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LATEST ADVANCES IN PHARMACY PRACTICE ACTIVITIES

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ABSTRACT

The article aims to define the latest advance in pharmacy practice field. It highlights various upcoming roles of Pharmacy practice. Role in healthcare industries as well as implementation of Pharm D coarse plays a great role in the advancement of Pharmacy Practice activities. Larger patient populations in general, and increasing numbers with chronic diseases in particular, contribute to demands for health providers and facilities that must stretch to meet changing needs. As the number and types of medications have grown and the needs of patients have changed, pharmacists have reported longer work hours, reduced flexibility in scheduling, and insufficient time to perform the range of tasks for which they are trained and accountable.

KEYWORDS: Pharmacy practice, Pharm D, healthcare industries.

INTRODUCTION

Across the nation, people are living longer. This longevity is attributable to healthier lifestyles, a well-trained health workforce, advances in science and understanding of human health and disease, and continuing discovery of new therapies for managing acute and chronic conditions. As the population ages, however, its interaction with the health care system often increases. Larger patient populations in general, and increasing numbers with chronic diseases in particular, contribute to demands for health providers and facilities that must stretch to meet changing needs. [1]

Across the pharmacy workforce, evidence of this demand has been seen in the dramatic increase in prescriptions written and dispensed in the United States over the last two decades. During the 1990s alone, the number of retail prescriptions dispensed increased by 44%, from 1.9 billion in 1992, to almost 2.8 billion in 1999. [1, 2] By 2010, this number increased to approximately 3.7 billion prescriptions. Although a recent study of the IMS Institute for

Healthcare Informatics reported a national decline in overall per capita use of medications in 2011, utilization is expected to increase as the economy stabilizes and as the population continues to grow. [3] Not surprisingly, this growth generated a demand for pharmacists in hospitals and clinics, as well as in retail, government, and academic settings. Because growth of the workforce had not kept pace with the demand for services – due in part to the lack of growth in educational opportunities for many years – a nationwide pharmacist shortage developed in the late 1990s. [2]

Current Estimates and Trends

Pharmacists represent the third largest health professional group in the U.S. Although some pharmacists work in non-patient care settings (e.g., teaching, research, and administration), most work in a variety of patient care settings . In 2011, there were 272,320 working pharmacists and an estimated 343,550 pharmacy technicians in the U.S. workforce. This corresponds to a national average of 87 pharmacists and 108 pharmacy technicians per 100,000 population. [4]

Expanding Roles of Pharmacy Practice

The expanding scope of practice for pharmacists has resulted in increased educational requirements for students and increased responsibilities for practitioners. Today, pharmacists participate in such diverse patient-care activities as drug monitoring and disease management, multidisciplinary clinical care, and patient education. As members of clinical care teams, their expertise extends to advising patients and prescribers with regard to potential drug/drug and drug/ disease interactions, the changes in management of chronic and acute illnesses, and assessing and improving outcomes of drug therapy. As the number and types of medications have grown and the needs of patients have changed, pharmacists have reported longer work hours, reduced flexibility in scheduling, and insufficient time to perform the range of tasks for which they are trained and accountable. Although it is possible that fewer pharmacists may be needed for dispensing and drug distribution (i.e., as a result of the expanded use of pharmacy technicians and aides, automation, and standardization of dispensing and distribution processes), clear evidence of the workforce impact of these changing practice patterns has not yet been widely seen. [3, 4]

Utilization of Pharmaceuticals

Demand for pharmacists is driven by the demand for prescriptions and the increasing demand for their contributions to the safety and efficacy of drug therapy. According to the IMS

National Prescription Audit, the change in the number of prescriptions dispensed in the U.S. has slowed in growth. Overall, per capita utilization of medicines declined in 2011 as patient office visits and non-emergency room hospital admissions declined. Utilization by patients 65 and older also decreased. Although the downward trend in prescription drug use has only been seen in recent years, possibly as a result of the economic recession and high unemployment in the U.S., the trend toward increased utilization is generally expected to continue as the economy stabilizes, as more therapies and innovations in treatment are developed, as more generic drugs become available, and as the population grows and ages.

Automation and Technologic Advances

Automated, computerized refilling and robotic dispensing systems have proved reliable in helping pharmacists with dispensing varies by setting. The use of electronic prescribing software increases the time available to pharmacists for health education, drug monitoring, and patient care, and can reduce the incidence of medical errors created by illegibly written prescription orders. The vast majority of pharmacies use some form of automated order and dispensing technology, however, these automated environments have not yet been shown to decrease the number of pharmacists and work hours needed to oversee prescription management and monitoring. New costs, restrictive legislation, and greater applicability to large health facilities than to small facilities have limited the adoption of automation and technology on a widespread basis. [4, 5]

Expanding Pharmaceutical and Biotechnology Industries

Biotechnology companies and an advanced technology sector located near universities and research centers continue to draw the pharmaceutical industry to California. Leaders such as Pfizer, Johnson & Johnson, Merck, and Novartis have large research and development sites in La Jolla. Amgen and Allergan are in Thousand Oaks and Irvine, and Genentech, Gilead, and Roche maintain primary facilities in the San Francisco Bay Area. The San Francisco and San Diego areas now support the nation's first and third largest biotechnology communities. As these businesses mature, and as approved investigational new drugs and clinical trials become critical to product lines, demand for pharmacy graduates in this sector will increase. Activities devoted to developing, producing, and assessing the clinical application of pharmaceuticals are likely to stimulate state and local economies and generate new demands for PharmD expertise in the pharmaceutical sciences. Among recipients of PharmD degrees conferred in 2009-2010, graduates were white (60%); Asian- Pacific Islander (21%); African

American (7%); Hispanic/ Latino (4%); and American Indian (0.4%). These data reflect a lack of diversity in the pharmacy profession, which is similar to that seen for many health professions. [5]

Factors Affecting Workforce Supply

The size of the active pharmacist workforce is primarily driven by work participation (i.e., the number of pharmacists who enter/re-enter and exit the workforce). Historically, the supply of licensed pharmacists in California had been restricted by revised standards for licensure and the state's rigorous pharmacy licensing examination. Other factors influencing the supply of pharmacists include the capacity of schools of pharmacy to train new pharmacists, the economy, changing demographics of the pharmacist workforce, demand for drug therapy management in primary care and specialized chronic drug therapy management, automated dispensing and refilling systems, mail order filling of prescriptions, and the complementary workplace role of pharmacy technicians. [2, 3, 5]

Revised Standards for Licensure

Until the 1990s, a Bachelor of Science (B.S.) degree from an accredited school of pharmacy was the minimum educational requirement for graduation. The B.S. degree was considered sufficient preparation for the North American Pharmacist Licensure Examination (NAPLEX) – the standard licensing exam in all states except California. Only 17 of the nation's 72 schools offered the PharmD degree. By contrast, two of California's schools (UCSF and USC) have offered the PharmD degree since the 1950s. In the 1970s, California's then three schools of pharmacy, along with the California State Board of Pharmacy agreed upon a common set of competencies to prepare students for a level of expertise beyond product dispensing. As a result, California's pharmacy education programs broadened their curricula to include training in the appropriate use of drugs in patients**,** managing drug therapy of chronic diseases, therapeutic counseling, and more recently, the use of pharmacogenomics in the selection of therapy. [1]

In 1995, the American Association of Colleges of Pharmacy (AACP) voted to grant the PharmD as the entry level degree for practicing pharmacists and in 2000, the Accreditation Council for Pharmacy Education (ACPE) announced that it would accredit only PharmD programs. The NAPLEX was updated and the PharmD was established as the required entry-level degree for more recent graduates to practice in all 50 states. [5]

Workforce Demographics

The demographics of the pharmacy workforce are also changing. In 1970, the proportion of pharmacists who were women was less than 13%. Today, half of all pharmacists are women. This growth is expected to increase as most new graduates are female while the majority of pharmacists approaching retirement are male. By 2025, two out of three pharmacists are likely to be women. [2]

Rapid Growth in Educational Programs

The number of U.S. pharmacy professional schools has increased substantially over the past decade, with much of this growth occurring in recent years. Prior to 1987, for example, there were 72 U.S. pharmacy schools. This number and the total U.S. pharmacy student enrollment had been relatively constant for many years. Since 1995, however, there has been unprecedented growth in total U.S. pharmacy enrollment. This growth has been a result of both expansion of existing programs, and the establishment of new schools – including satellite pharmacy programs offered at new locations. [4]

Required resources for accredited Pharm D training programs

The allocation of funding for UC's pharmacy educational and advanced-level training opportunities has not kept pace with the increasing requirements of pharmacy education. In 1970, support for faculty instruction was calculated at a ratio deemed sufficient to ensure the quality of the training offered at UCSF. Forty years later, the same level of funding does not provide the resources needed to support a dramatically changed educational paradigm that requires small group, problem-based learning and mentoring, and clinical training, nor does it recognize the needs of a high-caliber graduate program. [4, 5]

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