

Primary Care Providers

Literature Review

Introduction

The purpose of this literature review is to provide general information about primary care providers (PCPs) and the issues and challenges facing the profession. Research indicates that almost all adults (96%) say they would be somewhat or very likely to have their eyes examined if their PCP suggested they do so (National Eye Institute & Lions Club International Foundation [NEI/LCIF], 2007). Many causes of visual impairment are readily diagnosed, and at least 40 percent of blindness and visual impairment is treatable or preventable (Friedman, Congdon, Kempen, & Tielsch, 2004; Rahmani et al., 1996). Nonetheless, many people living in the United States, particularly older adults (Tielsch et al., 1995) and minorities (Sommer et al., 1991; Javitt et al., 1991), do not receive necessary eye care (Wang et al., 1994). A better understanding of the PCP profession is important when attempting to identify ways the primary care and eye health community can better work together.

Demographic information pertaining to PCPs as well as the traditional and non-traditional roles and responsibilities of PCPs are presented alongside challenges facing the profession and a description of the preventive services guidelines. Information concerning physician attitudes and opinions regarding eye health and preferred sources of information are also discussed.

Demographic Information

Demographic Profile of Primary Care Providers

As of 2000, there were an estimated 756,000 active physicians under age 75 who were practicing in the United States. Approximately 95 percent are M.D.s and 5 percent are D.O.s. Slightly over one third are generalists (family practice, general pediatrics, or general internal medicine) and the remaining two thirds are specialists (HRSA, 2006). Currently, one in four physicians is female. The fact that the proportion of new medical graduates who are female has risen from 10 percent to close to 50 percent during the past three decades contributes to this rise in female representation. While growth in female representation is a relatively recent phenomenon, it is predominantly male physicians who are nearing retirement age. One in three active male physicians is age 55 or older, while only one in eight active female physicians is age 55 or older. Female physicians are more likely than their male counterparts to choose non-surgical specialties and to spend fewer hours per year providing patient care. They are also less likely to work in rural areas, and they tend to retire slightly earlier (HRSA, 2006).

An estimated 94 percent of active physicians are engaged primarily in patient care activities, while the remaining 6 percent are engaged primarily in non-patient care activities such as administration, teaching, research, and others (HRSA, 2006). According to the 2004 National Ambulatory Medical Care Survey, there were 910 million annual visits made to physician offices, and 47 percent of these doctor visits were made to primary care physicians. During 2004, there was an average of 316 visits made to U.S. physician offices for every 100 persons. The most frequent, principal reason for a doctor's visit was for a general medical examination (Hing, Cherry, & Woodwell, 2006).

Almost 24,000 physicians complete their training through programs of graduate medical education (GME) each year. Before completing residencies and fellowships, new physicians must earn a four-year college degree and complete four years of medical education. Four out of five physicians completing GME are graduates of U.S. medical schools. Most are graduates of schools of allopathic medicine, which annually graduate approximately 15,000 to 16,000 M.D.s. This number has been relatively stable since 1980, and the baseline projections assume that the United States will continue to graduate approximately 16,000 M.D.s per year through 2020. Schools of osteopathic medicine graduate approximately 3,000 D.O.s per year, and the baseline supply projections assume that this number will steadily increase to approximately 4,000 per year over the next decade (HRSA, 2006).

With regard to race and ethnicity, many minority populations are underrepresented within the primary care profession. While ideally, racial or ethnic composition of the physician population should mirror the U.S. population, this representation has not been the case. African Americans, Hispanics, and Native Americans comprise 26 percent of the U.S. population, but only 6 percent of practicing physicians are African American, Hispanic, or Native American (AAFP, 2007). According to the 2003-2004 report on office-based physicians, 176,900 are White; 8,000 are African American; and 7,800 are Hispanic (Hing & Burt, 2007).

Work Setting

Physician offices, including primary care, are used most often for healthcare services. From 2003 to 2004, physicians reported an average of 73.7 office visits, compared to 12.7 visits reported at hospitals (Hing & Burt, 2007). Of the office-based physicians, approximately 38 percent work in solo practices, 54 percent in practices with two to 10 physicians, and 11 percent work in practices with 11 or more physicians. The majority of office-based physicians are owner or part owner of the practice. Primary care physicians are more often employees than owners of their practices, unlike their medical and surgical specialist counterparts (Hing & Burt, 2007).

According to the American Academy of Family Physicians, 90 percent of primary care physicians practice in an office setting and only 6.6 percent are in a hospital (2006). According to the 2007 DocStyles¹ Survey (a web-based survey of 1,500 primary care physicians) the majority describe their main work setting as a group practice (68%), with an average of 16 physicians per group practice. Although the majority of primary care physicians are office-based, hospitals are actively recruiting for family practitioners. Primary care physicians have been reducing their medical staff membership to lessen inpatient care and on-call burdens (AMA, 2006). In a 2005 survey, 43 percent of hospital recruiters specified they were engaging in family physician and generalist recruitment (AMA). Hospitals' aggressive recruitment strategies are a result of primary care physicians seeing fewer patients in hospitals (AMA).

Primary Care vs. Specialists

Specialties and subspecialties are becoming more popular with medical students. In 2004, the total number of physicians was 884,974, of which 33.5 percent were primary care physicians (AMA, 2006). Estimates from 2005 reveal that among active physicians, 306,100 had a specialty in primary care, while 511,400 had a specialty in something other than primary care (HRSA, 2006). Despite the smaller proportion of primary care physicians, the pool of primary care physicians has declined. In 2003, the number of U.S. medical student graduates who entered family medicine dropped to 1,234 ("The U.S. Primary Care Physician Workforce: Persistently Declining Interest in Primary Care Medical Specialties," 2003). In 2006, the numbers were still lower, as only 1,132 medical student graduates entered family medicine (Galzer, 2007).

Several theories have emerged to explain the influx of specialty physicians. One explanation is that the cost of tuition for private and public medical schools has increased substantially over the last 20 years. Costs for public medical school education have risen 165 percent, and private medical school education has escalated 312 percent ("Specialization in Family Medicine Education: Abandoning Our Generalist Roots," 2007). With academic debt skyrocketing, students are left with \$100,000 or more to repay in educational loans (Specialization in Family Medicine Education: Abandoning Our Generalist Roots," 2007). Consequently, physicians have become attracted to specializations where the pay is superior, leaving a rising shortage of primary care physicians. Such shortages will be further discussed under "Challenges for Primary Care Providers."

¹ Each year, Porter Novelli conducts a Web-based survey with primary care physicians and pediatricians. Questions were added in 2007 which assess physician attitudes and opinions regarding eye health. A report is forthcoming, however information from the survey data is provided within this literature review.

Primary Care Provider's Traditional Role and Responsibility

Hippocratic Oath

For the physician, the moral basis of scientific experimentation derives from the physician's oath, which perhaps is best summarized as the physician's commitment to place the patient's best interests above the interests of the physician. The physician freely and voluntarily professes the oath as a commitment to all of humankind. There is no greater good than upholding the best interests of the individual patient, who in their time of need look to their physician for comfort and healing. The oath is the fullest expression of a physician's humanity, their recognition that they are united with every one of their patients through their commonalities; sharing the same hopes, the same fears, and ultimately, the same fate (Coller, 2006).

One element for the basis of public trust in medical practice around the world concerns the fact that doctors are bound by a set of rules, by behavioral norms that go far beyond simple questions of manners and etiquette. These norms, a set of ethical principles laid out in the Hippocratic Oath, enable patients to expect specific standards of practice from their doctors. Current reality, however, is different, as medicine is no longer a single profession's enterprise. It is a complex construct in which doctors, nurses, and other health professionals work with patients and each other to help patients improve and protect their health. In addition to helping the individual, this construct has a role within society: to improve prospects for health, often by building a solid public health infrastructure (Nathanson, 2003).

The medical oath taken upon graduation, while not legally binding, does have a powerful psychological influence both on the person who took it and on those who trustingly place their lives in these peoples' hands. However, in the managed care environment, physicians are no longer free to order medications or clinical tests or procedures, are no longer free to send patients for a consultation, or free to do procedures they deem necessary. In order to have certain tests done, for example, the patient must fulfill certain predetermined criteria. After a while, physicians become accustomed to acting in a way they know to be wrong, and shrug it off as a "system error" (Loewy, 2007).

The Hippocratic Oath is being re-examined afresh for moral guidance. Traditionally a solemn promise invoking supernatural authority as witness, the oath entails making a covenant with other members of the profession to share knowledge freely, to respect one's teachers, and to behave towards patients according to the Hippocratic Code. However, physicians are no longer in a simple clinical relationship with patients, as the structure of health services now involves them in many other tasks, some of which may entail conflicting responsibilities. At the same time, healthcare has become multidisciplinary in nature and multi-agency in delivery. Scientific advances and new technological capabilities throw up difficult and sometimes bizarre moral predicaments. All these changes make for greater moral complexity in everyday practice. The medical profession is being forced to face hard choices in patient care and to re-examine its

own role in healthcare, causing it to look again at the nature of its own values (Hurwitz & Richardson, 1997).

Primary Care Provider's Nontraditional Role and Responsibility

Approach to Disease Management

Recent studies have shown that many primary care physicians feel pressured by managed care plans to expand their scope of practice beyond their level of comfort, such as by directly managing patients with complex chronic diseases rather than referring these patients for specialty consultation. Faced with these pressures, disease management programs may be perceived as a desirable strategy for assisting busy primary care physicians to care for patients who require considerable attention and time to effectively address their chronic care needs (Fernandez, Grumbach, Vranizan, Osmond, & Bindman, 2001).

Managing the daunting needs of patients with multiple co-morbid chronic conditions is perhaps the greatest challenge confronting primary care physicians (Zweifler, 2007). As a result, practicing primary care physicians generally have favorable perceptions of the effect of voluntary, primary care inclusive disease management programs, both for their patients and for their own practice satisfaction (Zweifler, 2007).

The solution to the problem of inadequate time for comprehensive patient care lies in creating a new healthcare model that uses a team of care givers. The model would include nurse practitioners, physician's assistants, nutritionists and health educators, who would take the lead in preventive care, patient education, and routine chronic disease management (Gradison, Yarnall, Krause, Pollak, & Michener, 2005). The term *disease management* denotes a system of care for a particular condition such as asthma, diabetes, or cholesterol that is intended to reduce costs and improve outcomes (Wynn, 1996).

Some management care plans have been criticized as potentially leading to fragmentation of care if patients with multiple chronic diseases are treated in separate disease-specific programs, forgoing a primary care physician. Concerns have also been raised about the potential loss of clinical skills for primary care physicians, as well as the possible deleterious effect on primary care physician-patient relationships if primary care physicians no longer deliver comprehensive care (Fernandez, Grumbach, Vranizan, Osmond, & Bindman, 2001).

Disease management requires physicians to think about patient care in a different way. Outreach and long-distance monitoring is required (Wynn, 1996). However, performing such outreach and monitoring is complicated by a physician's workload and responsibilities.

Successful disease management requires significant resources for its development and implementation, and may require some practices to collaborate with other entities to provide

effective health services (American Academy of Family Physicians [AAFP], 2007). However, it is important for primary care physicians in all practice settings to familiarize themselves with disease management concepts, to review the cost and outcomes data, to recognize the potential for conflict of interest, and to manage care and advocate for their patients accordingly (AAFP, 2007).

Through monitoring of recommended care for each patient, a good disease management program will reach out to patients with reminders, education, and other materials. In such a way, patient self-management is optimized in the interval between visits with the physician. Primary care physicians serve as the optimal care coordinator in assisting patients not only with clinical care and information, but in understanding and navigating the healthcare system (AAFP, 2007).

Use of Preventive Medicine

Studies report that the delivery of preventive services remains below national goals. Primary care physicians deliver preventive services at particularly low rates (Pham, Schrag, Hargraves, & Bach, 2005). Prevention has further been said to be undervalued and poorly supported in our health system (Satcher, 2006). The U.S. healthcare system is grounded in a medical infrastructure wherein care is provided and reimbursed based on a perceived doctor-patient relationship in which “prevention” is defined simply as: “eat right, exercise, take vitamins and see the doctor regularly.” The goal of re-centering how medical care is provided is to shift the profession from a “legacy of treatment” to a “culture of prevention” (Meiris, 2006).

It is commonly said that “an ounce of prevention is worth a pound of cure.” However, in the United States, more money is spent on treating diseases and their complications than on preventing them in the first place (Satcher, 2006). Preventable health conditions are important causes of morbidity and mortality in the U.S. The care of patients diagnosed with such conditions requires a large part of healthcare resources. As an example, the cost of diabetes alone to the U.S. healthcare system has been estimated at more than \$100 billion per year (Streja & Rabkin, 1999).

Due to their accessibility to the patient population and their long-term relationship with patients, primary care physicians hold a strategic position for the delivery of preventive services. However, insight into the implementation of prevention in primary care is limited (Hulscher, Wensing, VanDer Weijden, & Grol, 2007). Studies suggest that American Diabetes Association recommendations remain far from being translated into clinical practice across different forms of healthcare delivery. It is not known if the non-implementation of guidelines occurs randomly, or if certain patients benefit from a full implementation of all guidelines while others are completely or partially neglected (Streja & Rabkin, 1999).

Furthermore, little is known about whether primary care physicians deliver preventive services solely as preventive measures or whether they are motivated by patient symptoms. One study’s

findings indicate that some screening services, such as hearing, vision, urinalysis, and sigmoidoscopy testing, are performed nearly as frequently in response to patient symptoms as for screening asymptomatic patients (Cooper, Goodwin, Stange, 2001). While this indicates that physicians are tailoring their use of these services to patient needs, it also implies that the maximum benefit for early detection is not being achieved.

While the conceptual worth of primary prevention, including behavioral counseling, is high, its practice is significantly countered by the predominant clinical emphasis on and rewards for secondary care (Mirand, Beehler, Kuo, & Mahoney, 2002). Traditionally, physicians assumed the role as lead (and, sometimes, sole) dispenser of care. In terms of preventive care, one study indicates that physicians criticize themselves as not necessarily being team players, and stated this as being a barrier to preventive care. Spending time to discuss prevention with a patient was perceived by some physicians as not being a prominent element in the role of doctor nor an effective use of physician time. This view, compounded by the practice emphasis on diagnosis and treatment, lessened the likelihood of primary care physicians delivering primary prevention (Mirand, Beehler, Kuo, & Mahoney, 2003).

Role as Health Promoters

Today, traditionalists may say physicians are providing their patients with all necessary and pertinent information regarding their health. However, physicians can promote health outside the traditional medical venue in multiple ways. According to Gadon, one strategy involves physicians working with local businesses to ensure that healthy foods are available within a community. Another strategy is to appeal to municipal authorities for community recreational facilities such as parks and walking paths. Physicians can also promote health by participating in school programs designed to prevent obesity and school violence. They can even serve as advocates for legislative and policy changes to improve physical and social conditions that may adversely affect the health of people within a community (Gadon, 2007).

In 1981, a study of the role of primary care physicians concluded that there was a lack of consensus regarding many of the Surgeon General's recommendations for health promotion, and that most primary care physicians felt unprepared for this role and unable to change patients' behavior (Poland, Wechsler, & Levine, 1996). Some primary care physicians who participated in a recent study to determine their role as health promoters, reported that the main barriers to counseling campaigns were time constraints, disturbance of daily routine, and project organization that was too complex. Physicians also reported that many chronically ill patients already visit the practice regularly and thus would be repeatedly approached if the screening took place at short intervals (Allenspach, Handschin, Joss, Hauser, Nüscherer, & Grize, et al., 2007).

Scientific literature provides substantial evidence as to the potential effectiveness of health promotion in primary care settings. For example, when looking at health promotion and heart disease, it is clear that health promotion in primary care can reduce mortality and morbidity,

psychological distress, and some biological risk factors (Frankish, Moulton, & Gray, 2000). However, the attainment of national goals for health promotion requires the enthusiastic agreement and active participation of primary care physicians (Poland, Wechsler, & Levine 1996).

Challenges for Primary Care Providers

Provider Shortages

It is now widely accepted that the United States is on the verge of deepening physician shortages (Cooper, 2004). The combination of increasing demand for physicians and a recent decline in their actual effective supply is leading to a projected short-fall of more than 200,000 physicians by 2025 (Cooper, 2007).

Primary care has been particularly affected by these impending shortages. Although the number of physicians in the United States has more than doubled over the past 40 years, the ratio of office-based primary care physicians to the national population has diminished. In 1970, 40.2 percent of the physician workforce comprised primary care physicians; whereas in 1980, 36.5 percent of the physician workforce was primary care physicians (AMA, 2006). As previously mentioned, in 2004 there were only 33.5 percent of primary care physicians in the physician workforce. The decline in general practice, the arrested growth of family medicine training programs, and the increased sub-specialization of internal medicine and pediatrics have been collectively responsible for the continuing decrease in the proportion of physicians in the United States who practice a primary care specialty (Barnett & Midtling, 1989).

Although the numbers of primary care physicians in the United States are diminishing, they still play a pivotal role in healthcare. Primary care physicians provide for a majority of visits made to doctors' offices ("The U.S. Primary Care Physician Workforce: Undervalued Service," 2003). This decline is threatening the development of a balanced physician labor force, essential to sustainable healthcare for the United States ("The U.S. Primary Care Physician Workforce: Minimal Growth 1980-1999," 2003).

The limited supply of primary care providers has been especially pronounced in poverty-stricken urban communities and rural areas. The Health Resources and Services Administration (HRSA) developed the Health Professional Shortage Area (HPSA) designation system in the late 1970s to address the unequal distribution of primary care physicians in the United States and to help target the allocation of Federal and State resources (Public Law No. 94-484, 90, 1976). HPSAs are designated based on several criteria, including having less than one primary care physician for every 3,500 residents. Currently, the HPSA designation identifies 2,100 rural areas as underserved (Pathman, Konrad, Dann, & Koch, 2004).

With the older adult population expected to increase from 35 million in 2000 to 40 million in 2010 (AoA, 2006), there is justified concern about the ability to care for this population. It is anticipated that physicians will spend 50 percent of their practice time treating patients over 65 (AMA, 2006). As the average life expectancy of Americans continues to increase, the 85 and older population is the most rapidly growing segment (AMA, 2006). It is also a segment that requires regular medical attention, as statistics illustrate that by age 65, most Americans have at least one chronic illness. Older adults use prescription medications and visit physicians more often and require a greater assortment of specialists than any other age group (AMA, 2006). It was estimated that after the year 2007, the United States should have 20,000 geriatric-trained physicians to effectively care for the older adult population. As of 2006, the United States has less than half that amount; 9,000 physicians who are adequately trained to practice gerontology (AMA, 2006).

Workloads

Addressing multiple problems during a single outpatient visit is one important mechanism primary care physicians use to provide comprehensive care. This may include providing services beyond the patient's primary reason for the visit, as time permits, including such things as preventive services, follow-up of acute or chronic illnesses, mental health or family issues, addressing patient requests, or investigating "by the way" patient comments that may indicate serious medical issues (Flocke, Frank, & Wenger, 2001). These competing demands for time can cause significant strains on the workload of the primary care physician and may result in lower than optimal levels of care for the patient.

The growing shortages of primary care physicians and changes in the scope of care expected from them further exacerbate the increased workloads in the primary care setting. Primary care physicians are faced with increased pressure to provide a growing list of preventive services. As prevalence of chronic conditions increases, so do the requirements for their proper management. According to the 2007 DocStyles¹ Survey, on average, physicians responding to the survey reported seeing 120 patients per week. Not only has the number of primary care tasks grown exponentially, but physician performance is being measured and physicians are even being paid according to their ability to perform these tasks reliably and consistently (Bodenheimer, 2006). Often times, physicians are reimbursed for the quantity rather than quality of services provided, leading to short rushed visits with overfilled agendas that cause patient dissatisfaction and physician frustration.

St. Peter et al. conducted a study with 7,015 primary care physicians to assess possible changes in the scope of care provided by them (St. Peter, Reed, Kemper, & Blumenthal, 1999). In this study, physicians reported that the medical conditions being treated by many primary care physicians have increased in complexity and severity in recent years. Moreover, a sizable minority of primary care physicians reported concern about the scope of care expected from primary care physicians and the effects on the delivery of quality care.

Managed Care and Insurance Plans

During the 1990s, U.S. managed care organizations firmly embraced the approach of using primary care physicians as gatekeepers, hoping that they would both improve the quality of care and decrease the overall cost of services. Under gatekeeping arrangements, patients must initiate care with their primary care physician and obtain authorization from this physician for referrals and other specialized services. Many managed-care organizations pay their primary care "gatekeepers" by capitation and place the primary care physician at financial risk for the costs of referrals and hospital services (Grumbach, 1999).

The growth of gatekeeping in the 1990s in the United States was associated with an increase in the demand for primary care physicians, but U.S. primary care physicians never fully embraced the gatekeeper role (Bindman & Majeed, 2003). One study documents the ambivalence of many primary care physicians regarding their role in managed-care systems (Halm, Causino & Blumenthal, 1997). Although they acknowledge that models of healthcare delivery in which primary care physicians serve as gatekeepers may enhance the continuity and coordination of care and improve the provision of preventive services, many also believe that these models have a deleterious effect on physician–patient relationships, clinical freedom, and the overall quality of care. While some thought gatekeeping improved their role as care coordinators, for many the increase in paperwork outweighed the benefits (Halm, Causino, & Blumenthal, 1997). Other recent surveys of physicians indicate that managed care is associated with declining levels of satisfaction among primary care physicians, with a sense of loss of control and clinical autonomy, and with a perception that the quality of care is deteriorating (Donelan, Blendon, & Lundberg, 1997; Kerr et al., 1997; Burdi & Baker, 1999).

Continuity of care with a personal practitioner is a basic element of good primary care and can often be negatively influenced by involuntary disruptions in insurance coverage. One study found that 25 percent of patients had been forced to change primary care physicians within the previous 2 years because of changes in their insurance plans (Flocke, Stange, & Zyzanski, 1997). The patients who had made such involuntary changes rated their current physicians significantly lower on several measures of quality of care than did patients who had not been forced to change physicians. The study found that the quality of primary care appeared to be less dependent on the payment system than on the maintenance of the patient-physician relationship (Flocke, Stange, & Zyzanski).

Preventive Service Guidelines

Implementation of Preventive Services Guidelines

The value of prevention has long been understood by clinicians. Over the past century, the introduction of vaccines, screenings, and tertiary prevention services is directly correlated with substantial reductions in disease morbidity and mortality. As a result, preventive services

guidelines have been routinely established for many conditions and diseases. The U.S. Preventive Services Task Force (USPSTF) is an independent panel of experts in primary care and prevention that systematically reviews evidence of effectiveness and develops recommendations for clinical preventive services (“Guide to Clinical Preventive Services,” 2007). Sponsored since 1998 by the Agency for Healthcare Research and Quality (AHRQ), the Task Force is the leading independent panel of private-sector experts in prevention and primary care. In addition to the USPSTF, preventive service recommendations may come from various other sources, such as medical specialty organizations, voluntary associations, other professional and scientific organizations, and individual experts.

Barriers to Implementation

Despite the known value of preventive care, there are significant barriers to the successful implementation of preventive services guidelines. Studies have shown that clinicians often fail to provide recommended clinical preventive services (Lurie, Manning, & Peterson, 1987; Lopez-de-Munain, Torcal, Lopez, & Garay, 2001; Solberg, Kottke, & Brekke, 2001; U.S. Preventive Services Task Force, 2000). This is due to a variety of factors, some directly related to physician knowledge and attitudes, and others related to external factors inherent in the healthcare delivery system. Additionally, physicians may be uncertain as to which services to offer, given the myriad of sources for providing recommendations and varying levels of coverage for these services as provided by individual health plans. Clinicians are often confronted with various (sometimes conflicting) sets of clinical guidelines for the provision of preventive care, given the number of health plans they contract with (Ayres & Griffith, 2007, p. 150). This conflict among guidelines is detrimental to the delivery of preventive care and creates a major barrier to improving these services (Ayres & Griffith, 2007, p. 37).

In a focus group study of contracted health plan clinicians, the following seven themes emerged that represented barriers to implementation: (1) Payment and cost issues, (2) time factors, (3) legal issues, (4) inconsistency among health plan tools with various clinical preventive services recommendations, (5) tracking of clinical preventive services already delivered to patients, (6) a lack of internalization of guidelines, and (7) the patient-clinician relationship (Ayres & Griffith, 2007, p. 150). In another study focusing on the delivery of preventive care in a primary care setting, factors such as competition with acute and chronic illness care needs, patient concerns, billing issues, and pressure on physician time and productivity were identified as barriers to the delivery of preventive services (Crabtree et al., 2005).

Researchers have used the framework of a behavioral change model to organize and characterize barriers to the implementation of preventive services guidelines (Cabana et al., 1999). This model describes an ideal mechanism of action for guidelines and organizes barriers based on whether they affect physician knowledge, attitudes, or behavior (Woolf, 1993). Using this framework, barriers to the implementation of preventive services guidelines are described as follows:

- Barriers with respect to Physician Knowledge include:
 - Lack of familiarity: Due to volume of information, time needed to stay informed, and guideline accessibility
 - Lack of awareness: Due to volume of information, time needed to stay informed, and guideline accessibility.

- Barriers with respect to Physician Attitudes include:
 - Lack of agreement with specific guidelines
 - Lack of agreement with the concept of guidelines in general
 - Lack of outcome expectancy: Physician believes that performance of guideline recommendation will not lead to desired outcome
 - Lack of self-efficacy: Physician believes that he/she cannot perform guideline recommendation
 - Lack of motivation: Inertia of previous practice habits and routines.

- Barriers (external) affecting Physician Behavior include:
 - Patient factors: Inability to reconcile patient preferences with guideline recommendations
 - Guideline factors: Presence of contradictory guidelines and guideline characteristics such as not concise enough, difficult to use, inconvenient, cumbersome, and confusing
 - Environmental factors: Lack of time, lack of resources, organizational constraints, lack of reimbursement, perceived increase of malpractice liability.

Implementation Facilitators

Various studies have focused on factors leading to higher rates of preventive services delivery. Hung et al. conducted a study to examine associations between both practice and provider attributes and preventive service delivery (Hung et al., 2006). This study suggests that encouraging greater staff participation, leveraging a range of clinical staff, and increasing the use of clinical support systems can improve preventive service delivery for health behaviors in primary care practices. In another study of more than 300 healthcare providers in 52 practices nationwide, the use of nurse practitioners, allied health professionals, clinician reminders, and patient registries were positively associated with preventive care delivery (Hung, 2007). Crabtree et al. studied preventive care delivery in 18 family practices and found that having a physician championing and making strategic economic choices were among the important features shared by many practices with higher clinical preventive service delivery rates (Crabtree et al., 2005). **Error! Bookmark not defined.** In a study designed to investigate the relationship between attributes of physicians and their practices, such as experience, training, sex, practice setting, and the extent to which their Medicare patients received preventive services, Pham et al. determined that physician and, more consistently, practice-level

characteristics were both associated with differences in the delivery of services (Pham et al., 2005). Specifically, correlations such as lower percentages of practice revenue derived from Medicare, practices with three or more physicians, physicians who were graduates of a U.S. or Canadian medical school, and the availability of information technology to generate preventive care reminders or access treatment guidelines were all positively associated with higher levels of preventive care.

Ayres and Griffin obtained qualitative feedback from health plan clinicians with respect to factors that would facilitate the implementation of preventive services guidelines (2007, p. 150). The following factors were identified: (1) Support from health plans in assessing their policies and payment procedures to make sure that they are in line with preventive services recommendations; (2) patient materials such as reminders sent to health plan members, including bilingual and age-appropriate handouts or pamphlets and immunization cards; (3) strategies to increase awareness and sensitivity of clinicians in practice such as incentives and knowledge of auditing procedures; and (4) consistency in health plan tools such as brightly colored user-friendly universal sheets for inclusion in patients' records.

Preventive Services Guidelines for Eye Health

Preventive services guidelines for vision screenings have been recently updated by the U.S. Preventive Services Task Force (USPSTF). Recommendations are currently provided with respect to screening for visual impairment in children ages 0 to 5 and screening for glaucoma. Recommendations for screening visual impairment in adults are currently in the process of being updated. These recommendations are provided below, along with the rationale for the recommendation and the grade for the strength of the recommendation. Recommendations are graded according to one of five classifications (A, B, C, D, and I) reflecting the strength of evidence and magnitude of net benefit (benefit minus harm) (U.S. Preventive Services Task Force Ratings).

1. Recommendation for Screening Visual Impairment in Children Ages 0-5:

The USPSTF recommends screening to detect amblyopia, strabismus, and defects in visual acuity in children younger than age 5 years (U.S. Preventive Services Task Force, 2004).

- ***Strength of Recommendation:*** Grade B. The USPSTF recommends that clinicians provide this service to eligible patients. The USPSTF found at least fair evidence that this service improves important health outcomes and concludes that benefits outweigh harms.
- ***Rationale:*** The USPSTF found no direct evidence that screening for visual impairment in children leads to improved visual acuity. However, the USPSTF found fair evidence that screening tests have reasonable accuracy in identifying strabismus, amblyopia, and refractive error in children with these conditions; that more intensive screening (compared with usual screening) leads to improved visual acuity; and that treatment of

strabismus and amblyopia can improve visual acuity and reduce long-term amblyopia. The USPSTF found no evidence of harms for screening, judged the potential for harms to be small, and concluded that the benefits of screening are likely to outweigh any potential harms.

2. Recommendation for Screening for Glaucoma:

The USPSTF found insufficient evidence to recommend for or against screening adults for glaucoma (U.S. Preventive Services Task Force, 2005).

- **Strength of Recommendation:** Grade I. The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing this service. Evidence that this service is effective is lacking, of poor quality, or conflicting and the balance of benefits and harms cannot be determined.
- **Rationale:** The USPSTF found good evidence that screening can detect increased intraocular pressure (IOP) and early primary open-angle glaucoma (POAG) in adults. The USPSTF also found good evidence that early treatment of adults with increased IOP as detected by screening reduces the number of persons who develop small, visual field defects, and that early treatment of those with early, asymptomatic POAG decreases the number of those whose visual field defects progress. The evidence, however, is insufficient to determine the extent to which screening, leading to the earlier detection and treatment of people with IOP or POAG, would reduce impairment in vision-related function or quality of life.
The USPSTF found good evidence that treatment of increased IOP and early POAG result in a number of harms, including local eye irritation and an increased risk for cataracts. Given the uncertainty of the magnitude of benefit from early treatment and the known harms of screening and early treatment, the USPSTF could not determine the balance between the benefits and harms of screening for glaucoma.

3. Recommendation for Screening for Visual Impairment in Older Adults

Given the availability of new evidence, the USPSTF has decided to update its 1996 recommendation. This work is currently in progress. The 1996 recommendation may contain information that is out of date (U.S. Preventive Services Task Force, 1996).

1996 Recommendation:

There is insufficient evidence to recommend for or against routine screening for diminished visual acuity among asymptomatic schoolchildren and nonelderly adults ("C" recommendation). Recommendations against such screening may be made on other grounds, including the inconvenience and cost of routine screening, and the fact that refractive errors can be readily corrected when they produce symptoms (U.S. Preventive Services Task Force, 1996).

Routine vision screening with Snellen acuity testing is recommended for elderly persons ("B" recommendation). The optimal frequency for screening is not known and is left to clinical discretion. Selected questions about vision may also be helpful in detecting vision problems in elderly persons, but they do not appear as sensitive or specific as direct assessment of acuity (U.S. Preventive Services Task Force, 1996).

There is insufficient evidence to recommend for or against routine screening with ophthalmoscopy by the primary care physician in asymptomatic elderly patients ("C" recommendation) (U.S. Preventive Services Task Force, 1996).

Public & Eye Health Implications

Primary care physicians are in a unique position to prevent loss of vision and blindness. A review of evidence regarding screening and management of eye disorders and visual disability among adults in a primary care setting reveals that primary care physicians can play a critical role in preserving vision in their patients by managing systemic diseases that impact eye health and by ensuring that patients undergo periodic evaluation by eye care professionals and receive needed eye care (Rowe, MacLean, & Shekelle, 2004). Although primary care providers serve as the access point into the health care system for many patients with eye problems, physicians generally lack the training, resources, and time to perform all of the elements of the basic eye examination (Goldzweig, Rowe, Wengel, MacLean & Shekelle, 2004).

Physician Attitudes and Opinions Regarding Eye Health

Despite physician workloads and an increasing demand for primary care services, many physicians answering a web-based survey demonstrated favorable attitudes and opinions regarding eye health and the role they should play in talking with patients about eye health. Among the 1,500 physicians responding to the 2007 DocStyles¹ Survey, 68 percent disagreed or strongly disagreed with a statement that; "It is the optometrist's or ophthalmologist's responsibility to talk to patients about eye health, not the physician's responsibility." Sixty-three percent (63%) of these physicians disagreed or strongly disagreed with the statement that; "I only talk to my patients about their vision or eye health if they bring it up." Seventy-two percent (72%) of these physicians are likely or very likely to recommend that their patients see an eye care professional (optometrist or ophthalmologist) for an eye exam, regardless if they have any vision problems or not. Similarly, 70 percent agreed or strongly agreed with the statement; "Encouraging patients to get a dilated eye exam is my responsibility."

There appears to be some room for improvement among physicians responding to the DocStyles¹ Survey with regard to their confidence in identifying patients at higher risk for eye disease. Just more than half (51%) of the 1,500 physicians surveyed agreed or strongly agreed with the statement that; "I have adequate knowledge to advise my patients on vision health." Fifty-eight percent (58) of physicians agreed or strongly agreed with the statement; "I can

identify patients at higher risk for eye disease.” Furthermore, just 44 percent of physicians responding to the DocStyles¹ Survey agreed or strongly agreed with the statement; “Patients are asked if they have a family history of any eye disease when they complete their medical history forms.”

With regard to patients that have diabetes, physicians have considerably stronger attitudes and opinions regarding eye health. Among physicians responding to the DocStyles¹ Survey, 84 percent agreed or strongly agreed with the statement; “I often talk to patients with diabetes about their eye health.” Ninety-five percent (95 %) of these physicians agreed or strongly agreed with the statement; “Patients with diabetes should have their eyes examined every year.” Ninety-two percent (92%) of physician respondents are likely or very likely to talk to patients they see with diabetes about diabetic eye disease.

Physician Preferred Information Sources About Vision and Eye Health

According to the 2007 DocStyles¹ Survey, most physicians prefer to obtain information about vision and eye health from professional journals (77%). Sixty-two percent (62%) of physicians responding to the survey prefer to get information about vision and eye health from medical websites; 58 percent from continuing medical education (CME) courses or programs; 51 percent from professional medical societies; and 50 percent from scientific meetings. The least preferred sources of information for vision and eye health were radio (2%), newspapers (3%), and television (4%).

Summary

It is clear that primary care providers play an integral role in the delivery of health care in the United States. Consequently, they experience difficult workloads and face a number of new demands that have been placed upon them as a result of managed care organizations and policy changes. Recently, they have also been called upon to take a more preventive stance in their approach to the delivery of medicine as well as to act as health promoters. Despite these burdens and their dwindling numbers, PCPs are in a position to refocus eye health among their patients. The key to bridging the eye health community and the primary care community is to approach any collaboration with sensitivity to the demands of this profession and to seek incremental change.

Primary care providers have a unique opportunity to help prevent visual impairment and blindness through patient education, medical therapy, and referral to eye care professionals (Rowe, MacLean, & Shekelle, 2004). Findings from the DocStyles¹ Survey indicate that physicians need additional training to better identify patients at higher risk for eye disease and advise their patients on eye health. Early collaborative efforts should focus on improving the number of physicians who can confidently identify patients at higher risk for eye disease. Toward this end, physicians indicate that their preferred sources of information are

professional journals, medical websites, and CMEs. Additionally, perhaps providing PCPs with a slip-sheet or card with respect to current preventive services guidelines for eye health may be beneficial. Providing such information directly to PCPs may alleviate problems with searching through the available literature, in order to better understand the current guidelines regarding eye health.

Physicians continue to be viewed as credible leaders within their community and their opinions and recommendations are widely respected. Clear evidence exists that a physician's recommendation to stop smoking cigarettes is one of the most effective factors in promoting smoking cessation (Gadon, 2007). Such involvement in promoting eye health and appropriate receipt of eye care and examinations is likely to be equally effective. Primary care providers can play a critical role by educating patients regarding the importance of treatment and prevention of eye diseases, by optimizing systematic treatment for illnesses such as diabetes and hypertension, and by recognizing the need for specialty referral (Rowe, MacLean, & Shekelle, 2004).

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