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An Examination of Primary Care Nurse Practitioner Practice: Implications for the Future

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The Institute of medicine (2001) posits that quality healthcare should be safe, effective, patient-centered, timely, efficient, and equitable. Although ideal in theory, the realization of quality services within the dynamic healthcare arena proves challenging. Primary care providers in the form of the Nurse Practitioner (NP) have emerged as instrumental to closing the quality chasm through augmenting primary care physician (PCP) services. However, state laws, payer policies, and skepticism from other healthcare providers continue to pose barriers that impede full realization of NP competencies (Yee, Boukus, Cross, & Samuel, 2013; Schiff, 2012; American Association of Colleges of Nursing [AACN], 2015a). These barriers impact NP job satisfaction and perpetuate the already deleterious provider shortage. As a result, the quality and access of public healthcare becomes compromised.

The question remains whether NPs should be granted independent practice within the interprofessional healthcare model encouraged by the Patient Protection and Affordable Care Act (AACN, 2015a). This paper aims to address this question by providing the reader with a brief overview of the NP role and education, the current and changing healthcare landscape, a comparison of NP and PCP care outcomes, the present barriers facing NPs, and implications for future advocacy, education, research, and policy change.

The Nurse Practitioner Role and Education

General Role Overview

A nurse practitioner falls under the umbrella term Advanced Practice Registered Nurse (APRN). This term also applies to Certified Nurse Midwives, Clinical Nurse Specialists, and Certified Registered Nurse Anesthetists. As a whole, the APRN is a registered nurse with

expertise in nursing science and its applications to research, education, and patient care (AACN, 2015a). The APRN is not a "physician extender" or "substitute"; rather, APRNs augment and incorporate various services across the entirety of healthcare (IOM, 2010a). The suggested roles of APRNs briefly include, but are not limited to, "alleviating provider shortages, supplementing medical resident care, improving access and convenience of care, improving medical home expansion, and improving chronic care management" (Newhouse et al., 2012, p.84).

Representing the largest group of APRNs and non-physician primary care providers, the NP possesses the competencies to help meet current healthcare demands (Health Resources and Services Administration [HRSA], 2008; National Governor's Association [NGA], 2012; Bahadori & Fitzpatrick, 2009). Throughout a variety of settings and care levels these practitioners are able to perform many standard PCP tasks in addition to nursing services (Hansen-Turton, Ware, Bond, Doria, & Cunningham, 2013; Chattopadhyay, Zangaro, & White, 2015). These services may include diagnosing and managing disease, immunizations, ordering diagnostic tests, referring, prescribing, and performing minor procedures (HRSA, 2008; AACN, 2015b; NGA, 2012; Hansen-Turton et al., 2013; Stanik-Hutt et al., 2013). In fact, research indicates that NPs possess the capabilities to independently manage 75-80 percent of primary care needs (Liu & D'Aunno, 2012; HRSA, 2012).

In addition to technical competency, NPs demonstrate valuable proficiency in relationship building. Matteliano & Street (2012) found that compared to the directive, somewhat distanced nature of physicians, patient interviews reveal that the NP personality traits of "warmth", "empathy", and "willingness to relate on a personal level" (p.430) are perceived as more effective in forming patient-provider partnerships. Further examination into their educational preparation substantiates the competencies of these specialty providers.

Educational Preparation

The first formal NP program was created in 1965 at the University of Colorado (HRSA, 2008). Currently, an individual may obtain NP licensure through completion of either a master's or doctoral degree. Both types of graduate programs develop competent clinicians who have assessed their career goals and matched them with the needs of a certain aggregate (AACN, 2015b).

A master's degree in nursing expands upon the previous knowledge and expertise of the associate or baccalaureate degree nurse. With more than 330 programs accredited by the Commission on Collegiate Nursing Education (CCNE) or National League for Nursing Accrediting Commission (NLNAC), an individual may choose from a variety of specialties or joint degree programs (AACN, 2015b). The eighteen to twenty-four month program balances extensive clinical rotations and class time. The program's core curriculum consists of nursing theory, nursing science, and health care management. Additional courses may or may not include statistics, research application, health economics, cost-benefit analysis, health policy, health ethics, illness management, and nutrition (AACN, 2015b). As of 2012, master's prepared NPs represent 86% of the NP workforce (HRSA, 2012).

Following the establishment of a master's program, the Doctor of Nursing Practice program was established in 1999 as a terminal degree in nursing practice (AACN, 2014b; HRSA, 2008). As of 2014, the CCNE has accredited 125 DNP programs in 48 states, including the District of Columbia by (AACN, 2014b). The curriculum for the doctoral program builds on the master's program by extending the length and depth of study in pharmacology, pathophysiology, and illness management. DNP education also covers topics that are normally absent from medical school curriculum, such as nutrition, patient education, health policy, health promotion,

systems leadership, and quality improvement (AACN, 2014b; AACN, 2015a). As of 2012, only 5% of NPs held a doctoral degree (HRSA, 2012).

The holistic, evidence-based curriculum of the master's and doctoral programs prepare students to view healthcare through a macroscopic lens. The term 'holistic' implies that social and medical needs are completely intertwined, and therefore cannot be separated (Matteliano & Street, 2012). Students are therefore prepared to address the social, economic, and environmental determinants of health (Lathrup & Hodnicki, 2014; Pericak, 2011; Watts et al., 2009). This education and training allows the NP to function as a primary care clinician and public health nurse. The NP may directly treat patients as well as design, implement, and evaluate community programs covering preventative behaviors, self-management strategies, and the impact of current healthcare legislation (Harrington, 2011; Lathrup & Hodnicki, 2014).

Interprofessional education constitutes another core component of the NP curriculum. Due to the increasing overlap in healthcare knowledge and shift in the model of healthcare delivery, interdisciplinary education becomes necessary (AACN, 2015a). The NPs' unique "brokering skills" facilitates partnerships with patients and other healthcare professionals (Matteliano & Street, 2012, p. 431). This, in turn, prepares NPs to serve as leaders and contributors in patient-centered medical homes or general primary care settings (AACN, 2006).

Nurse Practitioner Service: Where and Whom

During the role's formative years, the NP served women and children in clinician-scarce, geographically remote, and low-income settings (HRSA, 2008). This focus continues into the present day, as NPs still provide the majority of their care to underserved, uninsured, and vulnerable communities. In fact, the U.S. Department of Health and Human Services (2014) reports that around 70% of NPs work in urban settings, 18.0% work in rural settings, and around

9.0% work in remote rural settings. This geographic distribution of NPs represents the high concentrations of their typical aggregate. However, current certification standards allow the NP to address a broader scope of patient populations in a variety of settings. Their proficiency in health education and prevention allows them to serve in schools, workplaces, public or private practices, retail clinics, and nurse-managed health centers (Lathrup & Hodnicki, 2014; Newhouse et al., 2012; ANA, 2014; Naylor & Kurtzman, 2010; Ahmed & Fincham, 2010; Pron, 2012; Hansen-Turton, Ritter, & Torgan, 2008).

Nurse-managed health centers (NMHC) are clinics unique to the nursing and NP professions. Instead of a traditional physician-led clinic, nurses autonomously assume all of the administrative and primary care responsibilities (Hansen-Turton et al., 2008; Pron, 2012). NMHCs are typically independent, nongovernmental nonprofits or academic sites for nursing programs. These centers deliver quality, satisfactory, and cost effective care that focuses on health promotion and disease prevention (Lathrop & Hodnicki, 2014; Pron, 2012). NMHCs primarily assist low-income, uninsured, and underinsured populations: around 30% of this patient group is Medicaid or Medicare beneficiaries, 30% have commercial insurance, and 40% are uninsured. Due to the fact that most of the care cost for the uninsured remains uncompensated, numerous NMHCs rely on donations or grants for practice viability (Hansen-Turton et al., 2008).

Another setting unique to nursing and NPs is the retail based health clinic. Characterized by their accessibility, affordability, quality, and short waiting periods, these centers offer screenings and treatment for common, low-acuity illness and disease in addition to vaccinations and physician referrals (Ahmed & Fincham, 2010; Rohrer, Angstman, & Garrison, 2012). Both administrative and direct care staff consists of either nurse practitioners or physician assistants

(Rohrer et al., 2012; Ahmed & Fincham, 2010). Typically stationed in pharmacies, department stores, and airports, these health centers offer a source of relief to the current strain on primary care visits (Ahmed & Fincham, 2010).

Role Intent

Closely connected to the "where" and "whom" of practice is the "why", or purpose of the NP role. Initially, the NP profession was established as a means to augment physician shortages, thereby expanding access to healthcare for the underserved (Stanik-Hutt et al., 2013). Although this purpose continues today, there are several key factors that frame the way in which NPs help address the national concerns about patient safety and the quality of care (AACN, 2014a).

One factor contributing to the demand for primary care is the increase in the aging population (NGA, 2012). According to calculations by Ebell (2008), roughly 78 million people turned 65 years old in 2011. The exponential influx into this age bracket will account for an 81 percent increase in the demand for primary care by the year 2020 (HRSA, 2013). Saddled with increased life expectancy, though, is an increase in the number of people living with chronic diseases, such as hypertension and diabetes (Chattopadhyay et al., 2015).

Another complicating factor is the recent national healthcare insurance expansion. In 2014, it is expected that 30 million people will gain health coverage as a result of the Patient Protection and Affordable Care Act (Yee et al., 2013; NGA, 2012; Congressional Budget Office, 2012). This translates into a projected increase of 15-25 million primary care visits per year by 2019 (Hofer, Abraham, & Moscovice, 2011). For the previously uninsured, past gaps in healthcare may translate into poorly controlled health conditions and maladaptive health practices. The influx of individuals with fragmented or unknown medical histories complicates care delivery, especially resource and provider distribution.

In fact, one of the most alarming factors affecting care delivery is the shortage of primary healthcare providers. According to the Association of American Medical Colleges, the projected shortfall of PCPs for 2015 is 29,800, increasing to 65,800 by 2025 (Sherrod, 2010). Even though other sources report only a projected shortage of 20,400 physicians by 2020, the implications of this shortage remain the same (HRSA, 2013). In terms of supply, the main reason for this shortfall is the drop in the number of medical students choosing primary care. Statistical trends indicate only an 8 percent increase in the number of primary care physicians from 2010 to 2020 (HRSA, 2013). This, in part, is due to the reimbursement structure and workload of the PCP (Schram, 2010). PCPs today will continue adding patients to their workload and cut consultation times just to maintain an income while covering practice costs (Tolman, 2011; Liu & D'Aunno, 2012). In this instance, the goal of timely, efficient, and equitable care may fail to meet public demand despite health insurance expansion (Liu & D'Aunno, 2012).

Exacerbating the overall shortage of providers is the preexisting issue of unequal provider distribution throughout the United States (Robert Wood Johnson Foundation, 2011). In 2014, there were 6,100 designated Health Professional Shortage Areas, defined as a geographic region with a 1:3,500 physician-patient ratio. Demographic data reveals a paucity of PCPs in areas with a substantial low-income and minority population, despite the fact that this population typically needs more comprehensive care (Robert Wood Johnson Foundation, 2011). As evidenced by the aforementioned trends, the meager number of PCPs will not be able to offset both existing provider shortages and the recent surge in the primary care patient population.

One major and final factor in favor of offsetting the provider-patient shortage involves a surge in the number of NPs entering, graduating, and becoming eligible for primary care practice (Robert Wood Johnson Foundation, 2011). Between 2012 and 2013 there was nearly 3,000 more

students enrolled in a DNP program, and close to 600 more students graduating from a DNP program (AACN, 2014b). Mirroring this trend in matriculation is the predicted growth of NPs available for practice in the upcoming years. According to HRSA (2013), the national projected growth of primary care NPs will increase 30 percent – from 55,400 in 2010 to 72,100 in 2020.

In addition to the sheer supply of primary care NPs, cost-effective attributes include faster education and training and lower salaries compared to PCPs (Yee et al., 2013; Tolman, 2011; Pericak, 2011). Research, of which will be expounded upon later, also indicates that utilization of graduate degree nurses results in better outcome measures, such as lower mortality rates medication errors (AACN, 2014a). All of these factors may increase access to primary care while also containing national healthcare expenditures (Pohl, Hanson, Newland, & Cronenwatt, 2010). In general, though, one of the most valuable features of the primary care NP is the ability to bridge the gaps between the cultures of medicine and nursing and, most importantly, the cultures of healthcare and the community (Pohl et al., 2010; Matteliano & Street, 2012).

The Patient Protection and Affordable Care Act

Healthcare Before the Patient Protection and Affordable Care Act

Preceding the passage of the Patient Protection and Affordable Care Act (ACA) in 2010, over 50 million Americans lacked health insurance (Kaiser Family Foundation, 2012a). A survey conducted in 2013 by the Kaiser Family Foundation (2014) outlined the reasons for the existence of a large uninsured aggregate: the data revealed that 61% of adults were without insurance as a result of unemployment or the inability to afford insurance. In addition, close to 70% of this population reported minimal to low confidence in their abilities to pay for health care services, and nearly 40% of the uninsured already have current outstanding medical bills (Kaiser Family Foundation, 2014). Lack of monetary means or severe financial strain incurred through extensive

healthcare services leads to gaps in preventative healthcare and management of chronic, complex conditions. Ethnic minorities are at an even greater risk at being uninsured compared to non-Hispanic whites, therefore compounding the existing deleterious effects of poverty.

Even for the insured the structure of United States healthcare is plagued by inefficiency, causing errors, delays, worse health outcomes, and increased cost to the consumer. Compared to other developed countries, the United States grossly overspends on its healthcare, with an estimated annual out-of-pocket cost of $7,538 per person (Kaiser Family Foundation, 2011). Additionally, resource allocation and funding do not match public needs. For instance, payments to managed care organizations only account for 20% of total Medicaid expenditures, despite the fact that over 26 million disabled and elderly, representing almost 66% of all Medicaid beneficiaries, are enrolled in Medicaid managed care organizations (Kaiser Family Foundation, 2012b). This fee-for-service reimbursement structure offers no incentives for care outcomes or care coordination; quantity of services trumps quality of services. Conversely, managed care organization capitation policies drive clinicians to provide bare minimum care to as many people as possible. With no guidelines to improve quality and reduce expenditure, this reactive, episodic, and capitalistic approach to care propagates this inverse relationship between cost and quality outcomes (Schram, 2010).

General Overview of Affordable Care Act Healthcare Changes

One of the most recent and progressive overhauls in health policy was the passing of the Patient Protection and Affordable Care Act (ACA) on March 23, 2010, whose primary aim is to redefine the ways in which we measure and reimburse quality care. Under the ACA, health insurance is required for most American citizens and legal residents. The core tenets of the ACA consist of a three-pronged initiative: expanding primary care access, funding community health

projects, and emphasizing quality care (Lathrup & Hodnicki, 2014). Specifically, the law mandates preventative services, creates state-based insurance exchange marketplaces, expands Medicaid coverage to individuals whose income falls 133% below the federal poverty level, and reimburses providers and organizations for service outcomes based on standards of quality care (Poghosyan, Lucero, Rauch, & Berkowitz, 2012).

In terms of preventative services, the ACA aims to eliminate two current system issues: fragmentation of services and healthcare's focus on cure, rather than prevention. Previously, healthcare was dictated solely by the biomedical explanation for illness and disease. This created an expanding chasm between public health and healthcare, which translated into a surge in spending and preventable disease (Cogan, 2011). In order to rectify this pattern, the ACA eliminates cost-sharing for public and private health insurance enrollees who seek preventative care services (NGA, 2012).

With the American Health Benefit Exchanges, an individual may shop for the best insurance package in terms of affordability and the extent of coverage. These exchanges allow premium and cost-sharing credits for incomes between 133-400% of the poverty level. The insurance marketplace also creates separate exchanges for the coverage of small businesses (Kaiser Family Foundation, 2013). In another main provision of the ACA, Medicaid now covers those who are not Medicare eligible, are under age 65, and whose income falls within 133% of the federal poverty level (Kaiser Family Foundation, 2013). This coverage began in 2014 and is predicted to reach 16 million uninsured individuals by 2019 (Kaiser Family Foundation, 2012b). This influx of newly insured individuals will necessitate an increase in primary care providers (Lathrup & Hodnicki, 2014). This is especially true for the South and Mountain West regions,

which will expect the largest Medicaid enrollment, despite having one of the greatest primary care provider shortages in the United States (Robert Wood Johnson Foundation, 2011).

These mandates will also increase Medicaid reimbursement for primary care physicians to 100% of the payment rates from 2014; however, there is no mention of NPs as PCP (Kaiser Family Foundation, 2013). Currently, a federal mandate for 100% Medicaid reimbursement for APRNs does not exist; instead, the ACA includes non-physician reimbursement provisions under the condition of physician supervision or partnership (Lathrup & Hodnicki, 2014; Poghosyan et al., 2012). This upholds previous 1997 legislation concerning NP reimbursement. Although this law removed the 'incident to' caveat for NPs, it still stipulated that Medicare Part B services provided by an NP would be reimbursed at only 80-85% of the physician fee (American Association of Nurse Practitioners [AANP], 2013). One of the provisions passed in favor of NPs, though, was a one-time $50 million grant to expand NMHCs from 2010 to 2014 in order to expand primary care to underserved populations (Naylor & Kurtzman, 2010).

At its core, much of the ACA priorities coincide with APRN priorities. Although the ACA does not outline beneficial provisions specifically for NP practice, it does create a demand that the NP may help address within an interprofessional framework. Based on their education, training, and practice experience, NPs are prepared to play a more prominent role in care coordination, serving in community health centers, and advocating for policy change (Lathrup & Hodnicki, 2014). Augmentation of primary care within a team model removes some of the strain on PCPs, thereby allowing them to perform tasks specific to their own scope of practice (NGA, 2012). With more opportunities for leadership and direct care contribution, the ACA not only creates a demand, but also highlights the unique value of the NP role (Poghosyan et al., 2012).

Care Outcomes: Nurse Practitioner vs. Medical Doctor

By virtue of their education and sheer supply, the NP represents a competent, intelligent, and capable clinician equipped to address the influx in chronic, complex disease cases. Nevertheless, the American Medical Association (AMA) asserts that the process of measuring quality care represents an "inexact science" because of its subjective and objective components (AMA, 1993, p.17) Although the definition and measures of quality healthcare continually evolve, the AACN counters with the point that either profession, then, may not claim superiority with respect to quality care (Stanik-Hutt et al., 2013; AACN, 2015a). Despite the nature of this "inexact science", continuous evaluation of care outcomes for this provider group furnishes data and trends needed to advocate for policy change with respect to independent practice and direct reimbursement. The viability of this profession therefore rests on "the ability to identify, define, and perpetuate the aspects of primary care delivery perceived as beneficial and resulting in enhanced patient satisfaction" (Agosta, 2009, p. 114). Further substantiation of NP competency lies within the existing literature and current and future endeavors investigating quality care.

Quality Care Measures

One of the most comprehensive and conclusive reviews comparing NP and PCP quality care outcomes involves a systemic review of 107 observational and randomized control studies from 1990-2008 (Newhouse et al., 2011). After fact-checking information from eligible studies against the original sources, the outcomes were aggregated for each APRN group. For the NP, 49 studies outlining 11 patient outcomes were deemed eligible for review. When compared to a PCP, the review indicated equivalent outcome levels for NPs on measures of patient satisfaction, self-reported perceived health, glucose control, blood pressure control, ED or urgent care visits, hospitalization rates, and mortality rates. Additionally, evidence concerning serum lipid

management in primary care settings revealed better control with an NP than a PCP. Overall, the results imply that care provided by the NP within an interdisciplinary care team is similar, and in several measures superior, to care provided by PCP. Newhouse et al. (2011) concludes that the literature further supports the competency of NPs as primary care providers who deliver efficacious, quality healthcare.

Another exhaustive systemic review of 63 published United States NP-related studies from 1990-2009 investigated the effect of NP practice on care quality, safety, and effectiveness (Stanik-Hutt et al., 2013). Mirroring the results found by Newhouse et al. (2011), the results found in this review indicated that "patient outcomes from NPs working autonomously or in collaboration with MDs are similar to outcomes obtained from MDs working alone in ambulatory, home, and inpatient care settings" (Stanik-Hutt et al., 2013, p.496). The strength of evidence was specifically high for certain measures, such as "patient satisfaction with provider care", "self-report of perceived health status", "functional status", "numbers of unexpected ED visits", "hospitalization rates", "mortality rates", "blood glucose", "blood pressure", and "serum lipid management" (Stanik-Hutt et al., 2013, p.496).

Echoing these deductions is a classic review conducted by the Office of Technology Assessment ([OTA], 1986). In this review, 10 studies reported equivalent quality of care between the two providers, while differences surfaced in 14 studies. However, the differences in 12 out of 14 studies reported care quality that exceeded physician services, especially in prevention measures and patient communication (OTA, 1986).

Furthermore, a follow-up study by Lenz, Mundinger, Kane, Hopkins, & Lin (2004) examined the long-term effects of provider care on health status. The researchers used Donabedian's structure-process-outcome model and the Professional Socialization Theory in

combination with the Medical Outcomes Study Short-Form 36 and the Primary Care Assessment Survey to guide the reevaluation. A total of 406 of the original 1,316 patients were included. Inclusion criteria was dependent on whether participants made the initial visit and at least one-follow up visit to the practice from the first study, and also if they did not receive primary care from another clinic during the two years between studies. For the measures of health status, satisfaction with care, and health services utilization, no statistically significant differences existed between NP-run or MD-run primary care clinics.

One of the discrepancies in patient outcomes involves the visit-based continuity and communication subscales, both of which were scored higher for the physician with respect to patient satisfaction. The investigators postulate that this finding was due to the fact that the location of the NP clinic changed between the initial and follow-up study, thereby creating a potential barrier to access. One of the other differences involved higher primary care utilization in the physician patient panel compared to the NP patient panel. Again, the researchers suggest that this difference reflects the larger baseline number of Medicaid patients in the physician group, rather than an attraction to a particular provider (Lenz et al., 2004).

Additionally, a comparison between NP clinics and standard medical offices for early return visits provides further insight into comparable NP and MD primary care services (Rohrer et al., 2012). An analysis of 1705 electronic medical records in a large group practice in Minnesota investigated return visit characteristics of patient with sinusitis across two primary care settings. Following data review, the researchers concluded that return visit rates did not differ between NP-led retail clinics (15.3%) and standard medical offices (19.4%). Although these clinics are limited in their diagnosis and treatment, Rohrer et al. (2015) still suggest

increased use of retail clinics due to their ability to provide care resulting in comparable, long term health outcomes.

Quality of Referrals

Quality of referrals remains another point of contention when comparing NPs and PCPs. The purpose of the investigation headed by Lohr et al. (2013) was to ascertain the ability of an NP, a physician assistant (PA), and a PCP to independently manage and refer patients with low disease complexity. The researchers utilized a retrospective comparison study evaluating regional referrals for 160 patients from January 2009 to December 2010. Both the NP and PCP initiated 146 referrals each over the course of two years, producing a total of 292 patient referrals. Five physicians were blinded and enlisted to grade the quality of referrals using a 7-item instrument.

Data analysis revealed that physician referrals scored higher than NPs and PAs in the following ways: referral question clearly articulated (86.3% vs. 76.0%), clinical information provided (72.6% vs. 54.1%), documented understanding of patient's pathophysiology (51.0% vs. 30.3%), appropriate evaluation performed locally (60.3% vs. 39.0%), appropriate management performed locally (53.5% vs. 24.1%), and confidence returning patient to referring HCP (67.8% vs. 41.4%). Overall, the judging panel concluded that NP and PA referrals were more likely to be unnecessary when compared to physician referrals. The results postulate that inappropriate NP or PA referrals may offset potential savings in hiring these providers by increasing delays in treatment and overall healthcare costs (Lohr et al., 2013). However, one must consider that the study did not account for potentially confounding factors, such as the amount of experience of the referring clinician, the level of NP or PA supervision, or the patient volume in each practice

setting (Lohr et al., 2013). All of these factors may potentially alter a true comparison of provider referrals.

Patient Satisfaction

Patient satisfaction represents another crucial measure that differentiates the NP from PCPs. The significance in measuring this aspect of healthcare rests in the correlation between patient satisfaction and the subsequent compliance, health behavior maintenance, and overall health outcomes (Budzi, Lurie, Singh, & Hooker, 2010). A descriptive, correlational study conducted by Budzi et al. (2010) employed the Survey of Healthcare Experiences of Patients to assess veteran satisfaction for three types of providers – the NP, the PA, and the physician. Veteran healthcare facilities represent the largest employer of NPs and PAs. Within this patient demographic, the concentration and exposure to this type of healthcare provider allows for adequate evaluation of provider-specific healthcare provision.

Of the 1,601,828 veteran survey responses, 74% expressed overall satisfaction with NPs. Data analysis revealed that certain NP attributes resulted in increased veteran satisfaction scores compared to those scores for a PA or physician. Specifically, the veterans cited interpersonal skills, such as personalized care, counseling, attentiveness, and health education, as the most influential elements of provider-related satisfaction. Although these sentiments mirror the typical training inherent in all nursing graduate programs, it should be noted that the majority of NPs in this study were also veterans, which may have affected patient attitudes (Budzi et al., 2010).

Research by Agosta (2009) presents further investigation into the underlying themes and behaviors contributing to patient satisfaction. A 28-item Likert scale survey identified and quantified responses of 300 participants. The three main subscales included general satisfaction, communication, and convenience and accessibility to a health clinic. With respect to general

satisfaction, the measures receiving the highest means scores included "Overall satisfied with NP visit" (M=4.91/5), "NP respected me"/"NP is caring" (M=4.90/5), and "Satisfied with the way NP treated me" (M=4.87/5). In terms of communication, the highest ranked item by participants was "Left NP visit with all questions answered", while the lowest ranked item was "Usually leave MD visit with all questions answered" (Agosta, 2015, p.128). The convenience and accessibility subscale reflected the importance of convenience and ease of scheduling. Overall, respondents indicated that the NPs communication style, including the presentation and explanation of health information, most positively affected satisfaction compared to the services of other healthcare providers.

Another study by Hunter, Weber, Morreale, & Wall (2009) further expounds on patient satisfaction with NP-led retail clinics. A sample patient panel from two Arizona clinics completed a self-report survey assessing for patient satisfaction with retail clinics and general patient preferences. Data analysis revealed that over half of the respondents chose to receive healthcare at the retail clinic due to its convenient location (61%), short waiting time (52%), and because no appointment is necessary (59%). Additionally, 95% of the respondents reported that they were "very satisfied" or "satisfied" with their experiences at the retail clinic, and 98% planned on returning for additional healthcare. In the absence of a retail health clinic, respondents indicated that they would either wait for an appointment, visit an urgent care clinic or the ER, or would not seek care at all. These findings suggest the retail clinic as a solution for increased, affordable, and convenient access for preventative and common health concerns (Hunter et al., 2009). In this way, the patient population receives satisfactory, timely care from the setting that matches their needs most appropriately.

Conversely, a comprehensive study conducted by Laurent et al. (2008) found that patients preferred a PCP when receiving healthcare services. Using a self-administered cross-sectional survey, the researchers assessed 1235 patients for their preference and satisfaction with each healthcare clinician. The researchers also identified the factors that influence these preferences and satisfaction levels. To ensure equitable assessment of each type of healthcare provider, NPs were allowed to practice independently and to perform certain tasks outlined by the researchers (Laurent et al., 2008).

Overall, the survey results revealed that patients were generally very satisfied with healthcare experiences and services, irrespective of the type of provider. However, further analysis showed differences in patient preference between a PCP and NP depending on the type of care required. Survey results indicated a 7/8 preference for the PCP over the NP for 'routine medical care'. Patients indicated a preference for the NP over the PCP for educational and supportive interventions, specifically valuing the longer consultation times, reassurance, and instruction on coping mechanisms (Laurent et al., 2008). The data suggests that satisfaction does not automatically equate preference. It also suggests that satisfaction and preference for a type of provider is not determined by the same set of factors. Therefore, the comparison between providers for these measures necessitates cautious consideration.

Barriers to Practice

The AACN (2015a) states that the "question is not whether APRNs should be providing primary care – they already do and have been for years – but if they should do so independently. The overwhelming evidence is yes" (p.1). However, if the aforementioned education, cost-effectiveness, and research supports full mobilization of NP services, then the continued existence of barriers to full scope-of-practice must be called into question. Limitations on NP

practice ultimately translate into reduced access to care, which contradicts the very aim of the new healthcare reform law. Although multifactorial in nature, the barriers to autonomy boil down to state scope of practice laws, reimbursement laws, organizational climate, geographic practice variation, and physician perceptions.

Current Scope of Practice

General state summary. Over recent years the primary care training expectations have changed. Biomedical knowledge expansion has led to abbreviated education, which resulted in a larger competence gap between specialists and PCPs (AACN, 2015b). This, in turn, has also led to an increase in the NP scope-of-practice. In order to ensure competent healthcare delivery in the midst of the evolving healthcare landscape, individual state licensing boards regulate NP education and licensure requirements, reimbursement policies, and scope-of-practice services, such as prescribing and diagnosing (NGA, 2012). Although typically managed by the state boards of nursing, regulation may also be jointly monitored with a board of medicine or other subsidiary board (NGA, 2012). For licensure, 45 states and the District of Columbia mandate certification from a nationally recognized certifying body. The other five states do not necessarily require national certification, but do require completion of a board-approved master's degree with courses equivalent to those accepted by national certifying bodies (NGA, 2012).

According to the American Association of Nurse Practitioners (2015), three definitions for scope-of-practice exist in the current policy arena. Full scope of practice refers to NPs allowed to evaluate, diagnose, order and interpret diagnostic tests, initiate and manage treatment, including prescribing medication. Reduced practice refers to those NPs required to engage in a collaborative partnership with another health discipline, usually a physician. This scope of practice also removes at least one element of NP practice normally allowed under independent

NP practice. Restricted NP practice refers to those clinicians who must be supervised by the state or outside health discipline in order to provide care. As with reduced scope of practice laws, restricted NP practice also removes at least one element of NP practice (AANP, 2015).

Currently, only 16 states and the District of Columbia allow NPs to practice to the full scale of their education and training, while 34 states still require some type of partnership with a physician (NGA, 2012; AACN, 2015a). Unfortunately, the desired shift from silos to interprofessional teamwork has been interpreted to mean provider oversight, rather than collaboration. This stipulation both impedes consumer access to care and the formation of true care coordination (Pohl, Hanson, Newland, & Cronenwatt, 2010). Often times the nature of this supervisory agreement consists of a paperwork signature, meaning that NPs have already, to an extent, been practicing autonomously (AACN, 2015a).

A more specific regulation imposed by state scope of practice laws entails restricting NP prescription. Prescriptive authority is even more tightly regulated when compared to other NP practices. Laws regarding the prescription of certain types of substances and devices typically require additional NP training and experience, even though advanced pharmacology constitutes a core component of their graduate studies (NGA, 2012). In 2012, 16 states and the District of Columbia allowed NPs to prescribe both controlled and non-controlled substances without physician oversight. Only Alabama and Florida prohibit NP prescription of controlled substances entirely, and the remaining 33 states require either physician oversight or a written protocol for both prescription categories (NGA, 2012). In these restricted states, patients may experience delays in treatment due to the lengthy process of securing prescription orders (Yee et al., 2013).

Another scope of practice regulation involves restriction of NP care to a certain geographic area or setting. Laws in several states may sequester an NP to a designated site

because of the required physician collaboration, thus preventing practice within multiple settings (Pericak, 2011). In these scenarios, NPs need to apply for separate agreements to practice in each location. This stipulation complicates their ability and flexibility to practice across provider-scarce care settings (Yee et al., 2013).

Each state varies in its scope of practice laws, which complicates the process of NP inclusion to augment primary care services. Although these laws do not specifically limit the types of services that an NP may provide to patients, necessary documentation affects where and how NPs may deliver care (Yee et al., 2013). Research by Pohl et al. (2010) indicates that the less restrictive states are those with only a board of nursing serving as regulatory body, while involvement of another professional board correlates with increased NP practice restrictions. The hypocrisy behind these laws lies with the fact that other healthcare professionals practice to the full extent of their education and training, while the NP must practice under the strong-arm of arbitrary regulation (IOM, 2010b). These current state scope of practice laws are therefore failing to keep in stride with the evolution of the APRN role (NGA, 2012).

In order to modernize these state laws, the National Council of State Boards of Nursing APRN Advisory Committee and APRN Consensus Work Group drafted and released the 2008 APRN Consensus Model. The purpose of this Consensus Model is to "better align licensure, accreditation, certification, and educational requirements across states by 2015" (NGA, 2012, p. 4). Despite the fact that every state board of nursing expressed their agreement with the model, various state legislatures have stonewalled its adoption. As of 2012, only five states attained full implementation of the Consensus Model (NGA, 2012).

As a whole, these scope-of-practice laws significantly impact NP practice. Although these laws "do not prohibit but also do not grant" specific tasks outside of prescription authority,

the NP is still mostly subject to supervision requirements (Yee et al., 2013, p. 4). As a result, NPs leave these restrictive states in search of more practice autonomy. Consequently, this provider exodus leaves certain areas without a sufficient amount of health providers. In this sense, the scope-of-practice restrictions affect both the ability of the NP to provide care and, therefore, the consumer's level of access to care (Poghosyan, et al., 2012).

Michigan. In the state of Michigan, NPs provide care under a reduced scope of practice. NPs are required by the state board of nursing to obtain national certification. NPs must also secure a collaborative agreement with a physician in order to refer, diagnose, or treat. This includes prescribing non-controlled substances, while written protocols are currently in place for controlled substances (NGA, 2012).

Current Reimbursement Structure

Closely tied with scope-of-practice policies are reimbursement policies, which also significantly impact the extent of NP utilization. In fact, a study conducted by Yee et al. (2013) found that the majority of NPs reported that the most significant factor influencing how and where they provide care is not scope-of-practice laws, but rather public and private payer policies. Payers possess the power to determine reimbursement rates, types of services, level of autonomy, and direct payment for NP services (Yee et al., 2013). Even in states with allowing full NP scope-of-practice, payment criteria may limit the level of reimbursement and the ability for NPs to establish their own primary care practices (Lathrup & Hodnicki, 2014; Yee et al., 2013). For instance, Michigan contains laws outside of SOP jurisdiction that restrict NPs from forming a professional services company (Yee et al., 2013).

As of 2012, NPs may receive direct reimbursement of up to 85% of the physician fee under Medicare Part B. They are also recognized as primary care providers in Medicare Part C

managed care plans (AANP, 2012). Although federal law also allows designation of the NP as a primary care provider in state Medicaid managed care models, only 33 states and the District of Columbia currently permit this designation (NGA, 2012). Medicaid and third-party reimbursement policies may also vary by state: for instance, NP reimbursement is 75% of the physician rate in Kentucky, 92% in Texas, and 100% in Virginia (NGA, 2012).

Reimbursement for NP services at 100% of the physician rate occurs most often as a result of 'incident-to' or 'incidental' billing. The Centers for Medicare and Medicaid Services define incidental care according to several criteria, including on-site physician supervision and provision of care guided by the physician's treatment plan (Yee et al., 2013). In order to receive full reimbursement for services, numerous physicians pressure NPs against billing as an independent primary care provider (Yee et al., 2013). Even in situations with direct reimbursement, NPs express difficulty in finding and retaining a sufficient patient panel whose insurance plans recognize NPs as primary care providers (Yee et al., 2013). These billing discrepancies dissuade numerous NPs from independently filing for reimbursement. As a result, the current reimbursement system discourages the valuable role of the NP as an autonomous, holistic health provider (Tolman, 2011; Yee et al., 2013).

These policies also oppose the ACA's vision of 24/7 healthcare access via a team-managed medical home (Newhouse et al., 2012). The implications in hiding NP services under physician practice directly impact future NP care outcome research. Lack of sufficient provider outcome data then creates less financial incentive for utilizing more NPs as autonomous providers (Poghosyan et al., 2012). As a result, numerous managed care organizations (MCOs) withhold primary care provider designation.

According to a study conducted by Hansen-Turton et al. (2008), nearly half of all MCOs refuse to credential the NP as a primary care provider. For those MCOs that do recognize the NP as an independent provider, only half reimburse NPs at the same rate as the physician. The study found that the most common reason for withholding primary care provider credentialing is because the NP must bill under a physician provider number. With the knowledge that 70% of Medicaid enrollees receive most of their care through these managed care plans, NP reimbursement and practice restrictions translate into decreased consumer access (Kaiser Family Foundation, 2012b). The researchers concluded that these results convey a general lack of understanding of the NPs unique and complementary skill set, leading insurers to surmise that the NP role is secondary to physicians in the primary care setting (Hansen-Turton et al., 2008).

Organizational Climate

In addition to state regulatory barriers, local organizational structures may also serve an impediment to full NP utilization. Organizational policies may neutralize legislation for NP practice expansion or may deny NPs the resources and support typically provided to PCPs (Poghosyan, Nannini, & Clarke, 2013; Liu, Finkelstein, & Poghosyan, 2014). Organizations must acknowledge that if NPs provide care equal in quality with PCPs, they, too, deserve equitable distribution of resources (Liu et al., 2014). Research conducted by Poghosyan et al. (2013) investigated the effects of the organizational climate on NP productivity. Organizational climate was defined as "a set of organizational attributes perceived by NPs about their practice settings, which emerge from the way the organization interacts with NPs and affects NP behaviors and outcomes" (p.135).

Utilizing the Survey of Organizational Attributes for Primary Care and the Practice Environment Scale of the Nursing Work Index, the investigators found that organizational

climate impacted NP autonomy, physician relations, and professional visibility. With respect to autonomy, results indicated that restrictive organizational climates affect NP independence and clinical decision-making. Third party reimbursement continually reinforces these restrictions through revenue incentives. In terms of NP-physician relations, ambiguous organizational role outlines may generate challenges in collaboration and care continuity due to scope-of-practice overlap. Professional visibility is a third organizational element hindering recognition of NPs as a primary care provider. As with autonomy, current reimbursement systems discourage independent NP billing. This leads to a reduction in NP-specific outcome tracking, thereby perpetuating NP invisibility (Poghosyan et al., 2013).

However, a study by Poghosyan, Boyd, & Knutson (2014) involving NPs in New York revealed that professional visibility was not as significant of an issue among primary care organizations. In fact, 85% of the patient panel surveyed reportedly knew the type of care delivered by the NP. From the NP perspective, though, professional visibility was not an issue when the NP perceived more practice independence. When NPs reported a high level of perceived practice autonomy, defined in the study as "NPs do not have to discuss every patient care detail with the physician", they were more likely to engage in teamwork with the physician and other providers (Poghosyan et al., 2014, p. 477). The researchers suggest that in order to increase NP teamwork participation and sustain a collaborative environment among primary care providers, organizations must remove NP practice restrictions (Poghosyan et al., 2014).

Additional organizational frustrations cited by NPs include the lack of adequate visitation/consultation time, the impact of cost pressures on care decisions, feeling overwhelmed by patient needs, and anxiety surrounding ethical dilemmas (Tolman, 2011; Ulrich, Zhou, Hanlon, Danis, & Grady, 2014, p. 155). Patient education and advocacy then become

increasingly difficult when organizational restrictions impede complete NP clinical judgment and action.

Although the aforementioned studies highlight organizational factors that inhibit utilization of NPs, scarce amounts of literature actually outline the ways in which organizations may optimize utilization of NPs (Liu, Finkelstein, & Poghosyan, 2014). This distinction is imperative to organizational performance, as the ineffective use of NP time and skills may prolong patient treatment, waste funding, and diminish employee enthusiasm (Liu et al., 2014).

Research conducted by Liu et al. (2014) offers a tentative framework for productive and cost-effective NP utilization. With the assistance of a medical assistant (MA), the researchers hypothesized that this resource may create additional time to accommodate a larger patient panel. Analyzing the relationship between staffing costs and the number of patients served, results revealed that productivity of the NP-MA model increases 40% compared to a sole NP model. In addition, annual staffing costs per patient dropped by 12% after hiring an MA. The results of the data suggest that improving provider service rate proves more effective in increasing productivity compared to reducing provider service times. Therefore, it benefits organizations to provide adequate resources and support to the NP in order to optimize output and overall patient outcomes (Liu et al., 2014).

American Medical Association and Physician Perceptions

Physician attitudes comprise another sizable obstruction to NP scope-of-practice expansion. The American Medical Association persists in its skepticism over the abilities of NPs to serve as primary care providers. Although NPs agree that "a master's degree does not equate to a medical degree," the NP does not by default agree that the PCPs constitute the only qualified type of provider (AACN, 2015a, p. 3). This argument presumes that the NP cannot practice at the

same caliber as PCPs despite the fact that the aforementioned literature provides contrary evidence. The Institute of Medicine (2010a) also counters this argument with the evidence that states with reduced to full NP scope-of-practice laws have not experienced deterioration in patient care.

In order to remain legitimate in the eyes of consumers and stakeholders, this portion of the medical profession reframes their concern regarding a shrinking monopoly over primary care as a concern over primary care quality (AACN, 2015a). In essence, the issue becomes one of fear of physician replacement, rather than addressing the need for primary care.

These preconceived notions may originate from a lack of knowledge regarding the actual preparation and roles of the NP. Both of these health professions represent the product of two different educational systems and theoretical frameworks (Donelan, DesRoches, Dittus, & Buerhaus, 2013). Despite the rise of interprofessional education, the continued system of educating in silos results in an unfamiliarity with each professions' respective scope of practice. A study conducted by Donelan et al. (2013) sought to investigate current perceptions about NPs in the primary care workplace. The results of the postal-mail survey of 505 physicians and 467 NPs revealed the conflicting perspectives concerning each other's capabilities. For the measure asking whether "Nurse practitioners should be able to practice to the full extent of their education and training", 76.3% of physicians and 95.6% of NPs agreed with this statement. For the measure inquiring whether "Nurse Practitioners should lead medical homes", 17.2% of physicians and 82.2% of NPs agreed with this statement. On other measures inquiring about timeliness, access, and quality of care provided by NPs, physician attitudes did not mirror NP perceived abilities (Donelan et al., 2013).

Another research endeavor investigated whether familiarity among MD and NP primary care providers resulted in mutual respect (Street & Cossman, 2010). Analysis of the 2007-2008 Mississippi Physician Workforce survey found that physicians who regularly worked with an NP were more likely to agree that NPs help attract new patients, are able to provide most of the same services as a physician, should be able to prescribe some drugs, and created more time for the physician to see other patients (Street & Cossman, 2010). The study suggests that familiarity with NPs results in more positive attitudes towards the profession as opposed to physicians with little experience working with NPs. However, the research also revealed that PCP familiarity with NPs was unrelated to their beliefs about NP autonomy. Put simply, the sample still believed that NPs should not be allowed to practice independently regardless of the degree of familiarity (Street & Cossman, 2010).

These studies highlight the determination of the medical profession to maintain control over primary care (Street & Cossman, 2010). Disguised under a concern for competence and quality, increasing opposition seems to stem from a perception of both "turf" infringement and economic defensiveness (Mullinix & Bucholtz, 2009; Lathrup & Hodnicki, 2014; AACN, 2015a; Pericak, 2011; Tolman, 2011).

The collaborative relationships required in certain states means that the PCP may employ an NP at a lower cost than another MD for the same services, resulting in a profit for the practice (Mullinix & Bucholtz, 2009). With the expansion of NP independence, physicians may worry that their salaries will decrease due to increased competition. A ten-year study conducted by Pittman and Williams (2012) investigated whether or not physician wages changed with increased NP autonomy. Comparing annual wage data from the Bureau of Labor Statistics in states with limited and full NP scope-of-practice laws, the results found that the difference

between salaries was not statistically significant. In fact, states with full NP scope-of-practice laws saw an wage increase of 5.73% for physicians compared to an increase of 5.11% in more restrictive states over the course of ten years (Pittman & Williams, 2012). The results of this study suggest the exact opposite effect on PCP wages when state laws grant NPs the authority to practice independently.

Furthermore, the term 'collaboration' is often substituted with 'supervision', which devalues the NP skill set (Yee et al., 2013; Poghosyan et al., 2013). Utilizing terms, such as 'physician extenders' and 'non-physician providers' also perpetuate the ambiguity surrounding NP competency and expertise (Poghosyan, 2012). Within the nursing profession, the socialization of these titles and their connotations impede numerous NPs from pursuing independent practice (Tolman, 2011). Ultimately, restricted practice and role invisibility negatively impacts consumer access.

Not all professional organizations oppose increased NP utilization; the American College of Physicians (ACP) expresses a willingness to engage in true collaboration with NPs to promote improved quality of patient care (ACP, 2009). The future of primary care depends upon the capabilities of healthcare disciplines to set aside polarizing perceptions in favor of interdisciplinary teamwork (ANA, 2014; Ulrich et al., 2014).

Impact on Nurse Practitioner Job Satisfaction

In the face of strong opposition, NPs must remain confident in their competencies (Mullinix & Bucholtz, 2009). However, repeated exposure to hostility, criticism, and disregard may impact the morale of the profession. Several studies examining satisfaction sources, attributes, and barriers offer insight towards fostering a professional workforce equipped to tackle the growing complexity of primary care.

In order to attract and retain a motivated group of professionals, Ryan and Ebbert (2013) sought to identify attributes that satisfy NPs in their practice. The descriptive research study utilized the Misener Nurse Practitioner Job Satisfaction Scale to isolate key extrinsic and intrinsic factors that influence the provision of healthcare. The highest satisfaction scores related solely to intrinsic factors, such as "time for patient care", "level of autonomy", "ability to deliver quality care", "sense of accomplishment", "finding challenge in work", and "long work tenure". These intrinsic motivators were also found to increase satisfaction in NPs over the course of 10 years. Measures indicating dissatisfaction included intrinsic factors, such as "involvement in research" and "additional time to serve on professional committees", and extrinsic factors, such as "compensation", "monetary bonuses", and "reward distribution" (Ryan & Ebbert, 2013, p. 429).

The results of 112 surveys revealed that most NPs were "minimally satisfied" to "satisfied" with their current work status and environment, even across scope-of-practice levels. However, average satisfaction levels should not characterize an intelligent, competent profession implementing evidence-based practice in the primary care setting. The majority of the factors creating dissatisfaction among NPs include elements currently posing as barriers to equitable reimbursement and full scope-of-practice (Ryan & Ebbert, 2013). Perhaps implementing changes that mitigate or eliminate these sources of discontent may result in a workforce characterized by optimum satisfaction, and, consequently, enhanced patient care.

In another investigation exploring primary care NP perceptions of practice autonomy, Bahadori & Fitzpatrick (2009) surveyed a convenience sample of both Master's and Doctoral prepared NPs. A 48-item questionnaire, modeled after the Dempster Practice Behavior Scale, assessed four factors relating to autonomy: readiness, empowerment, actualization, and

valuation. The survey results reflected an overall high degree of perceived autonomy, value, merit, and usefulness regardless of age and experience. Conversely, the empowerment subscale contained the lowest mean score. This subscale reflects obstacles related to reimbursement and state laws regulating prescription authority and collaborative agreements with physicians. This data suggests that NPs value autonomy because they believe it to have worth (Bahadori & Fitzpatrick, 2009). Therefore, eliminating those factors that negatively impact autonomy proves a crucial element in empowering primary care NPs in their practices.

Additionally, Pron (2012) investigated the factors influencing satisfaction among NPs in Nurse-managed health centers (NMHCs). The descriptive, cross-sectional survey employed the Misener Nurse Practitioner Job Satisfaction Scale to identify and measure factors influencing job satisfaction among a sample of primary care NPs. Results indicated that autonomy is the premier factor impacting job satisfaction and retention in NPs. The perceived autonomy measure correlated moderately to strongly with satisfaction with autonomy, suggesting a dependent relationship. Other factors receiving high satisfaction scores include benefits and professional, social, and community interaction and time. NPs working in NMHCs indicated minimal satisfaction with intrapractice partnership/collegiality and opportunity for professional growth. Overall, though, 98% of respondents recommended the NMHC as a satisfactory work setting, despite the fact that these NPs receive a smaller salary than in a primary care clinic (Pron, 2012). The implications of this study reveal that, above all else, autonomy in practice generates the most job satisfaction.

Implications for the Future

Advocacy

Although typically accustomed to advocating for the patient population, the research presented in this paper implores the NP population to advocate for the future of their practice. Progress in favor of the profession may only arise through solidarity when addressing community members and state legislators (Newhouse et al., 2012; Pericak, 2011). These political officers must be educated about the social and economic implications of full NP deployment into the primary care arena (Pericak, 2011). In addition, healthcare consumers must be informed about NP competency and safety (Laurent et al., 2008).

Increasing state association or coalition membership also provides opportunities for NPs to raise questions and concerns and initiate dialogue about maximizing the profession's contribution to healthcare (Lathrup & Hodnicki, 2014; Pericak, 2011; O'Grady, 2012). The IOM (2010b) echoes these recommendations by stressing the necessity for all nurses, including NPs, to participate in healthcare delivery redesign efforts. Several of the main issues cited in the literature include equal reimbursement, provider collaboration, and scope-of-practice laws (Lathrup & Hodnicki, 2014; O'Grady, 2012).

A premier example of professional advocacy that led to policy change involved the Massachusetts Coalition of Nurse Practitioners (MCNP). Under the state Nurse Practice Act, a collaborative agreement with a physician was required for NP practice. In addition, NPs were not recognized as independent primary care providers within private insurance directories. In order to increase NP transparency and meet the consumer demand for PCP access, the MCNP filed legislation that concretely defined the primary care provider role as one that included NPs. The proposed legislation was not meant to change the NP-MD collaborative model, nor the scope of

nursing practice. Rather, the MCNP chose to focus on the issue of consumer choice and access. The legislation passed into law in August 2008, thereby granting Massachusetts NPs the title of PCPs in insurance directories by January 2009 (Craven & Ober, 2009).

Promotion of increased administrative roles and practice governance constitutes another area of advocacy warranting discussion. A study conducted by Heale (2012) at the Sudbury District NP Clinics presented a model for advancing the NP voice in the governance of its organization. The results of this study demonstrate the relationship between increased NP involvement in managing their workplace operations and the reduction of barriers to practice. Championing the 'Nurse Practitioner-Led Clinic' promotes interprofessional collaboration and additionally improves healthcare access to communities (Heale, 2012).

Education

From an educational standpoint, the literature suggests standardization of all NP educational programs in alignment with national board certification (Tolman, 2011). In addition, curriculum should include practice management, with an emphasis on the independent practice model (Tolman, 2011). The IOM (2010b) also provides several recommendations for the future of nursing education. One recommendation calls for doubling the number of nurses seeking a doctoral degree by 2020. Another recommendation suggests that "at least 10% of baccalaureate degree nurses matriculate into a master's or doctoral program within five years of graduation" (IOM, 2010b, p.2). Other recommendations include expansion of graduate program funding and the creation of salary and benefit bundles designed to attract and retain APRNs (IOM, 2010b).

Another educational point of contention pertains to role transition for the new NP. Formal orientation proves crucial in successful role transition, especially since the rate of NP turnover is twice that of physicians (Barnes, 2015). The two most crucial factors for effective NP role

transition include the level of NP experience and the presence of a structured orientation. Absence of these factors has been found to lead to "an alteration in professional identity, loss of confidence, impaired NP role development, lower job satisfaction, and feelings of discontentment" (Barnes, 2015, p. 178).

A descriptive, cross-sectional study of 325 practicing NPs provides empirical data on NP role transition in relation to the two aforementioned factors. Barnes (2015) found that prior RN experience was neither a promoter nor inhibitor of successful NP transition. However, the formal orientation measure was positively correlated with NP role transition. The most crucial finding, though, was that 91% of the variance in NP role transition was attributed to external variables, such as "type of experience", "number of precepted clinical hours", "orientation length", and "resource availability" (Barnes, 2015, p. 182). The implications of this study necessitate a need for a more structured, standardized orientation education programs in order to facilitate matriculation and retention of NPs in the profession.

Research

The literature review presented in this paper offers a brief, yet comprehensive, outline of the present knowledge concerning NP practice outcomes and barriers to practice. However, due to the continual complications involved in tracking NP-specific quality measures and subsequent reimbursement, additional research proves necessary (Poghosyan et al., 2013). The need for further investigation also corresponds with the IOM (2010b) recommendation to create "an infrastructure for the collection and analysis of interprofessional health care workforce data" (p. 3).

Future research should focus on care outcomes in states with full NP scope-of-practice, specifically investigating for care quality, cost, access, patient satisfaction, aspects of

interprofessional communication that enhance NP satisfaction, and quality of NP referrals (Stanik-Hutt et al., 2013; NGA, 2012; Agosta, 2009; O'Grady, 2012; Lohr et al., 2013). Future research should also explore patient outcomes from models of care that promote matching of patient needs with provider competencies (Stanik-Hutt et al., 2013). Additionally, effects of primary care NP mentoring programs on measures including quality of care, productivity, job satisfaction, and duration of practice allow for creation or redesign of improved transition strategies (Harrington, 2011).

In order to meet the goal of streamlined interprofessional care, healthcare professionals have an obligation to review existing information to better understand each profession's roles and responsibilities (Stanik-Hutt et al., 2013). Funders of research also have an obligation to support studies investigating patient quality of care, irrespective of whether the provider is an NP or and MD (Mullinix & Bucholtz, 2009).

Policy Change

The final, and arguably most crucial factors warranting change, involves state scope-of-practice laws and insurance policies for NPs (Yee et al., 2013). First, the arbitrary and restrictive state scope-of-practice laws must be lifted and replaced with consistent, evidence-based regulations reflecting the NP education and training (Poghosyan et al., 2012; Lathrup & Hodnicki, 2014; Poghosyan et al., 2013; Mullinix & Bucholtz, 2009; Newhouse et al., 2012). Following the implementation of the ACA, the surge in patients flooding the primary care sector necessitates a provider pool to match the increase in disease load and complexity (Lathrup & Hodnicki, 2014). The realization of healthcare reform will never come to fruition if policymakers perceive healthcare as strictly medicine (AACN, 2015a). Full deployment of NPs through

independent practice laws will increase access, efficiency, and the quality while containing the cost of care (Pohl et al., 2010; Pericak, 2011).

In addition to revising scope-of-practice laws, public and private insurance companies need to consider revising current definitions of primary care providers in order to include NPs. Policies enforcing recognition of these clinicians as independent care providers within an interdisciplinary context should also result in direct reimbursement to NPs for their services at 100% of the service fee (Yee et al., 2013; Newhouse et al., 2012). Insurance reform may begin with state Medicaid managed care plans in order to quickly address the substantial amount of new enrollees (Yee et al., 2013). Managed care plan credentialing and reimbursement of nurse-managed health centers allow for financial viability and another avenue to healthcare access (Hansen-Turton et al., 2008).

Adoption of pay-for-performance programs, such as the Physicians Quality Reporting Initiative or the National Committee for Quality Assurance, constitutes another potential insurance reform. These programs provide models that encourage billing under their own NPI numbers and thereby allow for tracking NP quality care measures (Schram, 2010). Payers also possess their due influence in determining NP service rates, types of services provided, whether to reimburse NPs directly, patient panel sizes, and whether to recognize NPs as primary care providers (Yee et al., 2013).

Administration and practice managers may contribute to the future dialogue and action plan for expanding NP utilization. This personnel possesses the ability to promote NP autonomy while simultaneously defining the nature of NP-MD collaboration within organizations (Poghosyan et al., 2013; Poghosyan et al., 2014). Further development of NP-led practice models

will aid in the transition to an increased organizational incorporation of primary care NPs (Schram, 2010).

The federal government's role in policy redesign includes the formation of a coalition among specific bodies, such as Congress, the Federal Trade Commission, the Office of Personnel Management, and the Centers for Medicare and Medicaid Services (IOM, 2010a). These stakeholders must work synchronously in order to help remove the restrictions imposed on NP practice. In addition, these federal bodies may enact reforms that create incentives for increased NP autonomy and hiring (IOM, 2010a).

Boards of nursing and professional nursing organizations comprise other instrumental bodies within the policy change dialogue. These organizations are equipped to provide centralized services for referrals and advice, which will foster enhanced, independent NP functioning within an interprofessional team (Tolman, 2011). The AACN also plans to raise national accreditation standards in order to eliminate the questions concerning NP preparedness and competency. However, the AACN must be sensitive to the impact on primary care NP growth, as this policy change will necessitate increased time and training (Yee et al., 2013). Professional boards of nursing must also discuss the policy implications for the future of the interprofessional care model with boards of medicine in order to reach an agreement that benefits the patient population (Mullinix & Bucholtz, 2009). In this way, each profession contributes their own set of specialty skills in order to achieve the mutual goal of quality primary care services (Newhouse et al., 2012).

NPs also have an obligation to themselves and profession to engage in intra-professional empowerment. Effective programs exhibit "improved career outcomes, productivity, self-esteem, job satisfaction, career commitment, and a shorter adjustment period" (Harrington, 2011, p.171).

Research investigating the benefit of role transition and clarification suggests implementation of mentoring programs to facilitate further competency development among new professionals.

Conclusion

The overarching principle presented in this research is the commitment ongoing care improvement for the achievement of optimum patient health and wellbeing (Pohl et al., 2010). Realization of this goal in congruence with the mandates of recent healthcare reform is dependent upon NPs practicing independently, but also in full collaboration with other healthcare providers. Ethically speaking, the benefits of autonomous primary care NP practice include increased patient autonomy, taxpayer and patient beneficence, fair distribution of resources, and continuing the fidelity already established between patient and provider (Tolman, 2011). Additionally, ensuring that all primary care providers are identified, paid, and held accountable according to the same evaluation standards represents a crucial step towards safer, timely, efficient, effective, equitable, and patient-centered care (Pohl et al., 2010; IOM, 2001).

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