



ORIGINAL ARTICLE

Hospital pharmacy practice in Saudi Arabia: Prescribing and transcribing in the Riyadh region

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Abstract *Purpose:* The purpose of this survey is to outline pharmacy services in hospitals on a regional level in the Kingdom of Saudi Arabia.

Methods: A modified-American Society of Health-System Pharmacists (ASHP) survey questionnaire as pertinent to Saudi Arabia was used to conduct a national survey. After discussing with the pharmacy directors of 48 hospitals in the Riyadh region over the phone on the survey's purpose, the questionnaires were personally delivered and collected upon completion. The hospital lists were drawn from the Ministry of Health hospital database.

Results: Twenty-nine hospitals participated in the survey giving a response rate of 60.4%. Approximately 60% of the hospitals which participated in the survey required prior approval for the use of non-formulary medications. About 83.3% of hospitals reviewed compliance with clinical practice guidelines and 72.7% hospitals reported that pharmacists are also actively involved in these activities. Pharmacists in more than 95% of hospitals provided consultations on drug information. A

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staff pharmacist routinely answering questions was the most frequently cited (74.1%) method by which objective drug information was provided to prescribers. Electronic drug information resources were available in 77.7% of hospitals, although internet use is not widely available to hospital pharmacists, with only 58.6% of hospitals providing pharmacist access to the internet. About, 34.5% of hospitals had computerized prescriber order entry (CPOE) systems with clinical decision-support systems (CDSSs) and 51.9% of the hospitals had electronic medical record (EMR) system. *Conclusion:* Hospital pharmacists are increasingly using electronic technologies to improve prescribing and transcribing of medications in Saudi Arabia.

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1. Introduction

Hospital pharmacy services must provide pharmaceutical care efficiently and effectively to assure that patients receive the highest quality of care possible. Medication errors (ME) are very common (0.03–16.9%) in hospitals throughout the medication use process including prescribing and transcribing. The negative consequences of ME include but are not limited to increased length of hospital stay, increased costs, unwarranted discomfort, and increased morbidity and mortality. The Institute of Medicine (IOM) report in 2000 estimated that 44,000 to 98,000 patients die each year in the United States (US) because of a medical error and a large proportion (7000 deaths) of these are due to an ME (IOM, 2000). Medication errors harm at least 1.5 million people annually and add US\$3.5 billion a year in extra hospital costs alone (IOMNA, 2006). The fundamental responsibility of a hospital pharmacy is to ensure that the medication use process including prescribing, transcribing, dispensing, administration, and monitoring are accurate and error free. Various ways to organize and deliver these services, and many new practices and technologies have been shown to improve their effectiveness and safety (Lai et al., 2007; Mahoney et al., 2007). These are usually delivered in the context of a general pharmacy structure and organization of the pharmacy, and are supported by training and education. Differences in practices could yield different patient outcomes. Several international pharmacy organizations have undertaken surveys to assess current practices in their country or region. These surveys assessed practices at different times and guided strategic initiatives.

In 2005, as part of the initial planning for the International Pharmaceutical Federation (FIP) Global Conference on the Future of Hospital Pharmacy, a survey was commissioned to better understand the current state of hospital pharmacy practice around the globe (Doloresco and Vermeulen, 2009). During this survey, the nature, scope, and breadth of hospital pharmacy practices were evaluated. The survey results indicated that the practice of hospital pharmacy differs from country to country and many nations face similar challenges, regardless of their population, location, or wealth. In addition, the European Association of Hospital Pharmacists (EAHP) surveyed its members on the status of the specialization in hospital pharmacy in their country at the beginning of 2010 (EAHP survey, 2010). Preliminary results show that specialized hospital pharmacy care is provided in 12 European Union (EU) member states serving 72% of the total population of the EU. Likewise, every two years, the hospital pharmacy in the Canada survey collects information about hospital pharmacy practices in their country. The report of this survey summarizes many important aspects related to clinical pharmacy,

drug distribution, human resources, medication safety and technology. The results of their most recent survey suggest that the pharmacist's role as a clinical practitioner in Canada is clearly established in most hospital settings (Hospital Pharmacy in Canada, 2009/2010) and centralized unit dose systems were reported to be in use by 70% of all respondents. Vacancies for pharmacists still exist but the latest survey data suggest that the pharmacist manpower situation has improved considerably since the last report.

The country with the largest tradition of tracking and trending hospital pharmacy services is the United States. There were over 20 surveys in more than 40 years. Currently, the American Society of Health-System Pharmacists (ASHP) national surveys of pharmacy in hospital settings focuses on the role pharmacists play in managing and improving the medication use process (Pedersen et al., 2011). These surveys are organized according to six steps in the medication-use system: prescribing, transcribing, dispensing, administration, monitoring, and patient education. Each year, the survey focuses on two steps in the medication-use system. When combined, the most recent four surveys represent a composite picture of the current role that pharmacists play in managing and improving the medication-use system. The results of these surveys indicate that pharmacists contribute to improving prescribing and transcribing. Patient safety is now a priority for medication management (Pedersen et al., 2011) and pharmacists are also responding to changes in the healthcare system to find appropriate ways to improve medication use at prescribing and transcribing steps of the medication use system (Pedersen et al., 2008). The adoption of new technology is rapidly changing the philosophy of medication distribution and pharmacists are continuing to improve medication use at the dispensing and administration steps of the medication use process (Pedersen et al., 2009); pharmacists were significantly involved in monitoring medication therapy and were less involved in medication education activities (Pedersen et al., 2010).

Saudi Arabia is the largest state in the Middle East and, due to its oil wealth; the country is a major force in the Arab world (Walston et al., 2008). The country had a population of about 27.1 million in 2010 (Central Department of Statistics, 2010). The healthcare system in Saudi Arabia is developing rapidly in response to changing healthcare needs in the population arising from the adoption of increasing affluent lifestyles. Published studies assessing hospital pharmacy practice in Saudi Arabia are not available. While specific hospitals in Saudi Arabia are known to practice at international standards, the overall current practices are uncertain. Consequently in 2010, a project was designed in collaboration between King Saud University College of Pharmacy faculty, the Saudi Pharmaceutical Society (SPS) and the American Society of Health-System

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