The Nurse Practitioner Role in United States of America within Transitional Care and Care Coordination Models

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Aim *To examine the variations in nurse practitioner (NP) transitional care and care coordination models which have been operationalized within targeted populations that have fiscally reduced healthcare costs in the USA. A context of future globalization application of these emerging models will be discussed.*

Background *The USA healthcare is complicated and the need for care coordination across systems and providers is essential to maintain quality of care. NPs are ideally positioned to act as leaders and clinicians both within and beyond the health care organization to deliver patient centric transitional care and care coordination models in the heart failure, geriatrics, palliative care and mental health populations.*

Evaluation *From the available research evidence, several support structures and mechanisms are identified as enablers for NPs to enact their leadership role in transitional care and care coordination models.*

Implications *Nurses have a vital role influencing the organization's strategic plan and prioritizing leadership capacity building to advocate that the NP role can be expanded to transitional care and care coordination service delivery across levels of care. Nursing leadership can promote that NPs have potential in leading health care reforms in diverse populations.*

Conclusion *National and global health care organizations need to include building leverage for NPs to deliver transitional care and care coordination models as a priority in their healthcare strategic plan and take action to promote the level of NPs leadership in innovative patient centric care.*

Key Words *(nurse practitioner, transitional care, care coordination)*

Introduction

Even though United States of America (USA) healthcare expenditures are far higher than those of 30 other developed countries, the USA has rated poor in healthcare metrics in quality, cost, and access, compounded with an aging population (Anderson & Squires, 2010). The USA healthcare is complicated and the need for care coordination across systems and providers is essential to maintain quality of care. The evolution of Nurse Practitioner (NP) practice has occurred within the context of a national mandate for significant improvements in our healthcare system. The growing body of evidence of the outcomes associated with NP practice has influenced recommendations for future direction contained in consumer reports and healthcare policy initiatives. The NP practice outcomes have been studied for evidence of improved access to care, care coordination, quality care delivery, and financial impact in terms of cost savings for the consumer and the healthcare system (Bauer, 2010).

The report released by the Institute of Medicine's (IOM), Future of Nursing (FON) report (2010) advocated expanding the NP) scope of practice to work at the highest level of their education and training, in order to have an impact on the Triple Aim population health framework, of increasing the health of the USA population, increasing the quality of care, and lowering the healthcare expenditures (Berwick, Nolan, & Whittington, 2008; Feistritzer & Jones, 2014). The NPs have become transformative healthcare providers as the USA is innovating and redesigning patient care coordination and patient centric care delivery models in the era of healthcare reform. The NPs are delivering emerging practice models of integrated team based care within transitional care and care coordination programs across various care settings (Feistritzer & Jones, 2014). The aim of this paper is examine the variations in NP transitional care and care coordination models which have been operationalized within targeted populations which impact the increasing healthcare costs in the USA. An additional aim of the paper will be to highlight the future globalization and application of these NP emerging care delivery models in populations in need of chronic disease management.

Over the past several decades, in the USA, there has been an increase in the number of Advance Practice Registered Nurses (APRN) with an expansion in their scope of clinical practice. These APRNS are Registered Nurses (RNs) who have a master's degree in nursing, are certified by professional or specialty nursing organizations, and are licensed to deliver care consistent with their areas of expertise and the laws that govern nursing scope of practice within each state of the USA. The roles of APRNs include certified registered nurse anesthetists, certified nurse-midwives, and clinical nurse specialists and certified nurse practitioners (National Council of State Boards of Nursing APRN Advisory Committee, 2008).The APRNS are highly valued and an integral part of the health care system and about 70–80 percent of APRNs work in primary care and in pediatrics, adult health, and gerontology. The role of the NPs constitutes over 70% of the APRN workforce (Dubree, Jones, Kapu, & Parmley, 2015; Naylor & Kurtzman, 2010). The role of the NPs are to serve as primary and specialty care providers, delivering advanced nursing services to patients and their families. Nurse Practitioners assess patients, determine the best way to improve or manage a patient's health, and discuss ways to integrate health promotion strategies into a patient's lifespan.

They typically care for a certain population of people. Specifically, NPs perform physical examinations, diagnose and treat many common illnesses, order tests, and prescribe medications. They also focus on health teaching and supportive counseling with an emphasis on prevention of illness and health maintenance; and refer patients to other health professionals as needed (Bauer, 2010).

Nurse Practitioners are essential key members of the multidisciplinary health care team who also provide transitional care and care coordination. Transitional Care is defined a set of actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care within the same location. Representative locations include (but are not limited to) hospitals, sub-acute and post-acute nursing facilities, the patient's home, primary and specialty care offices, and long-term care facilities (Coleman, 2003). Care coordination has been defined by the Agency for Healthcare Research and Quality (2015) as "deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient's care to achieve safer and more effective care". Care coordination is often encouraged as a means to improve quality of care and control costs associated with chronic illness (National Chronic Care Consortium, 2007). When NPs are working with certain population of people, nursing transitional care and care coordination models emphasizes patient education, engagement of patients and families in prevention, self-care, and adoption of health information technology to improve access to information (Robinson, 2010).
Several systematic reviews have demonstrated that NPs provide safe and effective care to patients in acute and primary care and in transitional care and care coordination (Bauer, 2010; Donald et al. 2015; Martin-Misener et al. 2015). Additionally, NPs showed significant cost savings and cost avoidance in the provision of care. Newhouse et al. (2011) conducted a meta-analysis of APRN outcomes. A database search of multiple electronic sources revealed 27,993 studies, from which 37 studies were selected for comparison. Innovative, impactful and sustainable health care reform by NP care coordination models is preserving the future of an effective and expansive USA health care system. Bauer, (2010), outlined the NP evidence correlating the quality of care delivery with significant cost savings to the consumer and to the practice, stating that NPs were an underutilized resource for addressing the quality and cost imperatives of health care reform.

Transitional Care and Care Coordination Models

The number of transitional care and care coordination models has increased over the past 10 years, focusing on different populations and objectives. The literature generally distinguishes between the following: (a) social models of care coordination that were often developed by state government health funded insurance to manage long-term care needs of the elderly, (b) medical models of care that were initially developed largely by commercial health insurances that are managed care services to handle chronic disease, and (c) integrated care coordination models that deal with both social and medical needs. Transitional care and care coordination approaches may focus on different types

of services depending on various models (Robinson, 2010). Several examples of transitional care and care coordination were included in the enacted health care reform legislation (Patient Protection and Affordable Care Act, 2010). In addition, a community-based Collaborative Care Network Program was established to support consortiums of health care providers who coordinate and integrate health care services for low income, uninsured, and underinsured populations (Robinson, 2010).

According to the IOM FON report (2010), the current health care "silo" system leaves significant gaps in care. Smooth transition of patients across care settings is especially needed with the elderly and chronically ill populations. Nurse Practitioners are uniquely qualified to coordinate increasingly complex patient care and improve communication between multiple health care providers to prevent the fragmentation of care that results in a corresponding rise in cost and medical errors (Newhouse, et al., 2011).

The IOM FON report (2010) highlighted the creation and sustainability of innovative care models based on current successes such as the acute care responsive nursing teams, chronic care disease nurse led management teams, palliative and end-of-life care and community-based nurse managed clinics. These nursing models were envisioned to cross disciplines, foster collaboration and partner with communities, business and other organizations. The future of health care rests solidly with the strength nursing brings in holistic care, ability to collaborate and innovate from the bedside to the community and the ability to adapt to the changing environment.

The evolving and emerging NP transitional care and care coordination practice models which have been studied are; the transitional and care coordination among heart failure patients; primary and palliative care navigation for oncology patients, transitional interventions among the geriatric population discharged from hospital to various post-acute care services, and a transitional care model for individuals with mental illness (Deitrick, et al., 2011; Enguidanos, Gibbs, & Jamison, 2012: Johnson, 2016; McCauley, Bixby & Naylor, 2006; Naylor, et al, 2004: Owens, et al., 2012; Solomon, Hanrahn, Hurford, DeCesaris, & Josey, 2014). These practice areas have leveraged the expanded roles of the NP workforce when patients' transitions across health care settings.

Nurse Practitioner Transitional Care and Care Coordination in Cardiovascular Care

Private and public sector health plans have propagated a diversity of program initiatives in the chronic care, and transitions care model programs to enhance patient centered quality, satisfaction, and cost effectiveness for the chronically elderly patients (Sochalski, et al., 2009). The challenges of these programs are to identify the chronically ill patients that would most benefit from these programs in a variety of ways and means. Several nurse leaders have observed that the needs of people with chronic illness are not well served by the USA health care system. Nurses are offering promising solutions to address the needs of people with chronic illness.

Since 1981, Dr. Mary Naylor and several collaborators have developed a transitional

care model (TCM) that employs advanced practice nurses, NPs, as transitional care nurses (TCN), to provide hospital discharge planning and transitional care for a variety of vulnerable patient populations with multiple chronic illness. The TCN has been a master's prepared NP with expert knowledge and skills in the care of chronically ill older adults. The TCN follows patients from hospitals into their homes, providing evidence-based services designed to meet each patient's and family caregiver's goals, improve their health outcomes and quality of life, and interrupt patterns of frequent acute care use. After patients were discharged to their homes, the TCNs' involvement throughout the transition from hospital to home provided a safety net designed to prevent medication and other medical errors and assure accurate transfer of information (Naylor, 2012).

As a result of advanced physical assessment skills, including expertise in evaluating responses to therapy, TCNs' were able to identify early signs of problems such as impending volume overload and, in collaboration with patients' physicians, implement strategies to prevent the onset of symptoms or to minimize their effects. Unless working under specific guidelines unique to treating physicians, the TCNs collaborated with each patient's physician regarding adjustments in medications and other therapies. Face-to-face interactions with the patient's physician during the hospitalization and initial follow-up visit (aimed at promoting continuity of care) helped to foster collaborative relationships. In collaboration with physicians, TCNs were able not only to teach patients and caregivers about early symptom recognition, but also to coach them regarding effective treatment, such as the optimization of their medications including titration of diuretics when necessary. Although the TCM is nurse led, a multidisciplinary approach is used that includes physicians, nurses, social workers, discharge planners, pharmacists, and other members of the health care team. Implementations of tested protocols are used with a unique focus on increasing patient's and caregivers' ability to manage their own care (Naylor, 2012).

Naylor and colleagues have completed several multisite NINR-funded randomized clinical trials (RCTs) consistently demonstrating the effectiveness of the TCM in the cardiovascular population with advancing comorbidities including heart failure. The model was found to improve post-discharge health outcomes, including physical function, quality of life and safety. Unnecessary emergency room visits and avoidable re-hospitalizations for primary and comorbid conditions were prevented. The RCTs demonstrated that, for elders with heart failure (HF), the NP intervention was effective in increasing the length of time between hospital discharge and readmission or death, reducing readmissions, and decreasing overall healthcare costs. Intervention patients also experienced some improvement in quality of life, physical function, and patient satisfaction. The TCN reduced re-hospitalization rates more than 20%—lowering Medicare costs by roughly US $5,000 per patient over the course of a year. While HF was the primary reason for enrollment in these studies, optimal health outcomes demanded a strong focus on integrating management of comorbid conditions and other long-standing health problems. A comprehensive transitional

care intervention for elders hospitalized with heart failure demonstrated an encouraging potential of NP care for improving clinical and economic outcomes. (McCauley, et al, 2006; Naylor, et al., 2004).

Nurse Practitioner Transitional Care and Care Coordination in Primary and Palliative Care-

Research, although limited, has shown that oncology nurse practitioner (ONP) patient navigators improve clinical outcomes (Campbell, Craig, Eggert, & BaileyDorton, 2010; Johnson, 2015; Rosales, et al., 2014). In the USA about 14 million people have had cancer, and 1.6 million new cases are diagnosed each year; incidence is forecasted to rise to 2.3 million new diagnoses per year and the number of cancer survivors in the US is projected to increase to 18 million by 2022 (Institute of Medicine, 2013). The healthcare reform legislation of 2010 Patient Protection and Affordable Care Act have addressed the need for patient navigation programs. Defining the process of ONP patient navigation is the initial step toward achieving standardized outcome measures and ensuring high-quality cancer care.

An exploratory study using grounded theory approach was performed to determine what processes are used by ONPs when navigating care for patients with cancer. This exploratory study relied on three interviews to define the processes that ONP patient navigators incorporated in their clinical care. Navigation processes for ONPs included fielding telephone calls, supportive processes, care coordination, tracking, and moving patients through to survivorship care (Johnson, 2016). The processes were identified as Navigation Processes Early Involvement: a major goal for this initial encounter was to gather information for the physician regarding the tests and results of the cancer staging, as well as to ensure that tests were scheduled for the staging workup. Aligned functions in both a traditional NP role and a navigator role, was the ONP role consisted of a scheduled clinic visit performing any type of work within the scope of practice of a NP, which entails using the nursing process. Some navigation processes were common in all three ONP interviews. The fielding telephone call processes were varied and included telephone checks, call-backs, post-surgical issues, explanation of pathology findings, follow-up care, and directions for survivorship care. The supportive processes provided by ONP patient navigators were tailored to each patient. All three of the ONP patient navigators described participating in care coordination, such as attending weekly tumor board conferences, presenting information regarding each patient's status, and gathering information about each patient for the multidisciplinary meeting. In regards to survivorship care, the goal for the navigation process was to move patients through the diagnostic and treatment phases and into survivorship care (Johnson, 2016).

Nurse Practitioner Transitional Care and Care Coordination in Geriatrics

Evercare is another NP care coordination model that has also been reported in the nursing literature. Evercare is an integrated long-term care program that addresses the problems of the fragmented health and long-term care system by creating a single program where persons can access all their

health and long term care needs. The goal of Evercare is to deliver higher quality, broader, more personalized and easier to use services through a seamless, integrated system. Evercare is designed to improve health outcomes through the coordination of a wide range of medical and nonmedical support services for seniors and persons with disabilities). The emphasis of the program is on serving persons in less costly settings instead of nursing homes. This approach saves Medicaid and Medicare (dual eligible) money by actively managing chronic illnesses and conditions, and thereby reducing avoidable emergency room visits and hospitalizations. Equally important, integrated long-term care programs delay or reduce the need for care in a nursing home setting. The Evercare program is sponsored by United Health Care insurance company, which leads the field in collaborative NP and physician driven primary care models in nursing homes (Evercare, 2006).

Nurse Practitioners performing care coordination from Evercare have also consulted the elderly patients in nursing homes. Abdallah, Fawcett, Kane, Dick, & Chen, (2005) identified a comprehensive list of NP practice activities performed by NPs working in United Health Care's Evercare program. The Evercare Nurse Practitioner Role and Activity Scale (ENPRAS) was developed to measure the frequency of the performance of role activities by Evercare NPs who provide primary care to nursing home residents. One hundred and thirty-one ENPRA items were identified through telephone interviews, participant observation, and a focus group. The roles were that of collaborator, clinician, care manager/ coordinator, coach/ educator, and counselor. The ENPRAS was reported to have adequate internal consistency, reliability, content validity, and construct validity (Evercare, 2006).

Another NP led care coordination study model was conducted by Enguidanos, et al. (2012) which included a randomized controlled trial to evaluate the impact of a brief nurse practitioner (NP) intervention on care transitions among older hospitalized adults discharged to home (N = 199). Immediately following discharge, participants randomly assigned to the intervention received up to three home visits and two telephone calls from a registered NP that included medication review, care coordination, assessment of medical care needs, and brief coaching in self-management skills. Usual care participants received all standard medical care, including access to case management services. Intervention participants reported improved satisfaction with medical care ($p = 0.008$) and self-efficacy in managing medical conditions ($p = 0.001$) and had fewer primary care visits ($p = 0.036$) but no change in hospital readmissions at 6 months following enrollment. These findings suggest that intervening at the point of transition may extend the reach of the primary care physician by improving patient outcomes through nursing support at a high-risk period of care—the transition from hospital to home.

Nurse Practitioner Transitional Care and Care Coordination in Psychiatry

Adults with severe psychiatric disorders have excess medical morbidity and mortality as compared to the general population (Piatt, Munetz, & Ritter, 2010).

Integrated medical and behavioral health care has been found to improve outcomes for this population (Lawrence & Kisely, 2010; Woltmann, et al., 2012); yet their ability to access and interact with the medical care system is often compromised due to personal, provider, and system factors which result in inferior quality healthcare and consequently, poor health outcomes. For example, adults with severe psychiatric disorders often face motivational and cognitive challenges to access and communicate their concerns to health providers and to act as their own advocates in the complex medical arena (Lawrence & Kisely, 2010).

Solomon, et al., (2014) adapted an evidence-based transitional care model as a 90 day intervention for older adults being released from acute care hospitals for patients with serious mental illness and medical co-morbidities being discharged from two psychiatric units of an acute care hospital and evaluated implementation challenges. An advisory group (AG) of community stakeholders assessed barriers and facilitators of 90-day transitional care intervention delivered by a psychiatric nurse practitioner (NP) in the context of conducting a pilot randomized controlled trial. The transitional care and care coordination NP model consisted of the NP seeing the patient within 48 hours of discharge in their home with the family caregiver and providing education and support to family managing the patient's illness. The NP engaged in outreach, goes to primary care appointments with the patient and is available seven days per week by phone during the intervention period The essential elements of the transitional care model as delineated by Naylor, et al. (2013) where inherent in this study which are: 1. coordination of care by an NP; 2. a plan developed prior to hospital discharge; 3. Home visits by NP for approximately 90 days post-hospital discharge and available 7 days a week; 4. coordination with physicians in community, including accompanying patient on these visits; 5. inclusive focus on health needs of patient; 6. involvement of both patient and family in patient care through educating and supporting them; 7. early detection and quick "response to health care risks and symptoms"; 8. patient, family caregiver, and providers function as a team; 9. collaboration of nurse and physician; and 10. information sharing with and among all members of the team.

Minutes of AG and case narratives by NP of 20 intervention participants were content analyzed. Patients with immediate and pressing physical health problems were most receptive and actively utilized the service. The transitional care NP frequently managed relational conflicts and housing problems. Approximately two-thirds of the hospital readmissions were associated with unstable living situations and relational conflicts. A third of participants changed their housing during the 90 days of the transitional care intervention. Provider barriers consisted of communication and privacy issues making it difficult to contact patients in mental health facilities. In contrast, the NP was accepted and valued in the physical health arena. Psychosocial needs and relationship issues were demanding, and the investigators recommended a team approach for the transitional care model with the addition of a social worker, peer provider, and consulting psychiatrist for severely mentally ill patients being released from an acute physical health hospitalization

(Solomon, et al., 2014).

Globalization of the role of the NP in transitional care and care coordination

Countries have implemented advanced practice nursing roles including NPs in response to concerns about the delivery, quality and safety of patient care (Kleinpell, et al. 2014). The International Council of Nurses (ICN) "A Nurse Practitioner/Advanced Practice Nurse is a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice" (International Council of Nurses, 2009). The current USA healthcare imperative for improved quality and cost-effective care has led to innovative patient centered transitional care and care coordination models that optimizes environments for APRNs, specifically NPs, to showcase their contributions to universal practice. Can globalization of these NP care coordination models be translated to other countries?

In many countries, healthcare provision is constantly responding to changes in demographics, politics economics, technology, and consumer knowledge and expectations. Rafael Lozano, Mexico National Academy of Medicine and Institute for Health Metrics and Evaluation, spoke of his experience over many years of attempting to build an evidence base for health care reform in Mexico. Lozano mentioned several health trends seen in many countries, and the reasons why current health systems have difficulty addressing these trends. One is the demographic transition that is shifting the disease burden from children to adults. Unprecedented changes are occurring worldwide as fertility and mortality rates decline in most countries and as populations' age. This leads to a larger fraction of disease burden stemming from chronic health conditions. These changes affect individuals, families, governments, and private-sector organizations as they seek to answer questions related to health care, housing, social security, work and retirement, caregiving, and the burden of disease and disability. The corresponding disability transition is shifting the burden of disease to conditions that cause disability. This highlights a risk transition shifting the major risk factors from those of poverty to those associated with lifestyle. (U.S. Department of Health and Human Services, 2011).

Global countries, such as Central and South Americas may benefit from embracing educating and training advance practice nurses to become NPs and be leaders in global healthcare. A coordinated and integrative active role in international global advancing the nurse practitioner nursing education and global healthcare leadership skills between countries can enhance this work. As an illustrative example, a joint collaboration between nursing leaders from the European Union and the United States under the Atlantis Program, developed a Global Nursing Leadership Toolkit, to help nurses become effective leaders. The toolkit included key benchmarks that the Atlantis partners identified as being important for global nursing leaders to demonstrate—moral and ethical agency, personal and interpersonal qualities, strategic and systems skills, knowledge management and decision-

making skills, patient safety, workforce development, and quality improvement (University of Washington, 2012). This international copartnership global nursing leadership framework can be transformed to explore the establishment of a bi-continental academic training program of advance practice nurses, including NPs, delivering transitional care and care coordination models.

As highlighted, the USA has leveraged NPs in transitional care and care coordination models in the heart failure, geriatrics, mental health and palliative care with effective outcomes that increases the health of population, increases quality and enhances patient experience when transitioning across health care settings. In essence, this transitional care and care coordination NP models basically addresses and encompasses the navigation of chronic disease management. As the local and global population ages and chronic disease management becomes the greatest healthcare challenge, NPs trained and involved in transitions of care and care coordination models will become a very important commodity in a global triple aim population health approach. Additional global nursing leadership alliances are needed between academic and healthcare delivery systems, similar to the Atlantis Program, to build the nursing capacity of transitional coordinated care.

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