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## Primary Care and Non-Physician Clinicians

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### 1. Introduction

The entry point for most people into any healthcare system is primary care. Not surprisingly, primary care-oriented disorders make up the vast majority of all medical conditions seen by healthcare providers. Starfield (1994) pointed out that countries whose health systems are oriented toward primary care achieve better health levels, higher satisfaction with health services among their populations, and lower expenditures in the overall delivery of health care. The American system relies heavily on both physicians as well as nonphysician clinicians to deliver primary care. In the US this cadre of providers includes doctors, PAs and nurse practitioners (NPs).

A substantial amount of research documents that physician assistants (PAs) and NPs are ideally suited and well qualified to deliver primary care services. PAs are trained to diagnose and treat most general medical conditions and a substantial proportion of clinical PAs work in the primary care disciplines. In terms of medical specialties, American primary care is defined as family medicine, general internal medicine, general pediatrics, and sometimes obstetrics and gynecology (as also identified as *women's health*).

Since 1997 the United States has witnessed a decline in primary care physicians (Bodenheimer 2009). This decreasing trend of graduating medical students entering the primary care field has opened more opportunities for PAs and NPs. The education foundation of PAs is primary care and as such they continue to grow as an appealing complement for providing primary care services. This trend will remain as medical school becomes increasingly more expensive; students facing debt pressures select specialty areas because a primary care physician's salary is substantially less than that of a specialist such as a surgeon. As the primary care physicians continue to be overworked and highly sought out by patients, the field requires a significant boost in support and supply. We argue on the basis of simple supply and demand the job outlook for PAs in primary care will continue for a few decades.

To most clinicians, the term *primary care* is synonymous with ambulatory care because less than 0.5% of all conditions seen in primary care result in hospitalization. In many countries, general medicine (also known as general practice) serves as the entry point to the health

system. Countries with well-established primary care systems have doctors serving as “gatekeepers,” meaning that patients do not visit specialists, nor are they admitted to hospitals without being referred by general practice doctors. To some, “gatekeeping” represents a negative element of healthcare delivery systems because patients may be denied needed care. The practice, however, is associated with the avoidance of unnecessary procedures and overtreatment, thus facilitating the appropriate distribution and utilization of limited resources (Franks et al, 1992). In the United States, people can access some specialists directly (e.g. dermatology), which may lead to increased cost and fragmentation of services.

The major focus of medical education for PAs, doctors, and most nurse practitioner (NP) is primary care. Curricula for the would-be primary care clinician are organized so that the graduate can manage most medical conditions in a typical community with a normal population distribution. In many instances, primary care forms the foundation on which other areas of medicine rest. The student entering medicine learns the principles and practice of general medicine. These principles are often incorporated within other specialties, and in turn, specialties develop principles that are adopted in primary care. To understand this crucial role, which PAs and NPs have increasingly helped to define, we first define *primary care*.

## 2. Primary care defined

Primary care is the provision of integrated, accessible healthcare services by clinicians who are responsible for meeting most personal healthcare needs, developing sustained partnerships with patients, and practicing in the context of family and community. Definitions of primary care typically focus on the type or level of health services such as preventive, diagnostic, and therapeutic services; health education and counseling; and minor surgery, although it is possible for specialists to provide primary care. For example, a cardiologist who offers advanced specialized care for myocardial conditions will also provide health education and preventive counseling.

The most commonly accepted definition of primary care is medical care services that are characterized by the following attributes:

- first-contact care
- longitudinality
- coordination
- comprehensiveness (Starfield, 1993)

Primary health care providers are considered to be the gatekeepers of medicine. In an ideal primary health care system, patients would first have contact with their provider before seeking specialty services. This *first-contact care* is essential for the physician to perform an initial assessment and how to best treat or direct the patient's care. Because there are constraints on the American system of access to care, alternatives to primary care occur. Overflow in US emergency rooms is partly attributed to the fact that the patient cannot access this first step in medical care services.

Another important attribute to holistic primary care service is *longitudinality*, or care provided continually for the patient regardless of the patient's state of health. Annual

physicals are an example of this attribute, where primary health care providers can monitor patients over time (Starfield 1979). Longitudinal care not only allows for the primary health care provider to analyze improvements and/or deficiencies in patient health, but also serves as a means for provider and patient to build strong rapport through these annual exams.

*Coordination* builds off the first attribute in that it utilizes the initial findings to then refer the patient to a trusted partner of the desired service. The primary health care provider must be knowledgeable of the available resources in order to successfully coordinate with the partnering provider and patient. Seamless integration of referring patients and working with specialty providers will lead to a successful collaboration in assessing the needs of the patient (Starfield 1979). Working together in this manner overlaps with the last attribute, comprehensiveness.

*Comprehensiveness* is difficult to achieve, but necessary to strive for in order to provide the best care for the patient. The primary health care provider is not simply a gatekeeper, but essentially a jack-of-all-trades. As each patient presents health-specific issues, the provider will serve as an educational resource, a prevention advocate, a supporter for positive change in healthy behavior and as a trusted clinician at any one point in time. Recognition of the problem is crucial in both coordinating with other providers and ensuring a complete standard of care (Starfield, 1979).

These four attributes (first-contact, longitudinality, coordination, comprehensiveness) also serve as measurement tools when assessing the quality of primary care service provided. Detractors to the quality of care can often be attributed to inaccessibility, both perceived and actual inaccessibility, as well as poor coordination with other providers (Starfield 2005). Poor coordination can often lead to mistrust in the primary care provider, diminishing the likelihood of longitudinality and thus an incomprehensive level of care.

Primary care is distinguished from two other classifications of healthcare delivery: secondary and tertiary care. *Secondary care* is usually thought of as short-term service delivery, infrequent consultation from a specialist, or surgical or other advanced interventions that primary care clinicians are not equipped to provide (Shi & Singh, 2008). This type of care includes hospitalization, routine surgery, specialty consultation, and rehabilitation. *Tertiary care* is regarded as the provision of care for complex conditions and usually involves an institution with advanced technology and specialty and subspecialty services (Hooker 2008). Examples include organ transplants, burn centers, cardiothoracic surgery centers, and advanced trauma centers.

The World Health Organization (WHO) Meeting on Primary Care, Family Medicine/General Practice in Barcelona, Spain, in 2002 proposed a definition of *primary care*: "Primary care refers to a span or an assembly of first-contact healthcare services directly accessible to the public." Accessibility is an important aspect of primary care to consider because it directly relates to the health outcome of the patient and cost of care. Researchers at the 2003 WHO conference believe an increased supply of primary care physicians would lead to a healthier population (Starfield 2005). This would help correct for the uneven distribution of physician specialty fields, thus increasing accessibility and decreasing health care cost.

Essentially, primary care strives to be as accessible as possible to the community it serves. This emphasis on accessibility has led to the growth of community-oriented primary care

(COPC). COPC serves as the bridge between clinical medicine and public health. COPC is no stranger to the field of primary care, with its roots dating back to the 1940s, but due to the attention regarding increased health outcomes related to COPC systems, primary care strives to adopt this focus (Gofin 2005). This community-based effort encompasses the four attributes of primary care: first-contact care, longitudinality, coordination and comprehensiveness.

Primary care (as opposed to primary *health* care) has gained increased attention since the new century and raised several questions. For example, how does it fit into the healthcare delivery system? Is it the same as primary health care? What strategies should be used to link primary care with other levels of care? What are the implications of developments in technology for primary care functions and professionals? These are some of the issues many countries in the WHO European Region are facing when trying to develop primary care as part of the overall healthcare system.

The participants of the 2002 WHO conference in Barcelona concluded that primary care is part of the provision of healthcare services and has to be looked at in the context of the overall services, not in isolation. In light of the confusion about commonly used terms—notably *primary healthcare*, *primary care*, *primary medical care*, *general practice*, and *family medicine*—the consensus was that a clear distinction between *primary health care* (as presented in the Declaration of Alma-Ata in 1978) and *primary care* (which refers to local level healthcare services) was necessary. More work in this area will emerge before the end of this decade.

### 3. Primary care ecology

Human medical ecology may be defined as the study of relationships between people and the medical care system. One of the most famous and revealing studies of primary care was conducted by Kerr White and colleagues, titled “The Ecology of Medical Care” (White, Williams, & Greenberg, 1961). They drew a portrait of people, illness, and medical care that assumed a typical population of 1,000 citizens in an average month. The results were drawn from 1,000 non-institutionalized adults; 750 were symptomatic for some illness each month, 250 received care from doctors in the office setting, 9 were hospitalized, 5 were referred to a specialist, and no more than 1 was admitted to a tertiary medical center or hospital. The authors were trying to make the point that health policies in the United States tended to overemphasize hospital-based care and that the common problems that people had most of the time were relegated to the underfunded, underappreciated system of primary care.

Forty years later, the study was replicated with expanded and updated data (Green, 2001). The results were remarkably similar. In an average month, again using 1,000 men, women, and children in the United States, about 800 were symptomatic, 327 considered seeking medical care, 217 visited a doctor, 65 visited a provider of complementary and alternative medicine, 21 visited a hospital outpatient clinic, 14 received care in their home, 8 were hospitalized, and no more than 1 was hospitalized in an academic medical center. These findings indicate the relative occurrence and severity of health problems in the U.S. population and the choices that persons make regarding the medical care system. The 2001 findings reaffirm the portrait of a health system that has a well-funded, high-technology tertiary health component that serves only a fraction of the ill population that needs a more extensive and better supported system of primary care (Green, 2001).



#### 4. Effectiveness

Effectiveness of primary care delivery depends, at least in part, on using the correct mix of personnel. Starfield (1994) showed that the division of labor and economy of scale maximizes the clinical capabilities of healthcare professionals. In primary care practice, it is neither necessary nor particularly efficient for each patient to be seen by a physician. Since PAs are, by definition, physician-supervised clinicians, the very nature of their clinical role is to work with doctors in collaborative provider teams. To be effective, the PA needs to provide quality care to similar patients for similar diagnoses that result in outcomes comparable to those of a doctor. Several studies have been conducted which compare the care provided by PAs and doctors on quality measures including processes of care and/or patient outcomes for specific diagnoses.

#### 5. The primary care workforce in the US

The primary care workforce in the United States consists of primary care physicians, nurse practitioners (NPs), and physician assistants (PAs). Are PAs and NPs the future of primary care practice? Given the concurrent trends of increasing calls to strengthen the primary care workforce, declining physician attraction to primary care residency training, and increasing reliance on PAs and NPs to deliver primary care services, there is evidence to support this assertion. A recent data report from the National Center for Health Statistics provides validation of this latter trend using information from hospital outpatient departments. The data brief (Hing, 2011) reveals that hospital outpatient department visits handled by PAs and NPs (and other advanced practice nurses [APN]) increased from 10% in 2000 and 2001 to 15% in 2008 and 2009. This suggests a wider degree of utilization of PAs and NPs, particularly in settings where a good deal of primary care services are delivered. PA and NP involvement in providing services varied by location, with these providers handling 36% of visits in nonmetropolitan centers versus only 6% of visits in urban hospitals. Also, the size of the hospital outpatient department was related to whether patients were seen exclusively by a PA or NP, with 24% of such visits in hospitals with fewer than 200 beds, and only 10% in facilities with 400 or more beds. PAs and NPs also delivered care more often in clinics associated with nonteaching hospitals and handled a higher percentage of Medicaid, CHIP, or uninsured patients, as well as younger patients. These data suggest that PAs and NPs are used to a greater degree in smaller facilities located in non-urban areas to serve populations that may be otherwise medically underserved, trends that are consistent with the original policy intentions of their creators. The NCHS report confirms that PAs and NPs "continue to provide a critical health care function" by administering care in communities that are prone to physician shortages, including in rural, small, and nonteaching hospitals (Hing, 2011).

The data brief results also provide a small window into the content of care delivered by PAs and NPs, an area in which the literature is sparse. PAs and NPs saw a higher percentage of visits where a new problem was the major reason for the visit (22%) compared with visits for a chronic condition (11%) or pre/postsurgery care (6%). Of particular interest to some is the finding that PAs and NPs saw a higher percentage of preventive care visits (17%) compared with visits for a routine chronic condition or pre/postsurgical care. It has long been speculated that PAs and NPs certainly have the potential to provide care that is more prevention-oriented than physician care, and it appears that they may be fulfilling this potential. Further delineation of this trend is warranted. Practicing preventive medicine to a

greater degree may offer even further justification not only for the widespread utilization of PAs and NPs in primary care but also for policy changes leading to greater levels of reimbursement for preventive services by third-party health payors.

While the absolute number of primary care physicians, nurse practitioners and physician assistants is expected to rise in the coming years, these changes are not expected to be sufficient to meet the demands of an aging population, changes in service use, and trends connected with a major expansion of insurance coverage. The best estimates of the primary care provider supply continue to indicate that there are significant shortages. According to new numbers from the DHHS Agency for Healthcare Quality and Research, as of 2009, only about one-third of the Nation's 625,000 practicing physicians, or about 208,000 providers, work in primary care (AHRQ, 2011); and, as of 2010, about 43.4 percent or 30,300, of the estimated 70,333 PAs in practice, and 52% or 55,626 of the estimated 106,000 NPs in practice, are currently in primary care (AHRQ, 2011). It is believed that these numbers are insufficient to meet current and future demands for primary care services.

Longer term trends point to the establishment of PAs and NPs as the principal front-line providers of primary care services with physicians assuming more managerial and executive functions as well as a greater focus on inpatient specialty practice. A former Deputy Dean and Professor of Medicine at Yale School of Medicine recently observed that "in the decades ahead, it is likely that the main role of the generalist physician will be to supervise those providing primary care and to personally care for patients with complex illnesses who are hospitalized, an idea already well established as the hospitalist movement." He adds further that "the challenge will be to successfully integrate a new primary care system that relies more heavily on nurses and PAs with specialty-based medicine, hopefully through health care reform and the help of a universal electronic medical record" (Gifford, 2011). When it comes to primary care, clearly PAs and NPs are the health care providers who's time has come and in the future will only increase in utilization and influence.

NPs and PAs are health professions begun in the U.S. in the 1960s in response to a shortage and uneven distribution of physicians. They are licensed in all States, but there is considerable variation in the laws governing their scope of practice. They play important roles in many health care fields including primary care.

The Centers for Medicare & Medicaid Services maintains the National Provider Identifier (NPI) dataset, which listed 93,000 practicing NPs and 63,000 practicing PAs in 2009. While this estimate represents approximately 10,000 fewer practicing PAs than projected by the American Academy of Physician Assistants (AAPA), it represents approximately 10,000 more NPs than most other recent estimates. Unfortunately, there is no consistent and comprehensive data source for NPs, which hampers understanding of how many are clinically active, what specialties they practice, and in what settings. It is estimated that in 2011, there are roughly 80,00 PAs in active clinical practice with 34% in primary care specialties.

To further inform policy discussions around the U.S. primary care workforce, the Agency for Healthcare Research and Quality's (AHRQ) Center for Primary Care, Prevention, and Clinical Partnerships identified the number of primary care providers in 2010: *The Number of Practicing Primary Care Physicians in the U.S.*, which reports that, of the 624,434 physicians in

the United States who spend the majority of their time in direct patient care, slightly less than one-third are specialists in primary care.

## 6. The future of primary care

In the US, states with a higher proportion of primary care physicians to population consistently report a population with healthier outcomes (Starfield 2005). Factors including inaccessibility, cost, changing health care system and decrease supply of primary care physicians most likely contribute to decreasing ratios of primary care providers to population. PAs and NPs will play an integral role as the physician specialty gap continues to widen.

This relationship between primary care physician supply and health of the associated population is seen outside of the US as well. Studies similar to the one in the US was replicated in England and produced similar results, revealing an overall reduced mortality rate for areas with high ratios of primary care physicians. Similar results have been seen on a global scale, highlighting the healthcare gap between rural and urban areas.

## 7. Global growth of nonphysicians

The global expansion of physician assistants (PAs) and nurse practitioners (NPs) is a medical workforce trend that began in the 1970s but did not blossom until the turn of the century. As of 2012, at least 10 countries are in various stages of integrating PA and or NP-like medical care providers who function under the broad supervision of a doctor. Countries that have documented their development include Australia, Canada, England, the Netherlands, Scotland, South Africa, and Germany. Several of these countries have American-trained PAs working as expatriates and most have developed educational programs aimed at producing healthcare providers functioning as assistants to licensed physicians. Other countries with PAs and NPs, but less known in their development, include Ghana, Liberia, and India. Each country has made the PA a distinct entity within their health systems, each with their own cultural and educational influences shaping their roles. The PAs and NPs have common denominators:

They are semiautonomous clinicians who function under the supervision of a doctor, complementing their capacities to deliver healthcare services. Historical patterns suggest that the development and evolution of PAs and NPs in health systems follow similar steps, suggesting there are useful lessons learned in the utilization of nonphysician providers that may prove useful in improving the delivery of primary care services (Cawley and Hooker, 2003). Shortages of doctors, especially in rural areas and in primary care practice; rising healthcare costs; and increases in physician specialization have resulted in a number of countries looking to nonphysician providers (PAs and NPs) as augmenting forces to medical workforce problems. For instance, England faces a challenge as a result of meeting the European Union directive to reduce the number of hours house officers are permitted to work. Canada not only has doctor shortages, but also must continue to cope with healthcare access problems for many of its citizens, including those in rural areas. The Netherlands must meet rising numbers of older patients with chronic disease, multiple co-morbidities, and escalating costs of health care. These countries and others have turned their interests to

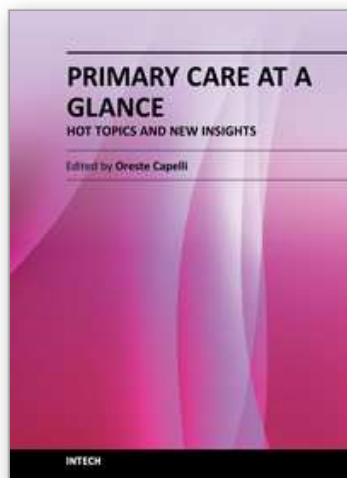


developing a U.S.-modeled PA and/or NP practitioner to work closely with the doctor and to improve access to care.

It is evident that primary care is an essential component of any health care system to ensure an appropriate standard of care for all populations. It is also evident that the supply of these health care providers has and will continue to decrease in the upcoming years. Additionally, the burden of increased responsibility for these physicians in recent years contributes to this trend of lacking primary care physicians (Bodenheimer 2009). Several questions remain regarding the future of the field. Ultimately, accessibility, the number of providers and the cost of primary care will dictate how primary care is provided in the future.

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## **Primary Care at a Glance - Hot Topics and New Insights**

Edited by Dr. Oreste Capelli

ISBN 978-953-51-0539-8

Hard cover, 446 pages

**Publisher** InTech

**Published online** 27, April, 2012

**Published in print edition** April, 2012

"Both among scientists and clinical practitioners, some find it easier to rely upon trivial explanations, while others never stop looking for answers". With these surprising words, Augusto Murri, an Italian master in clinical medicine, reminds us that medical practice should be a continuous journey towards knowledge and the quality of care. The book brings together contributions by over 50 authors from many countries, all around the world, from Europe to Africa, from Asia to Australia, from North to South America. Different cultures are presented together, from those with advanced technologies to those of intangible spirituality, but they are all connected by five professional attributes, that in the 1978 the Institute of Medicine (IOM)<sup>1</sup> stated as essentials of practicing good Primary Care: accessibility, comprehensiveness, coordination, continuity and accountability. The content of the book is organized according to these 5 attributes, to give the reader an international overview of hot topics and new insights in Primary Care, all around the world.

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In order to correctly reference this scholarly work, feel free to copy and paste the following:

James F. Cawley, Roderick S. Hooker and Diana Crowley (2012). Primary Care and Non-Physician Clinicians, Primary Care at a Glance - Hot Topics and New Insights, Dr. Oreste Capelli (Ed.), ISBN: 978-953-51-0539-8, InTech, Available from: <http://www.intechopen.com/books/primary-care-at-a-glance-hot-topics-and-new-insights/primary-care>

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