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Utilization of registered nurses in primary care teams: A systematic review

Allison Norful[a,*], Grant Martsolf[b], Krystyna de Jacq[c], Lusine Poghosyan[c]

[a] Columbia University School of Nursing, Center for Health Policy, 617 West 168th Street, New York, NY 10032, United States
[b] RAND Corporation, United States
[c] Columbia University School of Nursing, United States

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ABSTRACT

Background: Registered nurses are increasingly becoming embedded in primary care teams yet there is a wide variability in nursing roles and responsibilities across organizations. Policy makers are calling for a closer look at how to best utilize registered nurses in primary care teams. Lack of knowledge about effective primary care nursing roles and responsibilities challenges policy makers' abilities to develop recommendations to effectively deploy registered nurses in primary care needed to assure efficient, evidence-based, and quality health care.
Objective: To synthesize international evidence about primary care RN roles and responsibilities to make recommendations for maximizing the contributions of RNs in team-based primary care models.
Design: Systematic review.
Data sources: The Meta-Analysis and Systematic Reviews of Observational Studies framework guided the conduct of this review. Five electronic databases (OVID Medline, CINAHL, EMBASE, PubMed and Cochrane Library) were searched using MeSH terms: primary care, roles, and responsibilities. The term "nurs*" was truncated to identify all literature relevant to nursing.
Review methods: The initial search yielded 2243. Abstracts and titles were screened for relevance and seventy-one full text reviews were completed by two researchers. Inclusion criteria included: (1) registered nurses practicing in interprofessional teams; (2) description of registered nursing roles and responsibilities; (3) primary care setting. All eligible studies underwent quality appraisal using the Integrative Quality Criteria for Review of Multiple Study Designs tool.
Results: Eighteen studies met eligibility across six countries: Australia, United States, Spain, Canada, New Zealand, and South Africa. Registered nurses play a large role in chronic disease management, patient education, medication management, and often can shift between clinical and administrative responsibilities. There are a limited number of registered nurses that participate in primary care policy making and research.
Conclusion: Integrating registered nurses into primary care has the potential to increase patient access to a primary care provider because registered nurses can supplement some of the provider workload: they renew prescriptions, address patient questions, and provide patient education. Clear practice protocols and nursing policy should be written by registered nurses to ensure safe, and effective nursing care. The use of a medical assistant or nurse's aide to perform non-nursing tasks allows registered nurses to take on more complex patient care. Future research should expand on emerging payment models for nurse-specific tasks.

What is already known about the topic?

- A current global healthcare professional shortage requires the best utilization of the existing primary care workforce, including registered nurses, that are needed to meet the demand for effective primary care services.
- RNs are increasingly being embedded into primary care teams and policy makers and administrators are seeking evidence to optimally utilize registered nurses in these teams.

What this paper adds

- This review demonstrates that nurses play a vital role in chronic disease management, care coordination, pharmaceutical management, and contributions to pediatric and women's health care delivery.
- The use of clearly delineated protocols and standardized responsibilities increase the number of tasks that nurses can perform without provider oversight, subsequently reducing primary care provider

* Corresponding author.
E-mail address: aan2139@cumc.columbia.edu (A. Norful).

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strain and increasing patients' access to care.

1. Introduction

Globally, the demand for primary care services is increasing as the population is aging and many patients live longer with multiple chronic diseases. Patients require on-going primary care services, such as monitoring of their conditions, and follow up (Wu and Green, 2000). In addition to the increased demands for health care services, many countries are facing severe shortages of primary care providers. The World Health Organization estimates that 4.3 million physicians, midwives, nurses and support workers are needed to meet the health care needs of patients worldwide (World Health Organization, 2006). The United States (US) alone will need an additional 52,000 primary care physicians by 2025 to meet the demand for primary care services (Petterson et al., 2012). In Spain, almost 70% of all health care is delivered in the primary care setting yet there are twice as many physician specialists as primary care physicians (Barber and López-Valcárcel, 2010; Borkan et al., 2010; Ministry of Health and Social Policy et al., 2010). The increased demand for primary care services has prompted national policymakers, such as those in the United Kingdom, to allocate substantial funding toward ensuring adequate primary care delivery by 2020 (Schilling, 2015).

Traditionally, primary care delivery models rely on physician workforce to deliver care to patients. In such models, patients are typically assigned to a single primary care provider, also known as a general practitioner, who is responsible for a range of patient care activities including the assessment, diagnosis, and treatment across multiple visits, as well as helping patients navigate throughout the healthcare system (Haggerty et al., 2003). While these models have been in practice for a long time, such models of care delivery are no longer adequate. For example, one study conducted in the United States estimates that a single primary care provider working alone would need an estimated 21 h per day to fulfill all recommended patient care guidelines (Yarnall et al., 2009). Thus most recommendations that focus on improving patients' access to care, and promote the quality of patient care, emphasize the importance of team-based care delivery models (Colwill et al., 2008; Green et al., 2013; Saba et al., 2012). In such models, clinicians from various disciplines, including physicians, nurses, pharmacists, social workers and others, collaborate to deliver care to patients.

In recent years, researchers investigated the composition and performance of interprofessional primary care, specifically interprofessional teams composed of physicians, nurse practitioners, physician assistants, and pharmacists, to research their delivery of patient care (Dey et al., 2011; Lenander et al., 2014; Proia et al., 2014). Today registered nurses (RN) are increasingly embedded into interprofessional primary care teams (Ladden et al., 2013). The integration of nurses into primary care teams shows a promise for enhanced patient care and improved clinical outcomes (Condon et al., 2000; Halper, 2009; Holtrop et al., 2008; Proia et al., 2014). However, health care organizations employing RNs often struggle with differences in nursing roles and titles. RNs are licensed professionals, that require a baccalaureate degree for entry into practice in some countries (Rheaume, 2003). In other countries, such as the US, RNs can practice with an associate or baccalaureate degree and are eligible for the same RN licensure. Internationally, RNs who are specifically employed within primary care in Australia, also called general practice, are referred to as "practice nurses" (Price, 2007). In contrast, "practice nursing" in the United Kingdom is an advanced practice nursing role, requiring Master's degree education, and is similar to a nurse practitioner role in the US and Canada (Atkin and Lunt, 1996). In South Africa, nurses working in primary care are called "community nurses" (Leech et al., 2007). The lack of consistency in nursing education and titles makes it challenging to define appropriate nursing tasks and complicates the description of nursing functions in primary care teams (Price, 2007). While nursing roles and responsibilities in acute care teams have been clearly defined, there is still a great variability in nursing roles and responsibilities in primary care (Akeroyd et al., 2009; Baggs et al., 1999; Smith et al., 2006).

Policy makers and health care administrators are searching for evidence to better understand the roles and responsibilities of RNs in primary care. A comprehensive understanding of RN skills and impact on patient care will help to develop care delivery models that effectively utilize RN qualifications to increase the primary care capacity (Keleher et al., 2009). For example, policy organizations, such as the American Academy of Nursing, partnered with the Josiah Macy Foundation, are calling for effective integration of RNs in primary care (Josiah Macy Foundation, 2016). The objective of this review is to synthesize international evidence about primary care RN roles and responsibilities to make recommendations for maximizing the contributions of RNs in team-based primary care models.

2. Methods

2.1. Literature search

The Meta-Analysis and Systematic Reviews of Observational Studies (MOOSE) framework guided the conduct of this review (Stroup et al., 2000). The primary researcher has expertise in health services research and is a board-certified nurse practitioner (advanced practice registered nurse) practicing in primary care. Two researchers have expertise investigating health care and nursing policy, organizational structures in health care settings, and practice environments of health care providers, both of whom are doctoral prepared RNs. A fourth researcher has expertise in mental illness workforce research and is a board-certified psychiatric nurse practitioner. In an effort to identify all eligible studies, a comprehensive search was conducted across five electronic databases including OVID Medline, CINAHL, EMBASE, PubMed and Cochrane Library; and Google Scholar for gray literature including abstracts, conference proceedings, and unpublished manuscripts. We conducted our literature search from November 2015 to January 2016. No time limits were applied during the search. MeSH terms (Medical Subject Headings) were searched using boolean terms: "primary health care" AND "nurs*" AND ("roles" OR "responsibilities"). The term "nurs*" was truncated and exploded to identify all literature relevant to "nurses" or "nursing" with potential eligibility.

2.2. Inclusion and exclusion criteria

The following criteria were applied during the literature search.
Inclusion criteria

- Studies that included the use of registered nurses practicing in interprofessional teams.
- Studies that provided a description of nursing roles and responsibilities.
- Studies that were conducted in a primary care setting.

Exclusion criteria

- The nursing role description was only specific to advanced practice nursing, such as nurse practitioners.
- The role description was specific to other medical disciplines, such as physicians or physician assistants.
- The study was conducted in acute care only.
- The study examined an ambulatory setting other than primary care, such as a specialist's office.

2.3. Data extraction and synthesis

Following the identification of eligible studies, we condensed each