nursing created a report of recommendations that was approved and signed by Governor Shumlin in 2012. The Commission recommendations included adopting the IOM mandates which I have enclosed in my testimony, specifically targets seamless and cost-effective access to NPs, such as seeking Medicare waivers allowing NPs to order home health services for their patients.

Now is the time to give consumers the freedom to choose among all qualified providers, just as we have in Vermont. By removing barriers to improve health care, we can best serve our patient's needs. My Nurse Practitioner colleagues and I stand ready to serve our patients in all areas of health care and look forward to working with this committee and the Congress to ensure patients' needs are met. At this time, we cannot afford to do less.

In summary, I urge the committee to examine the contributions of Nurse Practitioners across the country in various settings providing primary care to diverse populations. Removing barriers will allow patients greater access to health care, keeping them out of higher cost settings. Our added emphasis on health promotion and disease prevention perfectly positions us to be leaders in the health care profession at this critical time. I would like to acknowledge the support that our legislators have demonstrated by supporting NPs in primary care. I encourage the committee to continue this dialogue with the American Association of Nurse Practitioners, as we have a vast membership from which to draw. I thank the committee for this opportunity and look forward to serving as a resource.

Attachments:

1. AANP NP Facts
2. AANP Scope of Practice for Nurse Practitioners
3. AANP Standards of Practice for Nurse Practitioners
4. AANP Quality of Nurse Practitioner Practice
5. AANP Nurse Practitioners Cost-Effectiveness
6. Institute of Medicine (IOM) Report, *The Future of Nursing: Leading Change, Advancing Health.* 269-284.

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NP Facts

The Voice of the Nurse Practitioner®

There are more than 155,000 nurse practitioners (NPs) practicing in the U.S.

- An estimated 11,000 new NPs completed their academic programs in 2010-2011
- 93% of NPs have graduate degrees
- 97% of NPs maintain national certification
- 18% of NPs practice in rural or frontier settings
- 88% of NPs are prepared in primary care; 68% of NPs practice in at least one primary care site
- 87% of NPs see patients covered by Medicare and 84% by Medicaid
- 43% of NPs hold hospital privileges; 15% have long term care privileges
- 96.5% of NPs prescribe medications, averaging 20 prescriptions per day
- NPs hold prescriptive privilege in all 50 states, with controlled substances in 48
- The early-2011 mean, full-time NP base salary was $91,310, with average full-time NP total income $98,760
- 60% of NPs see three to four patients per hour; 7% see over five patients per hour
- Malpractice rates remain low; only 2% have been named as primary defendant in a malpractice case
- Average NP is female (96%) and 48 years old; she has been in practice for 12.8 years as a family NP (49%)

Distribution, Mean Years of Practice, Mean Age by Population Focus

Population	Percent of NPs	Years of Practice	Age
Acute Care	5.6	7.0	45
Adult+	19.3	10.9	50
Family+	48.3	9.5	48
Gerontological+	3.2	11.6	52
Neonatal	2.0	12.3	47
Oncology	1.0	8.3	47
Pediatric+	8.5	13.3	49
Psych/Mental Health	3.0	8.5	52
Women's Health+	9.0	14.7	49

+Primary care focus

Sources:
AANP National NP Database, 2010-2011
2011 AANP national NP Compensation Survey
2010 AANP National Practice Site Survey
2009 AANP Membership Survey
2009-2010 AANP NP Sample Survey

Additional information is available at the AANP website www.aanp.org.

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Scope of Practice for Nurse Practitioners

Professional Role

Nurse practitioners (NPs) are licensed, independent practitioners who practice in ambulatory, acute and long-term care as primary and/or specialty care providers. According to their practice specialties, they provide nursing and medical services to individuals, families and groups. In addition to diagnosing and managing acute episodic and chronic illnesses, NPs emphasize health promotion and disease prevention. Services include, but are not limited to: ordering, conducting, supervising, and interpreting diagnostic and laboratory tests; and prescription of pharmacologic agents and non-pharmacologic therapies. Teaching and counseling individuals, families and groups are major parts of NP practice.

As licensed, independent practitioners, NPs practice autonomously and in collaboration with health care professionals and other individuals to assess, diagnose, treat and manage the patient's health problems and needs. They serve as health care researchers, interdisciplinary consultants and patient advocates.

Education

Entry-level preparation for NP practice is at the master's, post-master's or doctoral level. Didactic and clinical courses prepare nurses with specialized knowledge and clinical competency to practice in primary care, acute care and long-term health care settings. Self-directed continued learning and professional development beyond the formal advanced education is essential to maintain clinical competency.

Accountability

The autonomous nature of the NP's advanced clinical practice requires accountability for health care outcomes. Insuring the highest quality of care requires national certification, periodic peer review, clinical outcome evaluations, a code for ethical practice, evidence of continuing professional development and maintenance of clinical skills. NPs are committed to seeking and sharing knowledge that promotes quality health care and improves clinical outcomes. This is accomplished by leading and participating in both professional and lay health care forums, conducting research and applying findings to clinical practice.

Responsibility

The role of the NP continues to evolve in response to changing societal and health care needs. As leaders in primary and acute health care, NPs combine the roles of provider, mentor, educator, researcher and administrator. Members of the profession are responsible for advancing the role of the NP and insuring that the standards of the profession are maintained. This is accomplished through involvement in professional organizations and participation in health policy activities at the local, state, national and international levels.

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Standards of Practice for Nurse Practitioners

I. Qualifications

Nurse practitioners are licensed, independent practitioners who provide primary and/or specialty nursing and medical care in ambulatory, acute and long-term care settings. They are registered nurses with specialized, advanced education and clinical competency to provide health and medical care for diverse populations in a variety of primary care, acute and long-term care settings. Master's, post-master's or doctoral preparation is required for entry-level practice (AANP 2006).

II. Process of Care

The nurse practitioner utilizes the scientific process and national standards of care as a framework for managing patient care. This process includes the following components.

A. Assessment of health status

The nurse practitioner assesses health status by:

- Obtaining a relevant health and medical history
- Performing a physical examination based on age and history
- Performing or ordering preventative and diagnostic procedures based on the patient's age and history
- Identifying health and medical risk factors

B. Diagnosis

The nurse practitioner makes a diagnosis by:

- Utilizing critical thinking in the diagnostic process
- Synthesizing and analyzing the collected data
- Formulating a differential diagnosis based on the history, physical examination and diagnostic test results
- Establishing priorities to meet the health and medical needs of the individual, family, or community

C. Development of a treatment plan

The nurse practitioner, together with the patient and family, establishes an evidence-based, mutually acceptable, cost-awareness plan of care that maximizes health potential. Formulation of the treatment plan includes:

- Ordering and interpreting additional diagnostic tests
- Prescribing or ordering appropriate pharmacologic and non-pharmacologic interventions
- Developing a patient education plan
- Recommending consultations or referrals as appropriate

D. Implementation of the plan

Interventions are based upon established priorities. Actions by the nurse practitioners are:

- Individualized
- Consistent with the appropriate plan for care
- Based on scientific principles, theoretical knowledge and clinical expertise
- Consistent with teaching and learning opportunities

E. Follow-up and evaluation of the patient status

The nurse practitioner maintains a process for systematic follow-up by:

- Determining the effectiveness of the treatment plan with documentation of patient care outcomes
- Reassessing and modifying the plan with the patient and family as necessary to achieve health and medical goals

III. Care Priorities

The nurse practitioner's practice model emphasizes:

A. Patient and family education
The nurse practitioner provides health education and utilizes community resource opportunities for the individual and/or family

B. Facilitation of patient participation in self care.
The nurse practitioner facilitates patient participation in health and medical care by providing information needed to make decisions and choices about:
- Promotion, maintenance and restoration of health
- Consultation with other appropriate health care personnel
- Appropriate utilization of health care resources

C. Promotion of optimal health

D. Provision of continually competent care

E. Facilitation of entry into the health care system

F. The promotion of a safe environment

IV. Interdisciplinary and Collaborative Responsibilities

As a licensed, independent practitioner, the nurse practitioner participates as a team leader and member in the provision of health and medical care, interacting with professional colleagues to provide comprehensive care.

V. Accurate Documentation of Patient Status and Care

The nurse practitioner maintains accurate, legible and confidential records.

VI. Responsibility as Patient Advocate

Ethical and legal standards provide the basis of patient advocacy. As an advocate, the nurse practitioner participates in health policy activities at the local, state, national and international levels.

VII. Quality Assurance and Continued Competence

Nurse practitioners recognize the importance of continued learning through:

A. Participation in quality assurance review, including the systematic, periodic review of records and treatment plans
B. Maintenance of current knowledge by attending continuing education programs
C. Maintenance of certification in compliance with current state law
D. Application of standardized care guidelines in clinical practice

VIII. Adjunct Roles of Nurse Practitioners

Nurse practitioners combine the roles of provider, mentor, educator, researcher, manager and consultant. The nurse practitioner interprets the role of the nurse practitioner to individuals, families and other professionals.

IX. Research as Basis for Practice

Nurse practitioners support research by developing clinical research questions, conducting or participating in studies, and disseminating and incorporating findings into practice.

Quality of Nurse Practitioner Practice

Nurse practitioners (NPs) are high quality health care providers who practice in primary care, ambulatory, acute care, specialty care, and long-term care. They are registered nurses prepared with specialized advanced education and clinical competency to provide health and medical care for diverse populations in a variety of settings. A graduate degree is required for entry-level practice. The NP role was created in 1965 and over 45 years of research consistently supports the excellent outcomes and high quality of care provided by NPs. The body of evidence supports that the quality of NP care is at least equivalent to that of physician care. This paper provides a summary of a number of important research reports supporting the NP.

Avorn, J., Everitt, D.E., & Baker, M.W. (1991). The neglected medical history and therapeutic choices for abdominal pain. A nationwide study of 799 physicians and nurses. Archives of Internal Medicine, 151(4), 694-698.
A sample of 501 physicians and 298 NPs participated in a study by responding to a hypothetical scenario regarding epigastric pain in a patient with endoscopic findings of diffuse gastritis. They were able to request additional information before recommending treatment. Adequate history-taking resulted in identifying use of aspirin, coffee, cigarettes, and alcohol, paired with psychosocial stress. Compared to NPs, physicians were more likely to prescribe without seeking relevant history. NPs, in contrast, asked more questions and were less likely to recommend prescription medication.

Bakerjian, D. (2008). Care of nursing home residents by advanced practice nurses: A review of the literature. Research in Gerontological Nursing, 1(3), 177-185.
Bakerjian conducted and extensive review of the literature, particularly of NP-led care. She found that long-term care patients managed by NPs were less likely to have geriatric syndromes such as falls, UTIs, pressure ulcers, etc. They also had improved functional status, as well as better managed chronic conditions.

Brown, S.A. & Grimes, D.E. (1995). A meta-analysis of nurse practitioners and nurse midwives in primary care. Nursing Research, 44(6), 332-9.
A meta-analysis of 38 studies comparing a total of 33 patient outcomes of NPs with those of physicians demonstrated that NP outcomes were equivalent to or greater than those of physicians. NP patients had higher levels of compliance with recommendations in studies where provider assignments were randomized and when other means to control patient risks were used. Patient satisfaction and resolution of pathological conditions were greatest for NPs. The NP and physician outcomes were equivalent on all other outcomes.

Congressional Budget Office. (1979). Physician extenders: Their current and future role in medical care delivery. Washington, D.C.: US Government Printing Office.
As early as 1979, the Congressional Budget Office reviewed findings of the numerous studies of NP performance in a variety of settings and concluded that NPs performed as well as physicians with respect to patient outcomes, proper diagnosis, management of specified medical conditions, and frequency of patient satisfaction.

Cooper, M.A., Lindsay, G.M., Kinn, S., Swann, I.J. (2002). Evaluating emergency nurse practitioner services: A randomized controlled trial. Journal of Advanced Nursing, 40(6), 771-730.
A study of 199 patients randomly assigned to emergency NP-led care or physician-led care in the U.K. demonstrated the highest level of satisfaction and clinical documentation for NP care. The outcomes of recovery time, symptom level, missed work, unplanned follow-up, and missed injuries were comparable between the two groups.

Ettner, S.L., Kotlerman, J., Abdelmonem, A., Vazirani, S., Hays, R.D., Shapiro, M., et al. (2006). An alternative approach to reducing the costs of patient care? A controlled trial of the multi-disciplinary doctor-nurse practitioner (MDNP) model. Medical Decision Making, 26, 9-17.
Significant cost savings were demonstrated when 1207 patients in an academic medical center were randomized to either standard treatment or to a physician-NP model.

Horrocks, S., Anderson, E., Salisbury, C. (2002). Systematic review of whether nurse practitioners working in primary care can provide equivalent care to doctors. British Medical Journal, 324, 819-823.
A systematic review of 11 randomized clinical trials and 23 observational studies identified data on outcomes of patient satisfaction, health status, cost, and/or process of care. Patient satisfaction was highest for patients seen by NPs. The health status data and quality of care indicators were too heterogeneous to allow for meta-analysis, although qualitative

comparisons of the results reported showed comparable outcomes between NPs and physicians. NPs offered more advice/information, had more complete documentation, and had better communication skills than physicians. NPs spent longer time with their patients and performed a greater number of investigations than did physicians. No differences were detected in health status, prescriptions, return visits, or referrals. Equivalency in appropriateness of studies and interpretations of x-rays were identified.

Laurant, M., Reeves, D., Hermens, R., Braspenning, J., Grol, R., & Sibbald, B. (2006). Substitution of doctors by nurses in primary care. Cochrane Database of Systematic Reviews. 2006, Issue 1.
This meta-analysis included 25 articles relating to 16 studies comparing outcomes of primary care nurses (nurses, NPs, clinical nurse specialists, or advance practice nurses) and physicians. The quality of care provided by nurses was as high as that of the physicians. Overall, health outcomes and outcomes such as resource utilization and cost were equivalent for nurses and physicians. The satisfaction level was higher for nurses. Studies included a range of care delivery models, with nurses providing first contact, ongoing care, and urgent care for many of the patient cohorts.

Lenz, E.R., Mundinger, M.O., Kane, R.L., Hopkins, S.C., & Lin, S.X. (2004). Primary care outcomes in patients treated by nurse practitioners or physicians: Two-year follow-up. Medical Care Research and Review 61(3), 332-351.
The outcomes of care in the study described by Mundinger, et al. in 2000 (see below) are further described in this report including two years of follow-up data, confirming continued comparable outcomes for the two groups of patients. No differences were identified in health status, physiologic measures, satisfaction, or use of specialist, emergency room, or inpatient services. Patients assigned to physicians had more primary care visits than those assigned to NPs.

Lin, S.X., Hooker, R.S., Lens, E.R., Hopkins, S.C. (2002). Nurse practitioners and physician assistants in hospital outpatient departments, 1997-1999. Nursing Economics, 20(4), 174-179.
Data from the National Hospital Ambulatory Medical Care Survey (NHAMCS) were used to identify patterns of NP and PA practice styles. NPs were more likely to see patients alone and to be involved in routine examinations, as well as care directed towards wellness, health promotion, disease prevention, and health education than PAs, regardless of the setting type. In contrast , PAs were more likely to provide acute problem management and to involve another person, such as a support staff person or a physician.

Mundinger, M.O., Kane, R.L., Lenz, E.R., Totten, A.M., Tsai, W.Y., Cleary, P.D., et al. (2000). Primary care outcomes in patients treated by nurse practitioners or physicians: A randomized trial. Journal of the American Medical Association, 283(1), 59-68.
The outcomes of care were measured in a study where patients were randomly assigned either to a physician or to an NP for primary care between 1995 and 1997, using patient interviews and health services utilization data. Comparable outcomes were identified, with a total of 1316 patients. After six months of care, health status was equivalent for both patient groups, although patients treated for hypertension by NPs had lower diastolic values. Health service utilization was equivalent at both 6 and 12 months and patient satisfaction was equivalent following the initial visit. The only exception was that at six months, physicians rated higher on one component (provider attributes) of the satisfaction scale.

Newhouse, R. et al (2011). Advanced practice nurse outcomes 1999-2008: A systematic review. Nursing Economic$, 29 (5), 1-22.
The outcomes of NP care were examined through a systematic review of 37 published studies, most of which compared NP outcomes with those of physicians. Outcomes included measures such as patient satisfaction, patient perceived health status, functional status, hospitalizations, ED visits, and bio-markers such as blood glucose, serum lipids, blood pressure. The authors conclude that NP patient outcomes are comparable to those of physicians.

Office of Technology Assessment. (1986). Nurse practitioners, physician assistants, and certified nurse midwives: A policy analysis. Washington D.C.: US Government Printing Office.
The Office of Technology Assessment reviewed studies comparing NP and physician practice, concluding that, "NPs appear to have better communication, counseling, and interviewing skills than physicians have." (p. 19) and that malpractice premiums and rates supported patient satisfaction with NP care, pointing out that successful malpractice rates against NPs remained extremely rare.

Ohman-Strickland, P.A., Orzano, A.J., Hudson, S.V., Solberg, L.I., DiCiccio-Bloom, B., O'Malley, D., et al. (2008). Quality of diabetes care in family medicine practices: Influence of nurse-practitioners and physician's assistants. Annals of Family Medicine, 6(1), 14-22.
The authors conducted a cross-sectional study of 46 practices, measuring adherence to ADA guidelines. They reported that practices with NPs were more likely to perform better on quality measures including appropriate measurement of glycosylated hemoglobin, lips, and microalbumin levels and were more likely to be at target for lipid levels.

Prescott, P.A. & Driscoll, L. (1980). Evaluating nurse practitioner performance. Nurse Practitioner, 1(1), 28-32.
The authors reviewed 26 studies comparing NP and physician care, concluding that NPs scored higher in many areas. These included: amount/depth of discussion regarding child health care, preventative health, and wellness; amount of advice, therapeutic listening, and support offered to patients; completeness of history and follow-up on history findings; completeness of physical examination and interviewing skills; and patient knowledge of the management plan given to them by the provider.

Roblin, D.W., Becker, R., Adams, E.K., Howard, D. H., & Roberts, M.H. (2004). Patient satisfaction with primary care: Does type of practitioner matter? Medical Care, 42(6), 606-623.
A retrospective observational study of 41,209 patient satisfaction surveys randomly sampled between 1997 and 2000 for visits by pediatric and medicine departments identified higher satisfaction with NP and/or PA interactions than those with physicians, for the overall sample and by specific conditions. The only exception was for diabetes visits to the medicine practices, where the satisfaction was higher for physicians.

Sacket, D.L., Spitzer, W. O., Gent, M., & Roberts, M. (1974). The Burlington randomized trial of the nurse practitioner: Health outcomes of patients. Annals of Internal Medicine, 80(2), 137-142.
A sample of 1598 families were randomly allocated, so that two-thirds continued to receive primary care from a family physician and one-third received care from a NP. The outcomes included: mortality, physical function, emotional function, and social function. Results demonstrated comparable outcomes for patients, whether assigned to physician or to NP care. Details from the Burlington trial were also described by Spitzer, et al (see below).

Safriet, B. J. (1992). Health care dollars and regulatory sense: The role of advanced practice nursing. Yale Journal on Regulation, 9(2).
The full Summer 1992 issue of this journal was devoted to the topic of advanced practice nursing, including documenting the cost-effective and high quality care provided, and to call for eliminating regulatory restrictions on their care. Safriet summarized the OTA study concluding that NP care was equivalent to that of physicians and pointed out that 12 of the 14 studies reviewed in this report which showed differences in quality reported higher quality for NP care. Reviewing a range of data on NP productivity, patient satisfaction, and prescribing, and data on nurse midwife practice, Safriet concludes "APNs are proven providers, and removing the many barriers to their practice will only increase their ability to respond to the pressing need for basic health care in our country" (p. 487).

Spitzer, W.O., Sackett, D.L., Sibley, J.C., Roberts, M., Gent, M., Kergin, D.J., Hacket, B.D., & Olynich, A. (1974). The Burlington randomized trial of the nurse practitioner. New England Journal of Medicine, 290 (3), 252-256.
This report provides further details of the Burlington trial, also described by Sackett, et al. (see above). This study involved 2796 patients being randomly assigned to either one of two physicians or to an NP, so that one-third were assigned to NP care, from July 1971 to July 1972. At the end of the period, physical status and satisfaction were comparable between the two groups. The NP group experienced a 5% drop in revenue, associated with absence of billing for NP care. It was hypothesized that the ability to bill for all NP services would have resulted in an actual increased revenue of 9%. NPs functioned alone in 67% of their encounters. Clinical activities were evaluated and it was determined that 69% of NP management was adequate compared to 66% for the physicians. Prescriptions were rated adequate for 71% of NPs compared to 75% for physicians. The conclusion was that "a nurse practitioner can provide first-contact primary clinical care as safely and effectively as a family physician" (p. 255).

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Nurse Practitioner Cost-Effectiveness

Nurse Practitioners (NPs) are a proven response to the evolving trend towards wellness and preventive health care driven by consumer demand. A solid body of evidence demonstrates that NPs have consistently proven to be cost-effective providers of high-quality care for almost 50 years. Examples of the NP cost-effectiveness research are described below.

Over three decades ago, the Office of Technology Assessment (OTA) (1981) conducted an extensive case analysis of NP practice, reporting that NPs provided equivalent or improved medical care at a lower total cost than physicians. NPs in a physician practice potentially decreased the cost of patient visits by as much as one third, particularly when seeing patients in an independent, rather than complementary, manner. A subsequent OTA analysis (1986) confirmed original findings regarding NP cost effectiveness. All later studies of NP care have found similar cost-efficiencies associated with NP practice.

The cost-effectiveness of NPs begins with their academic preparation. The American Association of Colleges of Nursing has long reported that NP preparation cost 20-25% that of physicians. In 2009, the total tuition cost for NP preparation was less than one-year tuition for medical (MD or DO) preparation (AANP, 2010).

Comparable savings are associated with NP compensation. In 1981, the hourly cost of an NP was one-third to one-half that of a physician (OTA). The difference in compensation has remained unchanged for 30 years. In 2010, when the median total compensation for primary care physicians ranged from $208,658 (family) to $219,500 (internal medicine) (American Medical Group Association, 2010), the mean full-time NP's total salary was $97,345, across all types of practice (American Academy of Nurse Practitioners [AANP], 2010). A study of 26 capitated primary care practices with approximately two million visits by 206 providers determined that the practitioner labor costs and total labor costs per visit were both lower in practices where NPs and physician assistants (PAs) were used to a greater extent (Roblin, Howard, Becker, Adams, and Roberts, 2004). When productivity measures, salaries, and costs of education are considered, NPs are cost effective providers of health services.

Based on a systematic review of 37 studies, Newhouse et al (2011) found consistent evidence that cost-related outcomes such as length of stay, emergency visits, and hospitalizations for NP care are equivalent to those of physicians. In 2012, modeling techniques were used to predict the potential for increased NP cost-effectiveness into the future, based on prior research and data. Using Texas as the model State, Perryman (2012) analyzed the potential economic impact that would be associated with greater use of NPs and other advanced practice nurses, projecting over $16 billion in immediate savings which would increase over time.

NP cost-effectiveness is not dependent on actual practice setting and is demonstrated in primary care, acute care, and long term care settings. For instance, NPs practicing in Tennessee's state-managed managed care organization (MCO) delivered health care at 23% below the average cost associated with other primary care providers, achieving a 21% reduction in hospital inpatient rates and 24% lower lab utilization rates compared to physicians (Spitzer, 1997). A one-year study comparing a family practice physician-managed practice with an NP-managed practice within an MCO found that compared to the physician practice, the NP-managed practice had 43% of the total emergency department visits, 38% of the inpatient days, and 50% total annualized per member monthly cost (Jenkins and Torrisi, 1995). Nurse managed centers (NMCs) with NP-provided care have demonstrated significant savings, less costly interventions, and fewer emergency visits and hospitalizations (Hunter, Ventura, and Keams, 1999; Coddington and Sands, 2009). A study conducted in a large HMO setting established that adding an NP to the practice could virtually double the typical panel of patients seen by a physician with a projected increase in revenue of $1.28 per member per month, or approximately $1.65 million per 100,000 enrollees annually (Burl, Bonner, and Rao, 1994).

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Chenowith, Martin, Pankowski, and Raymond (2005) analyzed the health care costs associated with an innovative on-site NP practice for over 4000 employees and their dependents, finding savings of $ .8 to 1.5 million, with a benefit-to-cost ratio of up to 15 to 1. Later, they tested two additional benefit-to-cost models using 2004-2006 data for patients receiving occupational health care from an NP demonstrating a benefit to cost ratio ranging from 2.0-8.7 to 1, depending on the method (Chenowith, Martin, Pankowski, and Raymond (2008). Time lost from work was lower for workers managed by NPs, compared to physicians, as another aspect of cost-savings (Sears, Wickizer, Franklin, Cheadie, and Berkowitz, 2007).

A number of studies have documented the cost-effectiveness of NPs in managing the health of older adults. Hummel and Prizada (1994) found that compared to the cost of physician-only teams, the cost of a physician-NP team long term care facility were 42% lower for the intermediate and skilled care residents and 26% lower for those with long-term stays. The physician-NP teams also had significantly lower rates of emergency department transfers, shorter hospital lengths of stay, and fewer specialty visits. A one-year retrospective study of 1077 HMO enrollees residing in 45 long term care settings demonstrated a $72 monthly gain per resident, compared with a $197 monthly loss for residents seen by physicians alone (Burl, Bonner, Rao, and Kan, 1998). Intrator (2004) found that residents in nursing homes with NPs were less likely to develop ambulatory care-sensitive diagnoses requiring hospitalizations. Bakerjian (2008) summarized a review of 17 studies comparing nursing home residents who are patients of NPs to others, finding lower rates of hospitalization and overall costs for the NP patients. The potential for NPs to control costs associated with the healthcare of older adults was recognized by United Health (2009), which recommended that providing NPs to manage nursing home patients could result in $166 billion healthcare savings.

NP-managed care within acute-care settings is also associated with lower costs. Chen, McNeese-Smith, Cowan, Upenieks, and Afifi (2009) found that NP-led care was associated with lower overall drug costs for inpatients. When Paez and Allen (2006) compared NP and physician management of hypercholesterolemia following revascularization, they found patients in the NP-managed group had lower drug costs, while being more likely to achieve their goals and comply with prescribed regimen.

Collaborative NP/physician management was associated with decreased length of stay and costs and higher hospital profit, with similar readmission and mortality rates (Cowan et al., 2006; Ettner et al., 2006). The introduction of an NP model in a health system's neuroscience area resulted in over $2.4 million savings the first year and a return on investment of 1600 percent; similar savings and outcomes were demonstrated as the NP model was expanded in the system (Larkin, 2003). Boling (2009) cites an intensive short-term transitional care NP program documented by Smigleski et al through which healthcare costs were decreased by 65% or more after enrollment, as well as the introduction of an NP model in a system's cardiovascular area associated with a decrease in mortality from 3.7% to 0.6% and over 9% decreased cost per case (from $27,037 to $24,511).

In addition to absolute cost, other factors are important to health care cost-effectiveness. These include illness prevention, health promotion, and outcomes. See Documentation of Quality of Nurse Practitioner Practice (AANP, 2013) for further discussion.

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The Future of Nursing: Leading Change, Advancing Health *(pp. 278-279)*

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. To achieve this goal, the committee recommends the following actions.*

For the Congress:

- Expand the Medicare program to include coverage of advanced practice registered nurse services that are within the scope of practice under applicable state law, just as physician services are now covered.
- Amend the Medicare program to authorize advanced practice registered nurses to perform admission assessments, as well as certification of patients for home health care services and for admission to hospice and skilled nursing facilities.
- Extend the increase in Medicaid reimbursement rates for primary care physicians included in the ACA to advanced practice registered nurses providing similar primary care services.
- Limit federal funding for nursing education programs to only those programs in states that have adopted the National Council of State Boards of Nursing Model Nursing Practice Act and Model Nursing Administrative Rules (Article XVIII, Chapter 18).

For state legislatures:

- Reform scope-of-practice regulations to conform to the National Council of State Boards of Nursing Model Nursing Practice Act and Model Nursing Administrative Rules (Article XVIII, Chapter 18).
- Require third-party payers that participate in fee-for-service payment arrangements to provide direct reimbursement to advanced practice registered nurses who are practicing within their scope of practice under state law.

For the Centers for Medicare and Medicaid Services:

- Amend or clarify the requirements for hospital participation in the Medicare program to ensure that advanced practice registered nurses are eligible for clinical privileges, admitting privileges, and membership on medical staff.

For the Office of Personnel Management:

- Require insurers participating in the Federal Employees Health Benefits Program to include coverage of those services of advanced practice registered nurses that are within their scope of practice under applicable state law.

For the Federal Trade Commission and the Antitrust Division of the Department of Justice:

- Review existing and proposed state regulations concerning advanced practice registered nurses to identify those that have anticompetitive effects without contributing to the health and safety of the public. States with unduly restrictive regulations should be urged to amend them to allow advanced practice registered nurses to provide care to patients in all circumstances in which they are qualified to do so.