



**THE STATUS OF  
ADVANCED PRACTICE REGISTERED NURSES  
IN MISSOURI:  
A WHITE PAPER**



**AUTHORED BY: THE APRN WHITE PAPER TASK FORCE OF THE  
MISSOURI COUNCIL ON ADVANCED PRACTICE NURSES OF THE MISSOURI NURSES ASSOCIATION**

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## THE WHITE PAPER: A TEMPLATE FOR CHANGE IN THE STATE OF MISSOURI

Missouri APRNs advocate for change to improve patient access to APRN care as a solution to healthcare shortages in underserved urban and rural Missouri and to reduce the rapidly escalating costs of healthcare.

Vision: Create a statutory and regulatory environment in Missouri that allows Missouri citizens to have unrestricted access to the safe, high quality, and cost effective healthcare provided by advanced practice registered nurses (APRNs) through revision of Missouri statutes.

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# THE STATUS OF APRNs IN MISSOURI: A WHITE PAPER

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## EXECUTIVE SUMMARY:

- **Key reports reveal the need for improved access to care, and support removing barriers to Missouri citizens' allowing access to the full scope of all available APRN services.**
- **APRNs are safe practitioners who deliver high quality, cost-effective care with low malpractice and litigation rates.**
- **APRNs have been delivering care in the United States for over half a century.**
- **There is tremendous interstate variability in statutes and regulations governing APRN practice.**
- **Statutory and regulatory change must occur in order for patients in Missouri to access APRN care.**

A shortage of healthcare providers and subsequent decreased access to healthcare services, as well as concerns related to the safety, quality and efficiency of the current healthcare paradigm create a window of opportunity to redefine the healthcare delivery system and remove barriers to access APRN care in Missouri. Healthcare legislation, regulations governing federal healthcare services and numerous reports by public and private agencies provide unequivocal support for barrier free access to APRN services.<sup>1</sup> These reports coupled with the Institute of Medicine (IOM) *Future of Nursing* report point to the need to create change to allow Missouri citizens the opportunity to receive care from APRNs (Institute of Medicine, 2010)

APRNs are competent and qualified healthcare providers who deliver healthcare in a wide variety of settings and roles. APRNs are nurses educated at the graduate level. Studies, including a recent systematic review of APRN outcomes, provide evidence of the cost effectiveness, quality, and safety of healthcare provided by APRNs (AANP, 2010; Newhouse et al., 2011). Additionally APRNs are shown to have high rates of patient satisfaction and lower litigation rates with associated malpractice fees than their physician counterparts (Hooker, Nicholson, & Li, 2009).

APRNs have been in existence for decades (Office of Technology Assessment, 1981). The statutory regulation of APRN practice is determined by state rather than federal legislation (Wilken, 1993). As a result, regulations that govern the scope of practice for APRNs vary dramatically from state to state. This variance, compounded by state regulatory influence on policies, promotes inconsistencies in scope of practice from state to state. On the other hand, physician scope of practice is consistent across the United States. As a result of legislative and administrative rule making, many barriers are implemented which limit access to healthcare.

Regulations surrounding healthcare can serve as barriers that increase the cost and time associated with healthcare delivery (Conover, 2004). Legislators have an important role in developing laws to protect society. Excessive regulations are harmful to society and may restrict free trade and consumer rights. In the sentinel IOM *Future of Nursing* report, legislators are encouraged to examine their statutes and to reduce barriers to APRN practice. In states where there are excessive barriers to practice, the report recommends that the Federal Trade Commission (FTC) engage in the process of identifying and eliminating barriers to care delivered by APRNs (Institute of Medicine, 2010).

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<sup>1</sup> The Patient Protection and Affordable Care Act (Library of Congress, 2010); Institute of Medicine (IOM) *Future of Nursing* Report (Institute of Medicine, 2010); Center to Champion Nursing (CCNA) (Center to Champion Nursing in America, 2014); Macy Report (Cronenwatt & Dzau, 2010); National Council of State Boards of Nursing (NCSBN) APRN Consensus Paper (LACE) (National Council of State Boards of Nursing, 2008); *See also* the administrative rules affecting health services delivered by Federally Qualified Health Centers (FQHC), Rural Health Centers (RHC), and the Veteran's Administration (VA). The expansion of the APRN role is further advocated by the Bipartisan Policy Institute, National Governor's Association {National Governor's Association, 2012}, American Hospital Association {American Hospital Association Primary Care Workforce Roundtable, 2013}, Institute for Alternative Futures (2013), and the Baker Institute, 2012}. *See also* Key nursing organizations recommend reduction of barriers to APRN practice at the state and federal level (AANP, 2013; ANA, 2013). AARPs Center to Champion Nursing in America (CCNA), developed through a cooperative effort by (AARP) and the Robert Wood Johnson Foundation (RWJ), recommends reduction of barriers of APRN practice to address urgent needs for primary care throughout the United States (CCNA, 2014).



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While 16 states and the District of Columbia have independent APRN practice, the remaining states require a supervisory or collaborative relationship with APRN activities being selectively delegated by physicians (American Association of Nurse Practitioners, 2011b). The licensure, accreditation, certification, education (LACE) model developed by the task force of the National Council of State Boards of Nursing (NCSBN), recommends autonomous APRN practice regulated solely by the Board of Nursing inclusive of a mandated APRN position (National Council of State Boards of Nursing, 2008)).

Currently, seventeen states have joint rule promulgation with the Board of Medicine and the Board of Nursing (California HealthCare Foundation, 2007). Missouri statute does not mandate joint rulemaking for APRN practice. Rather, the statute states those three regulatory bodies, the Board of Healing Arts, Board of Nursing, and Board of Pharmacy, “may promulgate” rules. In practice, these regulatory bodies frequently promulgate Missouri APRN rules related to scope of practice. States that have effectively achieved barrier free practice did not have joint promulgation of rules. Between January 11, 2011 and December 2012, there were 1795 scope of practice bills introduced in 54 states and territories, of these 349 were adopted and enacted into law (National Conference of State Legislators, 2013).

The development of excessive regulations may occur due to lack of understanding regarding APRN scope of practice and the quality, cost effectiveness, and safety of the care that they deliver. Exploding healthcare costs, coupled with less than optimal healthcare outcomes indicates the need for change in the healthcare system (Organization for Economic Cooperation and Development, 2011). In a bipartisan report key drivers of health care cost were elucidated. One of the drivers was scope of practice hindrance. The report identified that many professionals were not allowed to practice at the full scope of their abilities due to statutory regulation and this factor is a key driver of health care costs (Bipartisan Policy Center, 2013).

### **Recommendations:**

- Adopt legislation that removes the collaborative practice agreement mandate.
- Designate the Missouri State Board of Nursing as the sole agency responsible for regulation of APRN practice and eliminate the joint rule-making process related to APRN governance.
- Require APRNs to show proof of liability insurance for licensure and renewal of licenses.
- Adopt the nomenclature of the National Council of State Board of Nursing’s Consensus Model for APRN Regulation LACE (licensure, accreditation, certification, education), which is endorsed by the Missouri State Board of Nursing in order to promote consistent APRN scope of practice throughout the United States.

### **When these recommendations are implemented, the benefits to Missouri citizens will be:**

- Increased number of available healthcare providers, which will expand services in rural and underserved areas.
- APRN patients will have access to healthcare, medications and other therapies to meet patient needs.
- APRNs education emphasizes wellness, health promotion and disease prevention, making APRN access critical in healthcare models that promote wellness behaviors.
- Healthcare teams will continue to collaborate in an egalitarian fashion to promote excellent patient care.
- Increased potential to reduce healthcare costs through fully utilized APRNs through realization of their associated reduced education costs, liability costs, and salary costs.

## MISSOURI: THE STATE OF HEALTHCARE

- Missouri rates poorly on most healthcare measures when contrasted to other states.
- Much of Missouri is rural, with many healthcare provider shortage and medically underserved areas.
- Many Missouri citizens are uninsured or underinsured.

In June 2010, the Missouri Department of Health and Senior Services (DHSS) published *The State of Missourians' Health* (Missouri Department of Health and Human Services, 2012). This study looked at 10 key population health indicators: health insurance coverage, infant mortality, life expectancy at birth, death rates in the top five leading causes of death, years of potential life lost from early deaths, overall death rates, poverty, obesity, immunization coverage, and smoking rates. Of all the indicators, Missouri performed above average in only one category.

The Commonwealth Fund, an independent, private foundation that provides comparative data related to 38 health indicators and state response to national health policies and initiatives, ranks Missouri 44<sup>th</sup> overall. Missouri scores on access and affordability to care (30<sup>th</sup>), prevention and treatment (42<sup>nd</sup>), potentially avoidable hospital use (37<sup>th</sup>), and healthy lives (44<sup>th</sup>). This is an overall healthcare decline from the 2010 report where Missouri ranked 33<sup>rd</sup> (Commonwealth Fund, 2013).

### Uninsured and the Underserved in Missouri:

The present total population of Missouri is 5,988,927 (US Census Bureau, 2010). There are 114 counties and one independent city (St. Louis). Currently, 109 of 114 counties contain Healthcare Professional Shortage Areas (HPSA) or designated Medically Underserved Areas (MUA) (Missouri Department of Health, 2012). There are a total of 516 areas in Missouri that are designated as HPSA (Health and Human Services, 2014). This means that there is less than one primary care physician per 3,000 people and/or there are no primary care services within 30 minutes of travel time.

The percent of Missourians who live below the poverty rate (defined as a federal threshold of \$11,161 for one person, and \$21,756 for a family of 2 adults and 2 children) is higher for Missouri (14.6%) as compared to the national rate 1(14.3 %). The distribution of poverty in Missouri is very uneven, ranging from a low of 5.1% in St. Charles County, to a high of 29.9% in Shannon County (Missouri Department of Health, 2012). Pockets of poverty occur throughout the state, commonly in the same areas designated as HPSAs. Rural Missouri residents are poorer than metropolitan residents. They are three years older than average, 5% live in poverty, 3% more are illiterate and 4% more are uninsured. Individuals with a lower socioeconomic status have a greater challenge in meeting basic living needs increasing the challenge to meet healthcare needs. (MHA Primary Care Physician: The Status in Rural Missouri, 2011). In 2009-2010a reported 852,000 Missouri citizens lacked health insurance (US Census Release. Implementation of the Patient Protection Affordable Care Act is expected to add 267,000 uninsured new patients in 2014 to the Missouri healthcare system by (Blouin, 2014).

In 2010, 826,561 (14%) of Missourians were 65 years of age or older. This percentage will continue to grow. It is estimated that 935,979 (15.6%) by 2015, 1,079,491 (18%) by 2020, and 1,414,266 (23.6%) by 2030. Five percent of the population is responsible for 50 percent of all healthcare spending (Missouri Hospital Association, 2011). A combination of increasing patients entering the healthcare system, in combination with an aging population, will create ever-increasing demands for patient access to care.

### Medicaid Cuts:

The proposed Missouri budget includes drastic cuts to Medicaid funding that will have a dire impact on the Missouri economy. It calls for five percent cuts in state funding for current Missouri Medicaid programs in 2013, fifteen percent in 2014, and 33 percent in 2021. This first cut of five percent would cost Missouri almost 290.7 million in federal dollars and risk 633.7 million in business activity. It would also impact 35,210 jobs (Families USA, 2011). Continued Medicaid cuts as proposed would escalate and further degrade Missouri economy and impact access to care for Missourians covered by Medicaid, which includes 1 in 6 Missourians and 35 percent of Missouri's children (Missouri Foundation for

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Health, 2012). In 2013, Governor Nixon and other key policy drivers (Rep. Jay Barnes, Rep. Noel Torpey) proposed expansion of Missouri Medicaid through the private insurance market. In 2014, other bills will be introduced to attempt to expand Medicaid (MoHealthnet) to 138% of the Federal Poverty Level (FPL).

### **The Status of Healthcare Exchange in Missouri:**

The Patient Protection and Affordable Care Act (PPACA) will increase health care coverage and increase health care spending by approximately 4.7% when all of the PPACA provisions are fully implemented (Missouri Foundation for Health, 2012). Missouri does not have a health care exchange (Missouri General Assembly, SB464, 2012) and the decision to develop an exchange will be on the 2012 November (Missouri General Assembly, 2012b). This bill was sponsored by a physician, senator Rob Schaaf (Missouri General Assembly, 2012b). Implementing mandatory health care exchanges would result in 4.8 billion dollar savings whereas opt out exchanges are projected to save 2.7 billion dollars. Implementing robust (competitive bidding) health care exchanges are predicted to increase health care coverage to Missouri citizens while providing incentives to save approximately 3.3 billion (Missouri Foundation for Health, 2012).

The Medicaid Primary Care Bonus plan under section 1202 is a two year bonus plan (2013-4) which allows care delivered by a physician delivering primary care to Medicaid patients to be reimbursed at the higher Medicare rate. This additional payment (difference between Medicaid and Medicare) would be 100% funded by the federal government. The senate version of PPACA had included APRNs but the house version eliminated them as the Congressional Budget Office had indicated increased costs. States can choose to include primary care APRNs who provide Medicaid services in the bonus program. According to Ian McCaslin, Missouri Health Net Division Director (7/17/2012 Medicaid for Primary Services Meeting, Jefferson City, MO), Missouri will pay APRNs only if billed incident to physician services. The resource utilized in this policy decision was from the Centers for HealthCare Strategies (Centers for Medicare and Medicaid Services, 2011). Nurse Practitioners are included in the Medicare Bonus program. This five-year program (1011-15) will increase Medicare reimbursement to primary care providers by ten percent. This program explicitly includes nurse practitioners and clinical nurse specialists as long as 60% of the allowed charges reflect primary care services.

Because Missouri does not have its own exchange, it will default to the Federal exchanges. Those individuals who fall between 19 and 138% of the Federal Poverty Level (FPL) will have no access to insurance, as Missouri did not expand Medicaid. The Affordable Care Act was built on the assumption that Medicaid expansion would occur to 138% of the FPL.

### **Decreased Primary Care Provider Supply:**

In rural Missouri there is only one primary care physician for every 1,776 citizens. Nationwide, it is estimated that there will be a 91,500 shortfall for physicians by 2020 with 45,400 being primary care. The passage of PPACA will push the need for primary care physicians and APRNs. The anticipated addition of 600,000 new patients to Missouri healthcare system will create access to care barriers (MHA Primary Care Physician: The Status in Rural Missouri, 2011).

An aging Missouri physician population compounds these issues. Fifty-five percent of all Missouri physicians are 50 years or older. In rural settings the 50 and older age range jumps to 62 percent. Fewer medical students are choosing primary care versus specialty care. Less than 1/3 of physicians (nationwide) enter primary care will add to the problems of access (Agency Healthcare Research and Quality, 2010). This combination of an aging physician population and fewer students choosing primary care creates a large barrier to patient care access (MHA Primary Care Physician: The Status in Rural Missouri, 2011). Nurse practitioners are in the primary care force, but given Missouri's restrictive scope of practice, Missouri may be faced with reduced numbers of nurse practitioners. Studies show that nurse practitioners migrate to states with fewer barriers and emigrate from states with more barriers (Perry, 2012).

Shortages of primary care providers are associated with poor healthcare outcomes (Wakefield, 2010). The number of Missouri citizens living in underserved urban and rural provider areas in Missouri is 1,097,274 or 18.6% as compared



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to 11.8% nationally (Missouri Department Health Human Services, 2012). APRNs represent 20% of the total available primary care providers across the United States (Center to Champion Nursing in America, 2012).

Nearly 90% of nurse practitioners are educated in primary care in stark contrast to physician education. Eighty eight percent of nurse practitioners see Medicare patients, 80% see Medicaid patients, and over 60% see charitable or uncompensated care patients (American Academy of Nurse Practitioners, 2013). Eighteen percent of nurse practitioners work in areas with populations less than 25,000. States with less scope of practice regulations have much higher percentages of nurse practitioners that work in rural areas. The states with more onerous scope of practice regulations are associated with lower numbers of nurse practitioners working in rural areas (American Academy of Nurse Practitioners, 2013). A physician in an editorial in Forbes suggested the onerous licensing laws and a “guild-minded” state medical boards should allow qualified health professionals to render care independent of physicians (Amesh Adalja, 2013). Given this documented shortage of healthcare providers, it is perplexing that Missouri’s (predominately rural state) underserved patients have extreme statutory and regulatory barriers to competent APRN care.

## WHO ARE APRNs?

- **APRNs are registered nurses who have completed graduate level education, are board certified by a nationally recognized certifying body, and deliver care in primary and specialty care settings.**
- **APRNs include: nurse practitioners, clinical nurse specialists, certified nurse midwives, and certified registered nurse anesthetists.**
- **Multiple studies support the high quality, safe, and cost-effective care provided by APRNs, and low litigation costs associated with care.**

### Who are APRNs?

The APRN is a registered nurse who has completed graduate level education, is certified by a national recognized certifying body, is licensed as a registered nurse in Missouri and is recognized by the state as an APRN. The APRN’s graduate level educational program builds on the existing skills and competencies of registered nurses.

There are four major APRN roles: nurse practitioner, nurse anesthetist, certified nurse midwife, and clinical nurse specialist (American Association of Nurse Practitioners, 2010). All APRN roles have a long history with nurse anesthetists being introduced in the late 1870s (Nurse Anesthetist Schools, 2011), nurse practitioners in the 1960s (Office of Technology Assessment, 1981), certified nurse midwives in the early 1920s (Vorvick, 2011), and the clinical nurse specialist role being developed in the late 1940s (Montemuro, 1987).

APRN education includes pathophysiology, health assessment, pharmacology, and clinical diagnosis and treatment. This education prepares them to diagnose, treat, and prescribe. The educational curriculum focuses on attainment of key competencies as contrasted to specific timelines (American Academy of Nurse Practitioners, 2011a). APRNs demonstrate a dedication to learning and are required to obtain continuing education in order to maintain their national certification.

APRNs are licensed practitioners who practice independently and in collaboration with other members of the healthcare team (American Academy of Nurse Practitioners, 2010). They practice throughout the United States, and are utilized internationally. APRNs are shown to provide quality care with high patient satisfaction and associated reductions in cost (Sheer & Wong, 2008).

Multiple studies confirm the cost effectiveness of APRN care (Bauer, 2010; Brooten, Youngblut, Kutcher, & Bobo, 2004). In a 2004 study researchers found that the more APRNs employed by a primary care practice, the lower the labor cost per visit (Roblin, Howard, Becker, Adams, & Roberts, 2004). APRN care is associated with reduced healthcare cost through reducing hospital length of stay and readmissions, decreasing emergency room utilization for nonemergent conditions, greater use of preventative measures, and fewer laboratory fees (Brooten, et al., 2004; Coddington & Sands,

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2008; McGrath, 1990). When APRNs were added to a multidisciplinary team with physicians at a tertiary academic medical hospital, the average length of stay was significantly lower, resulting in lower cost of care (Cowan et al., 2006; Ettner et al., 2006a). Chen, McNeese-Smith, Cowan, Upenieks, and Afifi (2009) analyzed pharmaceutical claims of 1,200 hospitalized subjects. The subjects whose care was facilitated by an APRN led multidisciplinary team had reduced drug utilization and cost as well as decreased length of stay compared to those not care for by the team. The cost savings outweighed the cost of the multidisciplinary team (Chen, McNeese-Smith, Cowan, Upenieks, & Afifi, 2009). A three year analysis of an on-site APRN for an employer with approximately 4,000 employees resulted in significant reduction in healthcare cost (Chenoweth, Martin, Pankowski, & Raymond, 2008)

The statutory regulation of the APRN is determined by state rather than federal legislation, resulting in marked variations in interstate scope of practice (Flook, 2003). The Institute of Medicine has developed guidelines to assist state legislators in evaluating barriers to APRN practice (Institute of Medicine, 2011). Creating legislative change in APRN scope of practice has the potential to positively affect nearly six million Missouri residents (Office of Social and Economic Data Analysis, 2009) by improving access to quality healthcare.

According to the Missouri Hospital Association (MHA), there does not seem to be a clear solution within Missouri's model of healthcare delivery to resolve the problems related to lack of access to healthcare providers and escalating costs (Missouri Hospital Association, 2011). The numbers of APRNs in Missouri are substantial including: 4,720 Nurse Practitioners, 1,720 Certified Registered Nurse Anesthetists, 381 Clinical Nurse Specialists and 102 Certified Nurse Midwives. As of July 1, 2013, there were 6,923 APRNs in Missouri ready to collaborate with all stakeholders in achieving solutions to our healthcare crisis (Missouri Board of Nursing, 2013). A recent poll indicates that there is strong public support for greater access to nurse practitioners (AANP, 2013).

### APRNs AND HEALTHCARE COSTS

- **The fully utilized APRN can provide significant savings to the healthcare system.**
- **Despite the savings, the quality, safety, and satisfaction of APRN care remains high.**

The financial case in support of APRNs is compelling. For example, at the University of Virginia Health System, a nurse practitioner model established in the acute neuroscience unit decreased inpatient visits resulting in a net savings of \$2.4 million dollars the first year of operation. The American Association of Medical Colleges (AAMC) workforce conference presented data comparing a nurse practitioner led clinic to that of a traditional model. Findings indicated the annual cost of care serving 10,000 patients was \$800,000 compared to \$3 million dollars in the traditional practice. Another study that compared healthcare insurance claims of NPs to that of physicians revealed lower costs with the nurse practitioner's care (Roblin et al, 2004). The relationship of scope of practice to billing may cause a reduction in the billing credited to the nurse practitioner as incident to billing attributes the care to the physician (Kuo, Loresto, Rounds & Goodwin, 2013).

Eibner et al (2009) in conjunction with the Rand Corporation conducted a forecast analysis comparing the cost of care provided by advanced practice nurses to that of physicians. The findings predicted the cost of a patient visit to a NP (or physician assistant) would average twenty to thirty-five percent less than a visit to a physician. Substituting NPs for physicians was expected to result in annual projected statewide savings of 4.2 to 8.2 billion dollars for the period 2010 to 2020. Based on these estimates, it appears that incorporating N P as healthcare providers could result in substantial cost savings. The sentinel report created by the Missouri Foundation for Health entitled: Bending the Health Care Curve in Missouri (2012) indicated the fully utilized APRNs would result in significant health care savings. Increasing the number of primary care practitioners in a state by 1 per 10,000 population associated with decreasing the number of specialists is associated with a rise of that state's quality rank of more than 10 places as well as a reduction in overall spending of \$684 per beneficiary) Missouri Foundation for Health, 2012). . Furthermore, the Missouri Foundation for Health report: Bending the Health Care Curve reveals that Missouri could save 1.6 billion dollars over the next decade

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through expanding the scope of APRN practice, 4.3 billion through shared decision making with palliative care, and patient care coordination which would result in a savings of 11.9 billion dollars (Missouri Foundation for Health, 2012).

### Healthcare Outcomes and Patient Satisfaction:

The role of the APRN initially emerged in the 1960s to address healthcare disparities specifically for those living in underserved areas. Since the creation of the APRN role, no credible published studies have demonstrated adverse outcomes from care provided by APRNs. To the contrary, multiple studies have demonstrated equivalence of APRN and physician care delivery outcomes (Mundinger et al, 2000; Newhouse, 2011, Lenz, 2002; Fairman, 2011; Hughes, 2010).

As early as 1974, a Canadian randomized trial comparing physicians to NPs found no significant differences between patient outcomes including mortality, patient satisfaction, and overall patient functioning (Spitzer et al., 1974). Similarly, the U.S. Office of Technology Assessment studied APRN, Physician Assistants (PAs) and physicians and determined that the level of quality of care was equivalent to that of physicians (Leroy, 1981).

More recent studies have produced similar results. Care provided by APRNs repeatedly has been found equivalent to that of physician effectiveness, treatment and prescribing patterns and overall patient health status outcomes. Additionally, APRNs frequently rated higher than physicians in overall levels of patient satisfaction, consultation time, and preventive screenings (Lenz et al., 2002; Seale, 2006). The National Institutes of Health encourages all organizations and professional societies to collect information and promote transparency of outcomes of these types of studies (Institute of Medicine, 2012). A modest study that reflected that patients prefer to see a physician instead of a nurse practitioner is refuted with an analysis that actually reveals timely access trumps patient preference for physicians (Chan, T. 2014)

## BARRIERS PREVENTING FULL UTILIZATION OF ADVANCED PRACTICE REGISTERED NURSES

- **Missouri citizens have restricted access to APRN care.**
- **Missouri has many barriers to APRN care and is one of the most restrictive states in the U.S.**
- **Excessive regulations place barriers to APRN care and have significant costs to the healthcare system and patients.**

Missouri APRNs have one of the most restrictive practice environments in the U.S. When regulations are unnecessary they are barriers. These barriers are costly and can impede access to high quality and safe care for APRN patients (Conover, 2004). It is important to remove the barriers to APRN care in order to increase patient access.

### Examples of Barriers to APRN Care: (Missouri Department of Professional Regulation, 2014)

1. Collaborative Practice Agreements: Missouri APRNs must enter into a collaborative practice agreement with a physician.

- That physician must be located within 50 miles of the APRN in a HPSA or 30 miles in a non-HPSA. Eighty percent of Missouri counties are considered physician shortage areas and only ten percent of new physicians are going into rural primary care. Many new physicians are not willing to practice in rural, underserved areas. This limits APRNs' ability to practice tremendously as a collaborating physician may not be available within the geographic restriction. **As of 2013, physicians in rural health clinics are exempt from this regulation for 28 days of the year; however, chart review and examination of patients in 2 weeks would restrict this to a maximum of 14 sequential days.**
- APRNs are required to practice in the same location as the collaborating physician for one month prior to practicing at a separate location. If the collaborator changes, this process must be repeated. During this time, the APRN's availability to see patients is restricted to the location of the new collaborative physician. (Collaborative Practice Rule, 2011).

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- A physician is limited to collaborating with no more than three full-time equivalent APRNs (Collaborative Practice Rule, 2011).
- An APRN is not allowed to prescribe controlled medications, such as pain medications containing narcotics, unless the collaborating physician allows such prescriptive privileges within the collaborative practice agreement (Collaborative Practice Rule, 2011). If the APRN is delegated controlled substance prescriptive authority by the collaborating physician, the APRN may not prescribe Schedule II drugs and is limited to prescribing a 120-hour supply of narcotics in Schedule III (Collaborative Practice Rule, 2011). Patients with chronic disease states such as Cancer, Rheumatoid Arthritis, Hospice patients, and patients across the lifespan with ADHD frequently require Schedule II controlled substances. Restrictions associated with APRN prescriptive authority for controlled substances result in limited patient access to legitimately needed medications. It is of interest that ambulance personnel have broader access to provide patient relief than APRNs in Missouri (Title 21, CFR Section 1300.01, b28, 2013).
- If the APRN provides services to a patient for other than an acute self-limited or well-defined condition, the patient is to be examined and evaluated by a physician within two weeks (Collaborative Practice Rule). This creates the burden of an extra visit, extra charges, loss of wages, and a time constraint for the patient. In the majority of practices, it is not feasible to reschedule the patient with the collaborating physician within two weeks.
- The collaborating physician (or other designated physician) must be immediately available for consultation (Collaborative Practice Rule, 2011). If the collaborating physician or designee is unavailable (vacation, on-leave, etc.), patient services cannot be provided by the APRN.
- When the APRN practices at a separate site from the collaborator, the collaborating physician shall be present at that site at least once every two weeks to review the APRN's services and to provide medical services (Collaborative Practice Rule, 2011).
- The collaborative practice physician's signature is required on the death certificate and often delays burial, which causes emotional distress to families.
- A physician must review Ten percent of APRN charts. In 2012 a physician group lobbied to allow any physician (other than the collaborating physician) to sign off on chart reviews.

2. **Reimbursement:** Missouri APRNs are considered capable of being licensed independent providers by the Missouri Board of nursing, Joint Commission on Accreditation of Healthcare Organizations (JCAHO), and all of the APRN certification organizations. However, numerous insurance companies will not reimburse Missouri APRN's for their services.

3. **Liability concerns:** Physicians are concerned that they are liable for care that they did not provide. Physicians are required to complete a 10 percent chart review. The chart review increases to a 20 percent chart review if controlled substances are prescribed. The chart review requirement places a significant burden on physician time and can affect patient access to care.

4. **Safety concerns:** Numerous studies demonstrate that APRNs have increased patient satisfaction, increased patient compliance, and equal patient outcomes for care provided by APRNs versus physicians to similar patients. Yet the AMA continues to publish unsubstantiated reports questioning the safety of APRN practice. Hooker (2009) has published many articles that the malpractice claims on APRNs are dramatically fewer than those compared to MD and DOs.

### Results of Barrier Reductions:

- Removing the 30/50mile rule requirement would increase access to APRNs care and increase access to competent healthcare providers in both rural and urban underserved areas.
- APRN practice and patient access to care would not be hindered by the availability of a physician collaborator.
- APRNs would be able to provide all indicated prescriptions for all patient populations.

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- Patient access to care would not be interrupted due to infringement on physician time in completing APRN chart review requirements.
- Improved interdisciplinary collaboration as indicated by the patient's needs and provider assessment. Telecommunication allows for real time collaboration when on-site collaboration is difficult or impossible.
- The Missouri State Board of Nursing will be solely responsible for promulgating rules and requirements for continuing education including pharmacology.

### Benefits to Missouri Citizens if legislation is enacted:

- Broader access to healthcare in all areas, including rural and urban underserved areas in Missouri.
- Increased APRN availability will increase overall number of healthcare providers to care for a growing number of patients and an aging population.
- APRNs will be able to provide assistance anywhere in the state of Missouri in the event of an emergency. After the recent Joplin tornado, APRNs from across the state were not able to provide care to storm survivors due to practice restrictions imposed by Missouri collaborative practice regulations.
- Prescriptions will be labeled with the correct APRN provider decreasing the confusion by patients and pharmacies.
- Diagnostic tests will be ordered by and reported to the correct APRN provider, thus decreasing the potential for delayed evaluation and treatment.
- Death certificates will not be delayed allowing grieving families to proceed with funeral arrangements.
- With aligning scope of practice statute and rules with actual practice, a net savings of \$1.6 billion from 2012 to 2022 (Missouri Foundation for Health, 2012).

In a time when health care providers access is most needed, excessive regulations negatively impact NPs utilization by medical groups (The Advisory Board Company, 2014). Missouri is specifically cited in this report. Despite the declining primary care physician access in all states, states with more restrictive laws, may have a more marked shortage, as nurse practitioners may not be in a position to alleviate the shortage of primary care (Domrose, 2014).

## NURSE PRACTITIONERS

- **Nurse Practitioners have been in existence in the United States for more than half a century.**
- **Excessive rule making has hampered effective legislation for nurse practitioners.**
- **Nurse practitioners provide both primary and specialty care to patients in a wide range of settings.**
- **Multiple studies support the cost-effective, high quality, safe, highly satisfying, and low litigation associated with care delivered by nurse practitioners.**

### National History:

The first NP program was developed due to a lack of healthcare services in the 1960s. Medicare and Medicaid had just been initiated, expanding the need for healthcare providers. Loretta Ford, RN, a nursing educator, and Henry Silver, MD, a pediatrician, saw the need for an extension of healthcare services that nurse-physician collaboration would fill. The first NP program, specializing in pediatrics, was founded in 1965 at the University Of Colorado School Of Nursing. The practice focus changed to primary care in the 1970s, with the focus on providing access to primary healthcare for large and underserved populations. The role was fully recognized in 1971 when the Secretary of Health, Education and Welfare recommended support of this primary care (PCP) role and federal monies were made available to support NP programs nationally. At this time there was expansion into other specialties such as family practice, adult/geriatrics, psychiatric, and women's health. By the late 1980s, programs were added in acute care as well. At one point there were over 500 certificate programs, which then shifted to Master's Degree programs, with current transition to the Doctor of Nursing Practice (DNP). Each state independently regulated NP practice, some by the boards of nursing, the boards of pharmacy, or the boards of healing arts, either individually or all three in some form. By 2000, NPs were legally recognized to practice in every state, some with full autonomy, and some with restrictions. According to Smith



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and Jacobs (2012) Lugo rates Missouri as 50<sup>th</sup> out of 51 (Lugo, 2007). Missouri rated last in patient access to nurse practitioner care. This study was performed at San Diego University with extensive statistical measures to identify restrictions. Traczynski and Udalova (2013) the frequency found that in states where barriers are reduced that frequency of routine checkups and quality outcomes improve with an associated reduction in emergency room visits. They also found an associated reduction of costs due to decreases in administrative burdens. States with fewer regulations on nurse practitioners have associated increase in patients seen by nurse practitioners (Kuo, Loresto, Rounds, & Goodwin, 2013).

### **Missouri Nurse Practitioner Historical Timeline:**

**1974**-Missouri's Nursing Practice Act was revised to redefine the scope of practice for nurses to reflect national trends and provide more autonomy for advanced practice. The revised act deleted the phrasing "under the direct supervision of a physician" and "nothing in this Act shall be construed to be the practice of medicine" (Doyle E., Meurer, J., 1983). This Act passed the Senate and the House, only to be vetoed by then Governor Kit Bond.

**1975**-The Missouri Nurses' Association and other professional organizations supportive to the Act pushed a successful veto override, the first in 138 years (Doyle, E. , Meurer, J., 1983).

**1980**- The functions of two NPs practicing in rural Missouri were investigated by the Missouri Board of Healing Arts. Subsequently, the NPs were charged with practicing medicine without a license, and their physician collaborators were charged with "aiding and abetting" the practice. The case was tried in the St. Louis County Circuit Court. In Nov. 1982 the court ruled that the NPs were indeed involved in the unauthorized practice of medicine. The case was appealed to the Missouri Supreme Court.

**1983**-*Sermchief v. Gonzales* – The NPs found to be involved in the unauthorized practice of medicine by the St. Louis County Circuit Court, and their collaborating physicians, appealed their case to the Missouri Supreme Court. The Missouri Supreme Court ruled in favor of the NPs and their collaborating physicians, finding that the NPs acts were authorized under the current nurse practice, and therefore did not constitute the unlawful practice of medicine. Within the opinion, the Court recognized the intent of the statutory language to "avoid statutory constraints on the evolution of new functions for nurses delivering health services." Further the Court stated that the "broadening of the field of practice authorized by the legislature and here recognized by the Court" carries with it professional responsibility for maintaining high educational standards and recognizing the limits of one's professional knowledge (Missouri Supreme Court, 1983).

**1987**-The Missouri Board of Healing Arts amended its Practice Act to state that physicians would be disciplined if they provided medication to a patient without first establishing a "physician-patient relationship". This action purposely restricted NPs from seeing any new patients who had not first been seen by an MD. The Board of Healing Arts and the Board of Pharmacy began investigating physician practices that collaborated with NPs (E. Doyle, Pennington,D., Kliethermes,J., 2010).

**1990**-Health Care Access Coalition drafted a legislative amendment to prevent disciplinary action against physicians and NPs in a collaborative practice. This passed, but was vetoed by then Governor John Ashcroft. It passed again in 1991 and became law.

**1992**-Work began on legislation (HB 564) to clarify collaborative practice and add prescriptive privileges for NPs in Missouri. This legislation focused on increasing access to healthcare and healthcare providers in Missouri.

**1993**-After strong opposition from the medical community and many compromises, HB 564 passed. It took three years for the regulations to be agreed on by the Boards of Nursing, Healing Arts, and Pharmacy.

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**1996**-Amendment to the Nurse Practice Act (NPA) defined the APRN.

**2005**-Legislation introduced to give APRNs the ability to prescribe controlled substances Schedules II-V. The bill failed.

**2006**-Legislation regarding APRN prescriptive authority for controlled substances re-introduced, and subsequently failed again.

**2008**-Revised legislation, allowing APRNs limited ability to prescribe controlled substances (Schedules III-V) was passed (SB 724).

**2011**-Rules are promulgated and finalized for SB 724, allowing APRNs to apply for a BNDD number and to prescribe controlled substances.

**2012**-Legislation was introduced (HB 1563) allowing any physician (not limited to the collaborating physician) to perform the mandated ten percent chart review (Missouri General Assembly, 2012a). HB 1371 (Rep Weter) and SB679 (Senator Dixon) were introduced with multiple bill sponsors, received hearings yet failed to eliminate the collaborative practice agreement and its multiple barriers (Missouri General Assembly, 2012a). The campaign to improve access to APRN care shifted from “Barrier Free” to “Tricameral Approach to ACCESS”. This model focuses on all three governmental arms to achieve the goals. Many meetings were held with the Governor and his staff to focus on ways to reduce barriers.

**2013**-Legislation was introduced by Representative Rowland (HB 314 with multiple bill sponsors) to create a transition to practice for APRNs. This bill had a significant majority vote in committee but was stalled in rules committee by Representative Riddle. Senators Sater and Wallingfords bill –SB167 (would have reduced many barriers to APRN access: eliminated the geographic rule, created a license for APRNs (Instead of document of recognition) and included all APRNs for MoHealthnet reimbursement. The bill had a hearing in the senate but did not make it to the floor for a vote in its original form. The achievement of this bill was the expansion of all APRNs for reimbursement by MoHealthnet. Representative Swan (HB936) introduced a bill allowing APRNs to utilize tele-health in underserved areas of Missouri. This bill passed and was signed into law. The bill is currently stalled in rule promulgation between the Board of Nursing and the Board of Healing Arts. A concerning bill that was passed was HB653, commonly known as the community paramedic bill. This bill allows paramedics to provide community primary care with protocols developed with a physician. Representative Barnes introduced HB 700, which would have expanded Medicaid to 138% of the Federal Poverty Level. The bill failed but it brought about one Senate and two House committees that had hearings on the need for Medicaid expansion (MoHealthnet in Missouri).

**2014**-The legislative season will focus on moving the APRN language regarding diagnose, treat, assess, and prescribe from the physician statute to the nursing statute. It will also focus on changing geography to effective communication, and eliminating many of the rules that hinder patient access to APRN care. In addition, we will attempt to expand prescriptive authority to schedule two through five.

### **Definition of the Role:**

Nurse Practitioners (NP) are healthcare providers who practice in a variety of rural and urban healthcare settings, including ambulatory clinics, hospitals, emergency/urgent care and long term care, retail based clinics, schools and colleges, and public health departments as primary care and/or specialty providers. According to their practice specialty they provide nursing and healthcare services to individuals, families, and groups in addition to diagnosing and managing acute episodic and chronic illnesses. NPs emphasize health promotion and disease prevention. They practice autonomously and in collaboration with other healthcare professionals. They serve as healthcare providers, researchers, interdisciplinary consultants and patient advocates. (AANP, Scope of Practice for Nurse Practitioners, 2010).

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### **Services Provided:**

NPs provide healthcare to diverse populations, focusing on the whole person and their families. Services include, but are not limited to: history and physicals, ordering, conducting, supervising, and interpreting diagnostic tests. In addition NPs prescribe medications, treatments and non-pharmacologic therapies. Teaching and counseling individuals, families, and group, are also a major part of NP practice.

### **Education:**

In Missouri, it is a requirement that NPs have a graduate degree in nursing to become recognized as an advanced practice nurse. NPs in Missouri are required to hold national certification their role and population foci. National certification indicates that the NP has successfully met the standards and competencies of a nationally recognized, accredited test of knowledge. Maintenance of certification, which includes ongoing continuing education, is required for continued recognition as a NP in Missouri. Nurse practitioners hold a registered nursing license and a document of recognition as a nurse practitioner.

### **Affordability:**

Multiple studies demonstrate the cost effectiveness of NPs as healthcare providers. According to a Tennessee state Managed Care Organizations (MCOs) study, NPs delivered healthcare at 23 percent below the average cost of other primary care providers, with a 21 percent reduction in hospital inpatient rates, and 24 percent lower lab utilization rates as compared to physicians (Spitzer, 1997). In a 2004 study researchers found that the more APRNs employed by a primary care practice, the lower the labor cost per visit (Roblin, 2004).

“Chenowith et al. (2005) analyzed the healthcare costs associated with an innovative onsite NP practice for over 4,000 employees and their dependents. Compared with claims from earlier years, the NP care resulted in significant savings of .8 to 1.5 million dollars with a benefit to cost ratio up to 15 to 1.” The cost savings begins with the education that is less than 25% of that of physicians (AANP, 2013). When productivity, salaries, and costs of education are considered, NPs are cost-effective providers of healthcare services.

### **Quality Outcomes:**

In the over 40-year history of the NP profession, a multitude of studies have demonstrated that NPs have performed as well as physicians caring for similar patients with respect to health outcomes, proper diagnosis, management, and treatment (Newhouse, et al., 2011). NPs are well prepared to provide care to the acute as well as chronically ill patient (R. Newhouse et al., 2011).

NPs are highly productive members of the healthcare team (Larson, Palazzo, Berkowitz, Pirani, & Hart, 2003), providing effective care to a wide range of patient populations with a lower litigation burden (Hooker, et al., 2009). Studies comparing the quality of care given to patients in the nursing home (Bakerjian, 2008), with AIDs (Wilson et al., 2005), chronic illnesses (Ohman-Strickland et al., 2008; Paez & Allen, 2006), in ambulatory care (Lin, Hooker, Lens, & Hopkins, 2002), in primary care (Horrocks, Anderson, & Salisbury, 2002; Lenz, Munding, Kane, Hopkins, & Lin, 2004; Munding et al., 2000; Sackett, Spitzer, Gent, & Roberts, 1974; Safriet, 1992), in the emergency room (Cooper, Lindsay, Kinn, & Swann, 2002) and a variety of other circumstances and settings (Avorn, Everitt, & Baker, 1991) indicate the care is equivalent between physicians and NPs when caring for similar patients. According to the National Center for Health Statistics (National Center for Health Statistics, 2011), NPs are being utilized in outpatient departments of hospitals at increasing rates. When contrasted to physicians, NPs have a higher percentage of visits involving new patients with a new problem. NPs also see significantly greater percentages of uninsured patients, and Medicaid and Children’s Health Insurance Plan (CHIPs) beneficiaries. (National Center for Health Statistics, 2011), and are well received by healthcare consumers (Flanagan, 1998; Roblin, Becker, Adams, Howard, & Roberts, 2004; Sox, 2000).

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Reductions in healthcare costs are associated with APRN directed care, as evidenced in a recent study showing annual cost reductions from \$5,210 to \$3,061 among chronically ill patients (Meyer, 2011). The cost effectiveness of NP care in a variety of healthcare settings is well documented (Burl, Bonner, & Rao, 1994; Chen, McNeese-Smith, Cowan, Upenieks, & Afifi, 2009; Chenoweth, Martin, Pankowski, & Raymond, 2005; Chenoweth, et al., 2008; Coddington & Sands, 2008; Cowan et al., 2006; Hunter, Ventura, & Kearns, 1999; Paez & Allen, 2006; Roblin, et al., 2004; Sears, Wickizer, Franklin, Cheadle, & Berkowitz, 2007). NPs can also lower personnel costs (Office of Technology Assessment, 1981; Roblin, et al., 2004). Fully utilized APRNs offer primary and specialty care and can reduce costs to the system (Chen, et al., 2009; Chenoweth, et al., 2008; Coddington & Sands, 2008; Cowan, et al., 2006; Ettner et al., 2006; Hunter, et al., 1999; Paez & Allen, 2006; Douglas W. Roblin, et al., 2004; Sears, et al., 2007). Nurse Practitioner malpractice claims represent .3% of overall claims to the National Practitioner Data Bank; a sharp contrast to physician claims at 45.1% and physician assistant claims at .6% (Miller, 2012). Nurse practitioner care in retail clinics increases access but also reduces health care costs (Tu & Boukus, 2013). Fully utilizing NPs and PAs in Missouri by reducing barriers to scope of practice would result in a savings of 1.8 billion dollars through 2012 (Missouri Foundation for Health, 2012). The effect of broadening scope of practice for NPs and PAs would reduce primary care costs by 20% (Missouri Foundation for Health, 2012)

### Reimbursement and Enrollment:

Through the Balanced Budget Act of 1997, Congress authorized the Medicare program to reimburse NPs at 85 percent of the physician rate. Medicaid reimbursements are calculated on a rate per unit basis. Commercial insurers reimburse healthcare providers on a fee-for-service basis. Each payer has its own policy related to reimbursement for NP services. For example, Managed Care Organizations (MCOs) reimburse only those providers admitted to the plans' provider panels. MCOs do not admit every physician to provider panels and may or may not admit NPs to providers' panels. Commercial MCO policies on empanelment of NPs vary. The challenge in Missouri is increased, as the PPACA did not specifically include nurse practitioners in the bonus payment for primary care. Centers for Medicare and Medicaid Services did include nurse practitioners for the primary care bonus. States may choose to include other primary care providers in the bonus (Centers for Medicare and Medicaid Services, 2011). Missouri has not chosen to pay NPs the bonus. The physician bonus may also be received through incident to billing from care given by APRNs employed by them. This type of model reduces the fiscal viability of APRNs in the most remote places of Missouri where care is needed. The incident to billing model is ripe for potential fraud and abuse.

## CLINICAL NURSE SPECIALISTS

- **Clinical nurse specialists deliver care in acute and chronic settings to a wide range of patient populations.**
- **Clinical nurse specialists have been active in the United States for nearly three quarters of a century.**
- **Multiple studies support the cost-effective, high quality, safe, highly satisfying, and low litigation associated with care delivered by clinical nurse specialists.**

### History:

The concept of the clinical nurse specialist (CNS) began to evolve in 1943 when Frances Reiter first coined the term "nurse clinician", who would be a master prepared nurse and remain at the bedside (Reiter, 1966). Hildegard Peplau developed the first master's program in psychiatric nursing at Rutgers University in 1954 (Walker, et al, 2003). Clinical nurse specialists programs were the first advance practice nurse programs to require graduate level preparation (Delamatter, 1999).

The CNS role was based on the premise that patient care would improve when advanced practitioners with specialized knowledge and skills stayed at the patient's bedside. The CNS role in medical and surgical nursing was originally designed to assist head nurses to prepare staff for clinical quality. The CNS is at least master's prepared and brings enhanced specialty nursing expertise to the patient.



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Acceptance of the CNS role grew during the 1960s with the establishment of Medicare and Medicaid, technological advances such as cardiac-thoracic surgery and coronary care, and the development of the clinical specialist role in psychiatric nursing. These advances lead to increase opportunities for the CNS in the hospital (Chitty, 2007). In the 1970s, the American Nurses Association officially accepted the CNS as an expert practitioner (Rose, 2003). The expanded roles of educator, expert clinician, change agent, manager, and advocate occurred in the early 1980s. Changes to healthcare during the 1980s lead many CNSs to obtain positions in education and administration.

In 1998, the National Association of Clinical Nurse Specialist established the first set of competencies, which clearly identified the CNS from other APRN roles (Rose, 2003). Clinical nurse specialists can be seen in hospital facilities, but also found doing research, working with physicians and other providers in private practice, providing care at community based organizations, expanding their role as a school health provider, and working in nurse managed clinics. The basic components of the CNS role hold true regardless of the setting (Rose, 2003).

### **Definition of the Role:**

The CNS has a unique advance practice role to integrate care across the continuum and through three spheres of influence: patient, nurse, and system. The three spheres are overlapping and interrelated, but each sphere possesses a distinctive focus (National Council of State Boards of Nursing). In each of the spheres of influence, the primary goal of the CNS is continuous improvement of patient outcomes and nursing care (National Council of State Boards of Nursing, 2008).

Key elements of the CNS practice are to create environments through mentoring and system changes that empower nurses to develop caring, evidence-based practices to alleviate patient distress, facilitate ethical decision-making, and respond to diversity. The CNS is responsible and accountable for diagnosis and treatment of health/illness states, disease management, health promotion, and prevent of illness and risk behaviors among individuals, families, groups and communities (National Council of State Boards of Nursing, 2008).

### **Education:**

In December, 2011, the American Nurses Association and National Association of Clinical Nurse Specialists affirmed the definition of a CNS as a registered nurse prepared at the master's or doctoral level as a CNS from an accredited educational institution and recognized by his/her state to practice as a CNS. States determine the practice requirements for all APRNs. The APRN Consensus Model, released to state boards of nursing in January, 2011, requires certification for state licensure.

The CNS receives education at the graduate level in the specific area of a clinical nurse specialty. This education is specific to the diagnosis and treatment of health/illness states, disease management, health promotion, and prevention of illness and risk behaviors among individuals, families, groups, and communities. CNS education includes the study of a specific population and requires all programs to offer content on pharmacology, pathophysiology, and health assessment (NACNS email communication 11/21/2011). CNSs hold a registered nursing license and a document of recognition as a clinical nurse specialist.

### **Services Provided:**

The CNS incorporates and applies theories of nursing as well as consultation, research generation and utilization, education, and leadership to improve outcomes for patients and populations, nursing personnel, and systems. Key elements of the CNS practice include:

- Demonstrating clinical expertise in direct care,
- Integrating care across the continuum of providers and settings,
- Using research and evidence-based practice to design, revise, and evaluate clinical practice affecting patients, populations, and/or care delivery systems to improve outcomes in a cost-effective manner,



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- Developing innovative educational programs, based on learner needs, for patients, families, nursing personnel, other healthcare providers, and communities,
- Collaborating with multiple disciplines to facilitate intra- and interdisciplinary best practice,
- Assisting patients and families, directly and indirectly, to navigate a complex healthcare system, and
- Consulting with nursing staff related to patient and family care needs (Doyle, Pennington, & Kliethermes, 2010)

### **Affordability:**

The cost effectiveness of the CNS is exhibited in multiple studies (National Association of Clinical Nurse Specialists, 2013). Implementation of the CNS role is associated with improvement in patient outcomes (Newhouse, 2011).

### **Quality Outcomes:**

The CNS is instrumental in achieving high quality care in various patient care settings. CNSs employed in acute care hospitals have helped those organizations achieved Magnet status through the American Nurses Credentialing Center, which recognizes exceptional nursing care with resulting improved patient outcomes. In addition, CNSs often lead continuous quality improvement programs because their advanced knowledge of systems theory, design and evaluation of evidence-based programs, and multidisciplinary teamwork provides the expertise needed to achieve high quality outcomes (National Association of Clinical Nurse Specialists, 2013).

Direct care provided by CNSs is safe, effective, and results in high patient satisfaction. A few of the numerous studies that describe CNS practice are listed below:

- Early findings of a randomized, controlled study of outcome and cost effectiveness for arthritis patients attending CNS-led rheumatology clinics, compared to physician-led clinics, show that functional status, disease symptoms, and patient satisfaction are similar between groups (Ndosi et al., 2011).
- APRN psychiatric nurses are essential to a transformed mental health service delivery that is patient-centered, evidence-based, and recovery oriented (Hanrahan et al., 2010).
- A comparison of care provided by CNSs and general practitioners at a cancer clinic found that the care by CNSs resulted in similar levels of patients' quality of life. Patients valued the relationship developed with the CNS, had longer and more frequent consultations, and were more often referred to the multidisciplinary team. There were indications that oral and nutrition problems were managed more effectively in the nurse-led clinic, although emotional functioning was higher in the medical group (Wells et al., 2008).
- The Cochrane Database group conducted a meta-analysis including 25 articles relating to 16 studies comparing outcomes of CNSs and other primary care nurses and physicians. Overall, health outcomes cost of services was equivalent for nurses and physicians. The satisfaction level was higher for nurses (Laurant et al., 2006).

### **Reimbursement and Enrollment:**

In the Balanced Budget Act of 1997, Congress authorized the Medicare program to reimburse CNSs when they perform physician type services within their scope of practice, as long as the CNS holds a state license. The reimbursement rates, however is 85 percent of the physician rate for office visits and 75 percent for hospital services. It should be noted that a collaborative practice agreement must be in place for reimbursement to occur (Doyle, Pennington, & Kliethermes, 2010). CNSs are reimbursed for services from Missouri Health Net, but barriers do exist. Many times prior authorization is required and the numbers of sessions are limited. Most insurance companies and manage care plans will credential the CNS, but most reimburse at a lower rate than physicians (Doyle, Pennington, & Kliethermes, 2010).

## CERTIFIED NURSE MIDWIVES

- The profession of nurse midwifery has been present for nearly one century in the United States.
- Nurse midwives provide primary care in the prenatal, natal and post natal periods of life.
- Nurse midwives deliver care in in-patient and outpatient settings.
- Multiple studies support the cost-effective, high quality, safe, highly satisfying, and low litigation associated with care delivered by certified nurse midwives.

### History:

The profession of nurse-midwifery was established in the 1920s in response to the alarmingly high rate of infant and maternal mortality in the US at that time. Simultaneously the Maternity Center Association (in New York City) and the Frontier Nursing Service (in eastern Kentucky) were established to organize and train public health nurses to provide education and care to some of the most vulnerable women in America. These two nurse-midwifery services were very successful at improving health outcomes and began to offer educational programs for nurse-midwives by the 1930s. The American College of Nurse Midwives (ACNM, 2014) is the national organization for nurse-midwives. ACNM grew out of the National Organization for Public Health Nurses and was incorporated in 1955 (Varney, Kriebs, & Geger, 2004).

### Definition:

Two types of midwives are recognized by the ACNM: certified nurse-midwives (CNM's) and certified midwives. In Missouri, only CNMs are practicing currently. CNMs are registered nurses who have completed an educational program (graduate level courses) accredited by the Accreditation Commission for Midwifery Education (ACME), and passed a rigorous national examination (American College of Nurse-Midwives, 2014).

### Services Provided:

CNMs provide primary care for women from adolescence through menopause and beyond. In providing primary care, CNMs prescribe medications, order laboratory and other diagnostic testing, offer health education and counseling and collaborate with other healthcare providers. Entry-level educational programs for CNMs emphasize reproductive healthcare including health promotion, pregnancy, childbirth, postpartum, family planning and gynecological care. Additionally, CNMs can care for male partners who need STI treatment and infants for the first 28 days of life (American College of Nurse-Midwives, 2014).

### Education:

A master's degree is the minimum requirement to be eligible to complete the national certification examination through ACME. National certification is required for licensure in the state of Missouri. Some CNMs have doctoral level education. CNMs have a registered nursing license and a document of recognition as a certified nurse midwife.

### Affordability:

Nurse-midwives have much lower salaries than obstetrician/gynecologists. Nurse-midwives accept Medicaid, Medicare, and most insurance.

### Quality Outcomes:

Certified nurse midwives improve infant outcome statistics (compared to obstetricians) when providing care to low risk women in hospital and birth center settings (Newhouse, et al., 2011). Nurse-midwives provide a standard of care that most closely adheres to recommendations by the American College of Obstetricians and Gynecologists. Finally, CNMs deliver care that is similar to that provided by physicians and CNMs have lower rates of cesarean sections, lower epidural use, and lower labor induction rates; while, maintaining infant and maternal outcomes (Newhouse, et al., 2011)

## CERTIFIED REGISTERED NURSE ANESTHETISTS

- CRNAs deliver the majority of anesthesia care in Missouri and do so without the statutory mandate of an anesthesiologist.
- CRNAs provide trauma and anesthesia care in most of rural Missouri.
- Multiple studies support the cost-effective, high quality, safe, highly satisfying, and low litigation associated with care delivered by CRNAs.
- CRNAs have been delivering care for one and one-half century in the United States.

### History and Definition:

#### Services Provided:

CRNAs provide anesthesia services in collaboration with surgeons, anesthesiologists, dentists, podiatrists, advance practice registered nurses, and other health care professionals. They practice in every setting in which anesthesia is delivered, including hospitals, ambulatory surgical centers, and physician offices. CRNA provided anesthesia services are especially predominant in the rural, medically underserved areas of the state. Of the Missouri counties with hospitals providing surgical services 45% offer anesthesia services provided solely by CRNAs. Without anesthesia services, these Missouri hospitals will not be able to provide health access to surgical, obstetrical, and trauma stabilization and airway management services. CRNA services include pre anesthesia evaluation, administering the anesthetic, monitoring and interpreting the patient's vital signs, and managing the patient throughout surgery. Approximately 32 million anesthetics are administered to CRNA patients each year (Missouri Association of Nurse Anesthetists, 2011). Fifty-five to 60 percent of Missouri Counties with hospitals are covered by CRNAs and without their critical services, there would be limited access to trauma, surgical, and obstetric anesthesia services (Missouri Association of Nurse Anesthetists, 2011).

#### Education:

All CRNAs graduate with a Master's degree upon successful completion of a nurse anesthesia program. They must pass a national certifying exam in order to practice. CRNAs in Missouri hold a registered nursing license and a document of recognition to practice as an advance practice registered nurse specializing in anesthesia. Some CRNAs hold a doctoral level of education and it is anticipated that in 10 years, a doctoral degree will be required for entry into practice for CRNAs.

#### Affordability:

Most managed care plans recognize CRNAs for providing high quality anesthesia care with reduced expense to patients and insurance companies. Since 1986, CRNAs have been recognized as Medicare Part B providers. As such, they can be reimbursed directly for their services. Hospitals are also directly reimbursed for the CRNA services under Medicare Part A. Nurse anesthesia service is 25% more cost-effective than the least costly anesthesia models (Hogan, Seiffert, Moore & Simonson, 2010). Most managed care plans and commercial insurers reimburse CRNAs. The utilization of CRNAs reduces cost when salaries between CRNAs and anesthesiologists are contrasted. This type of cost efficiency serves to constrain the escalating costs of healthcare (Needleman, 2008).

#### Quality Outcomes:

CRNAs are associated with equivalent complication and mortality rates when contrasted with physicians (Newhouse, et al., 2011). When CRNAs, physicians, or anesthesiologists provide anesthesia services; there is no difference in patient outcomes (Dulusse & Cromwell, 2010). There was no statistical difference in mortality between CRNAs who worked in collaboration with an anesthesiologist as contrasted with those who worked independently (Department of Health, 2005).

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As advanced practice nurses, CRNAs hold an enviable record of patient safety in providing anesthesia services to the citizens of Missouri. They have been serving Missourians for over 100 years. They live in every legislative district and work in nearly every facility in the state. Their education training and experience in providing anesthesia, and the CRNAs tradition of quality care in caring for Missouri citizens provide not only the needed access to healthcare services but help in reducing cost and providing affordable healthcare to patients.

### CLOSURE

The parallel of APRN education is similar to that of other professions. The history of the nurse physician relationship tends to cloud the obvious. APRNs have similar length of education and responsibilities to those in other professions e.g., law (7 years), chiropractor (7 years), optometry (8 years), pharmacy (7 years), and dentistry (8 years). Nursing has remained the most trusted profession in the past 11 years (Center to Champion Nursing in America, 2014).

In a recent physician journal, a physician advised that the federal government reduce costs to the health care system by providing bonuses to states that adopt the Institute of Medicine's recommendations regarding expanding the scope of APRNs (Emanuel et al., 2012). Other physician articles support the elimination of unnecessary regulations to promote patient access (Bodenheimer, T. & Smith M., 2013). His discussion on the powerful medical lobbies that focus on protecting turf and not patient safety are worth reviewing. As a physician, he has reviewed the literature and agrees that the evidence clearly supports APRN safety and effectiveness (Gorski, 2014). In a sentinel report the National Governors Association recommends a review of each state's scope of practice and evaluate the need to expand utilization of nurse practitioners to increase access to underserved areas (National Governors Association, 2014). Governors of states who border highly restrictive APRN scope of practice states are actively recruiting to increase care providers in their states (Massey, B. 2013).

The primary care shortage is a reality and one that needs to be addressed. The workforce shortage is more severe in rural areas and could be ameliorated by reducing barriers to care provided by APRNs (Coalition for Patient Rights, 2013). In a recent Rand Report, nurse managed health centers could mitigate or even eliminate the primary care physician shortage (Auerbach, et.al, 2013). A Pew survey revealed that Americans support the expansion of nurse practitioners as primary care providers and oppose laws that prevent citizens from selecting nurse practitioners as their care provider (Pew, 2013).

Robert Wood Johnson Foundation has invested over 592 million dollars in its support of the expansion of nursing practice (Hassmiller, 2013). In the newly released Miller Report, recommendation six addresses the need to expand scope of practice for APRNs. This report was developed without nursing input and committee members included physicians, CEOs of health care organizations, previous state governors, and a wide variety of other policy leaders. It was predicted that individual health care costs would accelerate to \$14,013 by the year 2021. A further recommendation of the report is for the national government to develop guidelines on consistent scope of practice for APRNs across the United States (Miller Report, 2014).

The outcome studies supporting the safety, quality, satisfaction, and cost effectiveness mandate a change in Missouri policy that allow patients to have access to care given by APRNs and the state of Missouri needs a new model of healthcare delivery that promotes quality and access while reducing costs. The time has come to provide sensible solutions to affordable access to primary care throughout all of Missouri. The nearly 7000 APRNs in Missouri are ready to be part of the solution to health care cost and access issues.

## REFERENCES:

- Access Denied: A look at America's medically disenfranchised. (2007). Retrieved on 12/9/2011 from [http://www.graham-center.org/PreBuilt/Access\\_Denied.pdf](http://www.graham-center.org/PreBuilt/Access_Denied.pdf)
- Adalja, Amesh. (2013). Sometimes the best medical care is provided by those who aren't M.D.S. *Forbes* 2/10/2013 retrieved on 1/13/14 from: <http://www.forbes.com/sites/realspin/2013/02/10/sometimes-the-best-medical-care-is-provided-by-those-who-arent-m-d-s/>
- Advisory Board Company (2014). A guide to understanding restrictions on NP practice. Retrieved on 1/14/14 at <http://www.advisory.com/research/medical-group-strategy-council/resources/2013/understanding-state-restrictions-on-np-practice>
- Agency for Healthcare Research and Quality (2010). The Number of Practicing Primary Care Physicians in the United States. Retrieved on 1/1/ 2014 from <http://www.ahrq.gov/research/findings/factsheets/primary/pcwork1/index.html>
- American Association of Nurse Practitioners. (2011a). Clinical Outcomes:The Yardstick of Educational Effectiveness. Retrieved from: <http://www.aanp.org/images/documents/publications/clinicaloutcomesyardstick.pdf>
- American Association of Nurse Practitioners. (2011b). Collaboration/Supervisory Language in State Practice Acts & Regulations for Nurse Practitioners. In AANP (Ed.), (pp. 1): American Academy of Nurse Practitioners.
- American Association of Nurse Practitioners. (2013). New poll shows strong public support for greater access to nurse practitioner care. Retrieved on 1/14/2014 from: <http://www.aanp.org/press-room/press-releases/136-press-room/2013/1389-new-poll-shows-strong-support-for-greater-access-to-nurse-practitioner-care>
- American Association of Nurse Practitioners. (2013). Nurse Practitioners in Primary Care retrieved on January 11, 2014 at <http://www.aanp.org/images/documents/publications/primarycare.pdf>
- American Association of Nurse Practitioners. (2010). Scope of Practice for Nurse Practitioners. Retrieved from: <http://www.aanp.org/images/documents/publications/scopeofpractice.pdf>
- American College of Nurse Midwives. (2014). Retrieved on 1/14/2014 from <http://midwife.org/About-ACNM>
- American Hospital Association: Primary Care Workforce Roundtable.(2013). Workforce roles in a redesigned primary care model. Retrieved on 1/13/2014 from <http://www.aha.org/content/13/13-0110-wf-primary-care.pdf>
- American Nurses Association. (2011). ANA, CMA, and OA Activities reflected in the IOM Recommendations. Retrieved on 1/11/14 from: <http://www.nursingworld.org/ANA-Activities-IOM-Report>
- Auerbach, D., Chen, P., Friedberg, M., Reid, R., Lau, C., Buerhaus, and Mehrotra, (2013). Nurse-managed health centers and patient-centered medical homes could mitigate expected primary care physician shortage. *Health Affairs*, 32(11). doi 10.1377 retrieved from <http://content.healthaffairs.org/content/32/11/1933.abstract>
- Avorn, J., Everitt, D. E., & Baker, M. W. (1991). The Neglected Medical History and Therapeutic Choices for Abdominal Pain. *Archives of Internal Medicine*, 151(4), 694-698.
- Baker Institute Policy Report. (2012). Health care reform and the health care work force.(51). Retrieved on 1/13/2014 at <http://bakerinstitute.org/media/files/news/71bf560a/HPF-pub-PolicyReport51-Web.pdf>
- 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.
- Bauer, J. C. (2010). Nurse practitioners as an underutilized resource for health reform: Evidence-based demonstrations of cost-effectiveness. *Journal of the American Academy of Nurse Practitioners*, 22, 228-231.
- Bipartisan Policy Center (2013). A Bipartisan RX for Patient Centered Care and System Wide Cost Containment. Retrieved on 1/11/2014 from: <http://bipartisanpolicy.org/sites/default/files/BPC%20Cost%20Containment%20Report.pdf>
- Blouin, A. (2012). Medicaid expansion would save Missouri money. Retrieved on January 11, 2014 from: [http://www.mobudget.org/files/Medicaid\\_Expansion\\_Save\\_MO\\_Money.pdf](http://www.mobudget.org/files/Medicaid_Expansion_Save_MO_Money.pdf)
- Bodenheimer, T. & Smith, M. (2013). Primary care proposed solutions to the physician shortage without training more physicians. *Health Affairs*, 32 (11), 1881-86.
- Brooten, D., Youngblut, J. M., Kutcher, J., & Bobo, C. (2004). Quality and the nursing workforce: APNs, patient outcomes and health care costs. *Nursing Outlook*, 52(1), 45-52.
- Brooten, D. Youngblut, J.M., Royal, S., Cohn, S., Lobar, S., Hernandez, L. (2008). Outcomes of an asthma program: Healthy children healthy homes. *Pediatric Nursing* 34 (6), 448-455.
- Burl, J., Bonner, A., & Rao, M. (1994). Demonstration of the cost-effectiveness of a nurse practitioner/physician team in primary care teams. *HMO Practice*, 8(4), 156-157.
- California HealthCare Foundation. (2007). Retrieved on 1/10/2014 from: <http://www.chcf.org/~media/MEDIA%20LIBRARY%20Files/PDF/S/PDF%20ScopeOfPracticeLawsNursePractitionersIB.pdf>



## THE STATUS OF APRNs IN MISSOURI: A WHITE PAPER

- Center to Champion Nursing in America. (2014). Center to Champion Nursing in America Retrieved 1/11/2014 from <http://campaignforaction.org>
- Centers for Medicare and Medicaid Services. (2011). Medicare Learning Network:Health provider shortage area, surgical incentive payment, and primary care incentive programs. Retrieved at: <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/HPSAfcstst.pdf>
- Chan, T. (2014). Patients want doctors not Aps says the AAFP. *The Advisory Board Company*. Retrieved on 1/1/2014 from [http://www.advisory.com/research/medical-group-strategy-council/practice-notes/2014/january/take-the-aafp-survey-with-a-grain-of-salt?elq=a88a6c08ab774bfa8b7f74b3534bec00&elqCampaignId=5800#.UtVI\\_GGJuel.email](http://www.advisory.com/research/medical-group-strategy-council/practice-notes/2014/january/take-the-aafp-survey-with-a-grain-of-salt?elq=a88a6c08ab774bfa8b7f74b3534bec00&elqCampaignId=5800#.UtVI_GGJuel.email)
- Chen, C., McNeese-Smith, D., Cowan, M., Upenieks, V., & Afifi, A. (2009). Evaluation of a nurse practitioner-led care management model in reducing inpatient drug utilization and cost. *Nursing Economic\$, 27*(3), 160-168.
- Chitty K. & Black B.P. (2007) Professional Nursing Concepts and Challenges (5<sup>th</sup> edition) St. Louis Saunders Elsevier.
- Chenoweth, D., Martin, N., Pankowski, J., & Raymond, L. W. (2005). A benefit-cost analysis of a worksite nurse practitioner program: first impressions. *Journal of Occupational & Environmental Medicine, 47*(11), 1110-1116.
- Chenoweth, D., Martin, N., Pankowski, J., & Raymond, L. W. (2008). Nurse practitioner services: three-year impact on health care costs. *Journal of Occupational & Environmental Medicine, 50*(11), 1293-1298.
- Coalition for Patient Rights (2013). Rural America hit hardest by primary care shortage, needs access to full range of health professionals. Retrieved on 1/12/2014 from: <http://www.patientsrightscoalition.org/Media-Resources/News-Releases/ruralshort073013.aspx>
- Coddington, J. A., & Sands, L. P. (2008). Cost of health care and quality outcomes of patients at nurse-managed clinics. *Nursing Economic\$, 26*(2), 75-83.
- Commonwealth Fund (2013). Missouri: Commonwealth Fund Scorecard on State Health System Performance for Low-Income Populations, 2013. Retrieved on 1/11/ 2014 from: <http://www.commonwealthfund.org/~media/Files/HSDC/Low%20Income%20Population%20Scorecard/MO.pdf>
- Conover, C. (2004). Health Care Regulation; A \$169 Billion Hidden Tax. In C. Institute (Ed.), *Policy Analysis* (Vol. 527, pp. 1-29). Washington DC: CATO Institute.
- 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), 721-730.
- Cowan, M. J., Shapiro, M., Hays, R. D., Afifi, A., Vazirani, S., Ward, C. R., et al. (2006). The effect of a multidisciplinary hospitalist/physician and advanced practice nurse collaboration on hospital costs. *Journal of Nursing Administration, 36*(2), 79-85.
- Cronenwatt, L., & Dzau, V. (2010). Who will provide primary care and how will they be trained. Proceedings from Josiah Macy Jr. Foundation Conference.
- Delamatter, G. (1999). Advanced practice nursing and the role of the pediatric practitioner. *Critical Care Nursing Quarterly 21*(4): 16-21.
- Domrose, C. (2014). Answering the call: Healthcare reform may make life busier for some NPs Retrieved on 1/14/2014 at <http://news.nurse.com/article/20140113/NATIONAL05/140110003#.UtUxPf2lwK>
- Doyle, E., Meurer, J. (1983). Practicing medicine without a license. *The Nurse Practitioner*.
- Doyle, E., Pennington, D., Kliethermes, J. (2010). APRN handbook. *Missouri Nurses Association Publication*.
- Dulisse, B. & Cromwell, J. (2010). No harm found when nurse anesthetists work without supervision by physicians. *Health Affairs, 29* (8).
- Eibner, C, Hussay, P., et.al., (2009). Controlling health care spending in Massachussets: An analysis of options. *Rand Corporation*. Retrieved on 1/14/2014 at [www.rand.org/pubs/technical\\_reports/TR733.html](http://www.rand.org/pubs/technical_reports/TR733.html).
- Emanuel, E., Tanden, N., Altman, S., Armstrong, S., Berwick, D., de Brantes, F., et al. (2012). A Systemic approach to containing health care spending. *New England Journal of Medicine, 367*(10), 949-954. doi: doi:10.1056/NEJMsb1205901
- Ettner, S. L., Kotlerman, J., Afifi, 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*(1), 9-17.
- Fairman J., Rowe, J., Hassmiller, S. & Shalala, D. (2011). Broadening the scope of nursing practice. *New England Journal of Medicine, 364*, 193-96.
- Families USA: The voice for health care consumers. (2014). Retrieved on 1/11/2014 from: <http://www.familiesusa.org>
- Flanagan, L. (1998). Nurse practitioners: growing competition for family physicians? *Family Practice Management, 5*(9), 34.
- Flook, D. M. (2003). The professional nurse and regulations. *Journal of Perianesthesia Nursing, 18*(June), 160-167.

## THE STATUS OF APRNs IN MISSOURI: A WHITE PAPER

- Gorski, D. (2014). Correcting the scope of advance practice nurses will not endanger patients. *Science Based Medicine*. Retrieved on 1/12/2014 from: <http://www.sciencebasedmedicine.org/expanding-the-scope-of-practice-of-advanced-practice-nurses-does-not-endanger-patients/>
- Hanrahan, N.P., Delaney, K., & Merwin, E. (2010). Health care reform and the Federal transformation Initiatives: Capitalizing on the potential of advanced practice psychiatric nurses. *Policy, Politics, & Nursing Practice*, 11(3), 235-244.
- Hassmiller, S. (2013). The RWJF's investment in nursing to strengthen the health of individuals and families. *Health Affairs*, 32 (11), 2051-2055. doi:10.1377.
- Health Human Services. (2014). *Find Shortage Areas: HPSA by State & County*. Silver Springs, MD: Retrieved on 1/10/2014 from <http://hpsafind.hrsa.gov/HPSASearch.aspx>.
- Hogan, P., Seifert, R., Moore, C., & Simonson, B. (2010). Cost effectiveness analysis of anesthesia providers. *Nursing Economics*, 28(3), 159-69.
- Hooker, R. S., Nicholson, J. G., & Li, T. (2009). Does the employment of physician assistants and nurse practitioners increase liability? *Journal of medical licensure and discipline* 95, 95, 6-16.
- Horrocks, S., Anderson, E., & Salisbury, C. (2002). Systematic review of whether nurse practitioners working in primary care can give equivalent care to doctors. *British Medical Journal*, 324(6), 819-823.
- House Resolution 3962. (2010). Bill Summary HR 3962 *Thomas: The Library of Congress*, retrieved on 1/12/2014 from <http://thomas.loc.gov/cgi-bin/bdquery/D?d111:10:/temp/~bdKBiS:/home/LegislativeData.php>
- Hughes, R. (ed) (2008). Patient safety and quality: an evidence-based handbook for nurses. *Agency for Healthcare Research and Quality*, Retrieved on 1/14/14 from <http://www.ncbi.nlm.nih.gov/books/NBK2641/>
- Hunter, J. K., Ventura, M. R., & Kearns, P. A. (1999). Cost analysis of a nursing center for the homeless. *Nursing Economics*, 17(1), 20-28.
- Institute for Alternative Futures (2012). Primary Care 2025: A scenario explanation. Retrieved on 1/13/2014 from: <http://www.altfutures.org/pubs/pc2025/IAF-PrimaryCare2025Scenarios.pdf>
- Institute of Medicine. (2010). The future of nursing: Leading change, advancing health a report brief. Washington, DC: Institute of Medicine.
- Institute of Medicine. (2011). The Institute of Medicine/Robert Wood Johnson Foundation report: The Future of Nursing: Leading Change, Advancing Health. *New Mexico Nurse*, 56(3), 5-6.
- Kuo, Y., Loresto, F., Rounds, L. & Goodwin, J. (2013). States with the least restrictive regulations experience the largest increase in patients seen by nurse practitioners. *Health Affairs*, 32(7). doi: 10.1377
- Larson, E. H., Palazzo, L., Berkowitz, B., Pirani, M. J., & Hart, L. G. (2003). The contribution of nurse practitioners and physician assistants to generalist care in Washington State. *Health Services Research*, 38(4), 1033-1050.
- Laurant MGH, Hermens RPMG, Braspenning JCC, Akkermans RP, Sibbald B, & Grol RPTM. (2008). An overview of patients' preference for general practitioner or nurse practitioner and patients' satisfaction with care provided by general practitioners and by nurse practitioners. *Journal of Clinical Nursing*. 17, 2690-2698
- Lenz, E. R., Munding, 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 & Review*, 61(3), 332-351.
- Leroy, L. (1981). The costs and effectiveness of Nurse Practitioners. *Office of Technology Assessment*.
- Library of Congress: Thomas. (2010). HR 3962. Retrieved on 1/11/2013 from <http://thomas.loc.gov/cgi-bin/query/z?c111:H.R.3962>:
- Lin, S. X., Hooker, R. S., Lens, E. R., & Hopkins, S. C. (2002). Nurse Practitioners and Physician Assistants in Hospital Outpatient Departments. *Nursing Economics*, 20(4), 174-179.
- Lugo, N., O'Grady, E., Hodnicki, D. Y Hanson, C. (2007). Ranking State NP Regulation: Practice Environment and Consumer Healthcare Choice. *The American Journal for Nurse Practitioners*. 11(4). pp 8-24
- Massey, B. (2013). Governor seeks money to recruit more nurses to New Mexico. Retrieved on 1/11/2014 from <file:///Users/kathleenhaycraft/Desktop/Barrier%20Free/Governor%20seeks%20money%20to%20recruit%20more%20nurses%20to%20NM%20-%20Yahoo%20Finance.webarchive>
- McCarthy, D., Schoen, S., Cantor, & Belloff, J. (October 2009). Aiming higher results from a state scorecard on health system performance. *The Commonwealth Fund*.
- McGrath, S. (1990). The cost-effectiveness of nurse practitioners. *Nurse Practitioner*, 15(7), 40-42.
- Meyer, H. (2011). A new care paradigm slashes hospital use and nursing home stays for the elderly and the physically and mentally disabled. *Health Affairs*, 30(3), 412-415.
- Miller, K. (2011). Malpractice: Nurse practitioners and claims reported to the national practitioner data bank. *The Journal for Nurse Practitioners*. 7(9). 761

## THE STATUS OF APRNs IN MISSOURI: A WHITE PAPER

- Miller Center: University of Virginia (2014). Cracking the code on health care costs: A report by the state health care cost containment committee. Retrieved on 1/12/2014 from:  
<http://web1.millercenter.org/commissions/healthcare/HealthcareCommission-Report.pdf>
- Minnesota Office of Rural Health Primary Care (2005). Rural health advisory committee's report on mental health and primary care. Retrieved on 1/14/2014 from <http://www.health.state.mn.us/divs/orhpc/pbs/mentalhealth.pdf>
- Missouri Association of Nurse Anesthetists. (2011). Ever had gas? Retrieved January 1, 2012, from <http://www.everhadgas.com/>
- Missouri Department of Health and Human Services. (2012). The status of Missourians' health., 2<sup>nd</sup> ed Retrieved on 1/11/2014 from <http://health.mo.gov/data/pdf/StateofMissouriansHealth2010.pdf>
- Missouri Division of Professional Regulation (2014). Nursing and collaborative practice: A regulatory perspective. Retrieved on 1/11/2014 from: <http://pr.mo.gov/nursing-advanced-practice-nursing-collaborative.asp>
- Missouri Foundation for Health. (2012). Bending the Health Care Cost Curve for Missouri: Options for Saving Money and Improving Care (pp. 1-60). St Louis Missouri.
- Missouri General Assembly. HB 1563 (2012a), SB464, 4313S.03T C.F.R. (2012b) .Retrieved from: <http://www.moga.mo.gov>
- Missouri Hospital Association. (2011). Primary care physicians: The status in rural Missouri .*MHA Special Report: Missouri Hospital Association*.
- Missouri State Board of Nursing. (2013). APRN recognition summary. Retrieved on 1/11/2014 from <http://pr.mo.gov/boards/nursing/apnrecogsum.pdf>
- Montemuro, M. A. (1987). The evolution of the clinical nurse specialist: response to the challenge of professional nursing practice. *Clinical Nurse Specialist: The Journal for Advanced Nursing Practice*, 1(3), 106-110.
- 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. *Journal of the American Medical Association*, 283(1), 59-68.
- National Association of Clinical Nurse Specialists (2013). The impact of the clinical nurse specialist role on the costs and quality of health care. Retrieved on 1/11/2014 from: <http://www.nacns.org/docs/CNSOutcomes131204.pdf>
- National Center for Health Statistics. (2011). *Physician assistant and advance practice nurse care in hospital outpatient departments: United States 2008-2009*. Atlanta, GA: CDC Retrieved from <http://www.cdc.gov/nchs/data/databriefs/db77.htm>.
- National Council of State Boards of Nursing. (2008,). Consensus Model for APRN Regulation: Licensure, Accreditation, Certification & Education, from [https://www.ncsbn.org/APRNJoint\\_Dia\\_report\\_May\\_08.pdf](https://www.ncsbn.org/APRNJoint_Dia_report_May_08.pdf)
- National Conference of State Legislators (2013). Scope of practice overview. Retrieved on 1/14/2014 from: <http://www.ncsl.org/research/health/scope-of-practice-overview.aspx>
- National Governors Association (2012). *The role of nurse practitioners in meeting increasing demand for primary care.*, retrieved on 1/12/2014 from <http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-health-publications/col2-content/main-content-list/the-role-of-nurse-practitioners.html>
- Ndosi, M., Vinal, K., Hale, C., Bird, H., & Hill, J. (2011). The effectiveness of nurse-led care in people with rheumatoid arthritis: A systematic review. *International journal of nursing studies*, 48(5), 642-654.
- Needleman, J., Minnick, A. (2008). Anesthesia provider model, hospital resources, and maternal outcomes. *Health Services Research*, 44, 464-482
- Newhouse, Stanik-Hutt, J., White, K. M., Johantgen, M., Bass, E. B., Zangaro, G., et al. (2011). Advanced Practice Nurse Outcomes 1990-2008: A Systematic Review. *Nursing Economic\$,* 29(5), 230-251.
- Newhouse, R., Stanik-Hutt, J., White, K. M., Johantgen, M., Bass, E. B., Zangaro, G., et al. (2011). Advance Practice Nurse Outcomes 1990-2008: A Systematic Review. *Nursing Economic\$, CNE Series*, 21.
- Nurse Anesthetist Schools. (2011). History of the CRNA Retrieved 11/13/2011, 2011, from <http://www.nurse-anesthetist-schools.com/history-of-the-crna>
- Office of Social and Economic Data Analysis. (2009). *Missouri Components of Population Change*. Columbia, MO: Office of Social and Economic Data Analysis Retrieved from [http://www.oseda.missouri.edu/regional\\_profiles/components\\_change\\_1990\\_2000.shtml](http://www.oseda.missouri.edu/regional_profiles/components_change_1990_2000.shtml).
- Office of Technology Assessment. (1981). *The Cost and Effectiveness of Nurse Practitioners*. Washington, DC: US Government Printing Office Retrieved from <http://www.fas.org/ota/reports/813/.pdf>.
- 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.
- Organization for Economic Cooperation and Development. (2011). Organization for Economic Cooperation and Development: Selected Data of Health Expenses Retrieved January 11, 2014 from <http://www.oecd.org/unitedstates/49084355.pdf>
- Paez, K. A., & Allen, J. K. (2006). Cost-effectiveness of nurse practitioner management of hypercholesterolemia following coronary revascularization. *Journal of the American Academy of Nurse Practitioners*, 18(9), 436-444.

## THE STATUS OF APRNs IN MISSOURI: A WHITE PAPER

- Perry, J. (2012) State-Granted Practice Authority: Do Nurse Practitioners Vote with Their Feet?. *Nursing Research and Practice* Volume. Retrieved on 10/30/2013 from <http://dx.doi.org/10.1155/2012/482178>
- Pew Charitable Trust (2013). Survey: Americans support more medical duties for nurse practitioners. Retrieved on 1/12/2014 from <file:///Users/kathleenhaycraft/Desktop/Barrier%20Free/Nurse%20practitioners%20enjoy%20a%20majority%20of%20public%20support%20to%20let%20them>
- Phillips, S. J. (2011). 23rd annual legislative update. *Nurse Practitioner*, 36(1), 30-52.
- Reiter, F. (1966). The Nurse Clinician. *The American Journal of Nursing*, 66(2), 274-80.
- Roblin, D. W., Becker, E. 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), 579-590.
- Roblin, D. W., Howard, D. H., Becker, E. R., Adams, E. K., & Roberts, M. H. (2004). Use of midlevel practitioners to achieve labor cost savings in the primary care practice of an MCO. *Health Services Research*, 39(3), 607-625.
- Rose B. (2003) Role preservation of the clinical nurse specialist and the nurse practitioner. *The Internet Journal of Advanced Nursing Practice*, 5(2).
- Sackett, 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.
- Safriet, B. J. (1992). Health Care Dollars and Regulatory Sense: The Role of Advance Practice Nurses. *Yale Journal on Regulation*, 9(2).
- Seale, C, Anderson, E. & Kinnersley (2006). Treatment advise in primary care: a comparative study of nurse practitioners and general practitioners. *Journal of Advance Nursing*, 54(5), 534-41.
- Sears, J. M., Wickizer, T. M., Franklin, G. M., Cheadle, A. D., & Berkowitz, B. (2007). Nurse practitioners as attending providers for injured workers: Evaluating the effect of role expansion on disability and costs. *Medical Care*, 45(12), 1154-1161.
- Sheer, B., & Wong, F. K. Y. (2008). The Development of Advanced Nursing Practice Globally. [Article]. *Journal of Nursing Scholarship*, 40(3), 204-211. doi: 10.1111/j.1547-5069.2008.00242.x
- Smith/Jacobs, J. (2012). A Comparative Analysis of State Practice Laws for Nurse Practitioners. University of San Diego California Department of Public Health. Retrieved 09/30/2013 at <http://sdsu-dspace.calstate.edu/handle/10211.10/2240>
- Spitzer, W., Sackett, D., Sibley, J., et al. (1974). The Burlington randomized trial of the nurse practitioner. *New England Journal of Medicine*.290:251-56.
- Sox, H. C. (2000). Independent primary care practice by nurse practitioners. *JAMA: Journal of the American Medical Association*, 283(1), 106-108.
- Title 21(2013). CFR-Section 1300.01 b28. Retrieved on 1/12/2014 from: [http://www.deadiversion.usdoj.gov/drugreg/practioners/mlp\\_by\\_state.pdf](http://www.deadiversion.usdoj.gov/drugreg/practioners/mlp_by_state.pdf)
- Traczynski, J. & Udalova V (2013). Nurse Practitioner Indepence and Health Care Utilization and Health Care Outcomes. Cooperative study of University of Hawaii and University of Wisconsin. Retrieved on 9/30/2013 from [http://www.lafollette.wisc.edu/research/health\\_economics/Traczynski.pd](http://www.lafollette.wisc.edu/research/health_economics/Traczynski.pd)
- Tu, H. & Boukus, E. (2013). *Center for Studying Health System Change*. HSC Research Brief 29. Retrieved on 1/12/2013 from: <http://www.hschange.org/CONTENT/1392/>
- United States Census Bureau (2010). State and county quick facts. Retrieved on 1/13/2014 from: <http://quickfacts.census.gov/qfd/states/29000.html>
- Varney, H., Kriebs, J., & Geger, C. (2004). *Varney's Midwifery* (4th ed.). Sudbury, MA: Jones & Bartlett.
- Vorvick, L. (2011). Certified Nurse Midwife: History of the Profession Retrieved 11/13, 1911, from <http://www.nlm.nih.gov/medlineplus/ency/article/002000.htm>
- Wakefield, B. (2010). Primary Care at Crossroads. [Commentary]. *Family Practice News*, 40, No. 11(June 13, 2010), 7.
- Walker, J., Gerard P., Bayley, E., Coeling H., Clark, A., Dayhoff, N. and Goudrea K. (2003) A description of clinical nurse specialist programs in the United States. *Medscape*. Retrieved on 1/11/2014 from [http://www.medscape.com/viewarticle/449196\\_6](http://www.medscape.com/viewarticle/449196_6)
- Wilken, M. K. (1993). *State regulatory boards, regulations, and midlevel practitioners in rural America*. PH.D., UNIVERSITY OF NEBRASKA - LINCOLN. retrieved on 1/12/2014 from <http://www.thefreelibrary.com/Reducing+barriers+to+APRN+practice%3A+a+template+for+change+in+Missouri...-a0280102267>
- Wilson, I. B., Landon, B. E., Hirschhorn, L. R., McInnes, K., Ding, L., Marsden, P. V., et al. (2005). Improving patient care. Quality of HIV care provided by nurse practitioners, physician assistants, and physicians. *Annals of Internal Medicine*, 143(10), 729.
- Wells, M., Donnan, P., Sharp, L., Ackland, C. Fletcher, J., & Dewar, J. (2008). A study to evaluate nurse-led on-treatment review for patients undergoing radiotherapy for head and neck cancer. *Journal of Clinical Nursing*, 17(11). pp 1428-39