Future vision and challenges for hospital pharmacy

MALEBONA PRECIOUS MATSOSO
Am J Health-Syst Pharm. 2009; 66:(Suppl 3)S9-12

Demographic and epidemiologic transitions have imposed demands on health service provision, as have health sector reforms, the challenges of aging populations, disease profiles, the changing pharmaceutical landscape, and new care models created to respond to changing disease patterns. These developments have had an impact on the different sectors of pharmacy. Pharmacy has moved from the historical orientation of product-focused service to patient-centered approaches. In some countries, pharmacy has developed enhanced interprofessional relationships with other health care providers.

Changes have occurred not only in service delivery but also in other spheres. Advancements in technology, scientific breakthroughs, and developments in the medical field have contributed significantly to patient care. Drug development in the scientific field has moved from innovative chemistry to molecular drug designs. Lately, the focus has been on predictive models, with genetics taking center stage. The practices of medicine and pharmacy have transformed from experimentation to evidence generation.

The innovations that come with technological advances require adaptations of the health system and an enhancement of the pharmacist’s knowledge base. This has meant changes in approaches to service delivery across all levels of care, posing challenges to the primary-care and hospital-care roles of pharmacy. These challenges have required many countries to critically assess the size, skills, and competencies of the health work force. Responses have differed, based on health policies and resource availability of individual countries.

Demographics

Pharmacists represent the third largest profession globally; however, the distribution, in terms of practice and geographic area, sector, and sex, is consensus statements that emerge from our discussions.

Over the next two days, you will be asked to reflect on the nature of hospital pharmacy practice in your country and work together with your colleagues from around the world to develop a vision for what that practice should be in the future. In order to contextualize these deliberations, the FIP Hospital Pharmacy Section has conducted a survey of global hospital pharmacy practice, the results of which will be presented here for the first time. The support of the FIP Board of Pharmaceutical Practice for this project was key to this endeavour.

Many of you have provided the responses for your countries. Responses were received from a total of 84 countries, together representing 82.9% of the world’s population. In addition, we have obtained responses from a range of countries with different levels of development and from every World Health Organization region.

The process will not end here in Basel. The FIP Hospital Pharmacy Section has already started planning the next steps. These include not just the dissemination of the outcomes of this meeting, but academic sessions to be offered at future FIP Congresses in Istanbul (2009) and Lisbon (2010). By joining the FIP Hospital Pharmacy Section, you can be part of this global effort, aimed at ensuring the best possible outcomes from the use of medicines, utilizing the unique skills of hospital pharmacists. I am confident that the results of our work at this historic event will lead to success.

On behalf of the FIP Hospital Pharmacy Section, welcome to Basel and to the Global Conference on the Future of Hospital Pharmacy!

Reference
uneven. The pharmacist:population ratio varies widely, from <5 to >200 pharmacists per 100,000 population. There is no set standard as to what the norm for hospital pharmacist:population ratio should be. For instance, the number of hospital pharmacists per hospital beds differs between countries, with only a few countries having a standard (e.g., Belgium has 1 full-time pharmacist for every 150 weighted hospital beds (weighting depends on the specificity of the hospital service)).

With the scourge of human immunodeficiency virus infection and acquired immune deficiency syndrome, arguments have been made for strengthening the health work force. Task shifting has been recommended, mainly informed by a country’s human-resource situation. This is not restricted to resource-limited settings as a response to the challenges of chronic human-resource shortages. It is also an opportunity for well-resourced countries to introduce hospital pharmacy models that can ensure improved patient outcomes. Standards for hospital pharmacy within the context of task shifting will also open discussions on the role of pharmacy technicians and the best use of resources. Recommendation 22 of the Task Shifting report specifically mentions pharmacists and pharmacist technicians and recognizes that certain functions may be outside the scope of certain cadres; however, shortages may be the basis of task shifting.

In Europe, over 5 billion prescriptions annually are supplied reasonably safe, and matching resources exist for this, with 120,000 community pharmacists providing approximately 80% (by value and volume) of all pharmaceuticals used in member states. The resources available at hospital pharmacy level are limited, and it has been estimated that there are more than 22,000 hospital pharmacists in Europe. In other regions, particularly Africa, the level of hospital pharmacy services provided and the number of hospital pharmacists available are unknown. Besides, different categories of pharmacy occupations make it difficult to estimate the number of pharmacy personnel. The box shows some of the terms by which pharmacy personnel are known in Africa.

**Why hospital pharmacy at a time when primary health care is the focus?**

Hospital pharmacy at a time of a revival in primary health care is relevant. It fits well within the context of health-system strengthening. Due to different models of service delivery, primary care must be linked to secondary care, an important support for higher-level and complex health care. There should be referral mechanisms among different levels of care to ensure a continuum of care and seamless service.

Health systems consist of all people and actions whose primary purpose is to improve health and may be integrated or centrally directed. Hospital pharmacy is a subsystem involving different actors and entailing different actions in various components of the health system (e.g., pharmaceutical supply, financing, and information systems; human resources). An opportunity exists to advance patient care and raise the level of performance in hospital pharmacy. These actions will have an enormous effect on health systems and promote an integrated approach to health care.

Numerous studies have confirmed that pharmacist involvement in patient care can improve patient outcomes and reduce costs. In a number of countries, evidence exists at hospital pharmacy level showing how lives can be saved, costs reduced, and patient safety enhanced. This evidence should be used to contribute significantly to the achievement of efficiencies in health care. Costs can be redirected to extend the coverage and achieve universality in the provision of care. This can be the basis on which policy can be shaped and guided. Most of the studies conducted show cost savings in hospital settings in the United States, Australia, Canada, Northern Ireland, and other countries.

**Terms Applied to Pharmacy Personnel in Africa**

- Pharmaciens specialistes
- Pharmaciens
- Pharmacy assistants
- Pharmacy technicians
- Pharmaciens (dispensers)
- Pharmacists
- Pharmacy technicians (dispensing technicians)
- Auxiliaires d’entomologie
- Preparateurs en pharmacie
- Preparateur d’Etat en pharmacie
- Aides preparateurs en pharmacie
- Assistant drugist
- Assistente de farmacia
- Preparateurs en pharmacie
- diplomes d’Etat
- Drugist
- Farmaceutico
- Pharmacists generalistes
- Dispenser

Numerous U.S. studies have demonstrated cost reductions when pharmaceutical care is provided. Similar studies have been conducted in Australia, showing decreases in the incidence of adverse drug events and resultant cost savings. In Northern Ireland, the value of clinical pharmacists in reducing costs of treatment and shortened hospital stays has been reported. In Malaysia, the introduction of clinical pharmacy services in the intensive care unit resulted in savings. Such studies can serve as a body of evidence for pharmaceutical services to be strengthened at the hospital level so that more can be achieved. Money saved can be used to improve primary care services or...
other services considered a priority. The services of the third largest health care professional group in the world cannot and should not be disregarded in terms of the impact it can make in achieving good health outcomes at all levels of care, including the hospital pharmacy level.

At a time when the world focus is on patient safety, studies of medication errors and adverse drug events (ADEs) have revealed that pharmacists have made significant interventions in reducing these incidents. An Institute of Medicine report estimated that between 44,000 and 98,000 people in U.S. hospitals die each year because of medical errors. They argue that these figures may be an underestimation; the real figures could be as high as at least 1.5 million preventable ADEs in the United States each year. In an Australian study of 28 hospitals, ADEs occurred in 16.6% of admissions, resulting in permanent disability in 13.7% of patients and death in 4.9%. Several studies have been conducted linking reduction in medication errors with hospital pharmacy services.

With all these disasters, some measures are needed to circumvent this. As early as 1970, a U.K. Gillie report indicated that high rates of drug administration errors in the hospital were resolved by ward-based pharmacy practice. Other studies on adverse events and the role of pharmacists were conducted by Bond et al., involving huge patient numbers. Most of these studies demonstrated how pharmacist interventions reduced the occurrence of ADEs.

There is much more evidence in individual countries and selected hospitals within countries, where hospital pharmacists intervene significantly, but there is no indication how this has influenced policymaking in individual countries.

**Perceived shortcomings**

Despite this wealth of information, an international response in strengthening hospital pharmacy services has been very limited. Most of the initiatives have been narrowly focused and individually driven. The depth of knowledge in certain domains still reflect considerable gaps across a range of issues for global application, which is necessary for policy guidance for some countries. There is a need for a harmonized approach to guide policy for the formulation of practice standards at the national, subregional, and regional levels for increased effectiveness. There is also poor communication between different players despite the common goal of achieving good patient outcomes. Lack of coherence of approaches, especially at the national level, lead to unnecessary interprofessional conflicts. The fragmentation of projects poses a challenge for the implementation of recommended approaches. One of the key considerations is facilitation of dialogue and exchange of information among all stakeholders, at all levels. There is a greater need to package information in a particular way to make evidence talk.

**What makes evidence talk**

Interventions must have a financial impact, demonstrate that evidence is scientifically robust, and show the course of action is ethically justifiable. It is not enough to conduct studies; the outcomes must be communicated to policymakers. There are certain criteria for presenting such information. The manner in which the evidence is packaged is vital. It must be compelling: it must show before and after, lives saved, and the number of people benefitting from extended services. Saving lives and improving patients’ health is persuasive and appealing. It is ethically justifiable and morally convincing. Protection of the well-being of the patient across the globe in all sectors and at all levels as part of the continuum of care is every country’s wish. It is for that reason that the world has responded through the creation of various initiatives and through collective interventions.

**International developments and relevance to hospital pharmacy**

In 2000, the international community committed to Millennium Development Goals (MDGs) to reduce extreme poverty through setting a series of time-based targets. More recently, the World Health Assembly adopted the Global Strategy and Plan of Action for Public Health Innovation and Intellectual Property (GSPOA) to facilitate access and stimulate innovation. These global pronouncements bring into focus health gaps and the need for interventions that can significantly reduce these gaps. The integrated approach in responding to these challenges is vital, and pharmacists can contribute in specific areas.

Improvements in integrating public sector pharmaceutical services that link hospital and primary care as well as community pharmacy in a seamless manner can be achieved and contribute to the achievement of the MDGs. The role of pharmacist in clinical research and participation in clinical trials is key for the implementation of the GSPOA. For certain countries, there is a structured program in hospital pharmacies where pharmacists have recognized roles as investigators, members of ethics committees, and oversight providers for investigational drugs. These roles can be coordinated jointly with specific departments in the World Health Organization, (WHO), as has previously occurred with the development of various normative tools.

**Current initiatives of WHO**

**Standards setting.** WHO is a standards-setting body. In recent years, WHO has developed practice
standards in collaboration with the International Pharmaceutical Federation (FIP). For example, relevant practice standards include good pharmacy practice, good distribution and trade practice, and good manufacturing practices. Other countries like Australia have also come up with hospital pharmacy standards for local use. WHO can continue to work with FIP on good hospital practice standards and advocacy for the implementation of these evidence-based standards.

Health systems and procurement. Procurement and supply is a huge challenge, reflecting multiple players in the supply chain and different distribution networks with insufficient support for increased coordination at the national level. Examples of these have been shown in Kenya and Burundi, reflecting complex networks.

To meet the MDGs and for effective implementation of the GSPOA, health-system strengthening and improvements are needed. It is for this reason that WHO has embarked on an assessment of supply chains with partners to reduce duplication of effort and increase efficiencies. The expertise of pharmaceutical personnel, including the hospital pharmacist, along the distribution chain is vital to streamline procurement and facilitate coordination. An opportunity exists for the Hospital Section of FIP to promote standards of good procurement practices.

The role of hospital pharmacy

FIP is an international mouthpiece of the profession, including hospital pharmacy. Various policy statements and positions have been articulated over a number of years (e.g., statement on antimicrobial resistance). Collaborative practice models can be suggested to improve outcomes and patient care. Antimicrobial drug resistance is a major public health concern and a threat to the effectiveness of existing antimicrobial drugs. Antimicrobial-resistant pathogens continue to emerge and may cause serious public health disasters. They can be an area of focus as they cut across all countries and all socioeconomic groups. Tuberculosis is one such area targeted in the MDGs.

In some countries, hospital pharmacists are members of infection control teams and antibiotic committees in addition to their membership and leadership in drugs and therapeutics committees. This role, linked with global efforts to fight disease, can be a starting point.

Conclusion

Partnership with WHO in various initiatives and for standard setting can serve as a platform for further work and advocacy for the strengthening of health systems. Global collaboration, particularly with WHO, should be promoted (e.g., developing good hospital pharmacy practice guidelines, locating the current efforts to improve hospital pharmacy within the context of strengthened health systems). Any functional and operational health system requires human resources for the pharmacy sector, including hospital pharmacy personnel. Coordination of advocacy on what is morally defensible, ethically sound, and legally justifiable, with an aim to promote health and well-being of the communities, is important. Patient care that is clinically sound, is cost-effective, and can help redirect resources is key.

References