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A REVIEW ON HOSPITAL PHARMACY

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ABSTRACT

The purpose of this review is the information about hospitals, hospital pharmacy and pharmacists, its originations, education of pharmacy, pharmacy practice and compare the scope of the pharmacist's. In many countries, the definition and responsibilities of a hospital pharmacist have evolved dramatically, with the recent focus of practice changing from medication oriented to patient outcomes oriented. This review is covers a hospital managements issue and organization committee. The profession has dealt with obstacles such as gaining the recognition of pharmacists' capabilities and activities by other health professionals, as well as the escalating economic strain as hospitals' budgets decrease and drug costs increase. In developing countries, pharmacists often face unique challenges due in part to the economic hardships endured. However, global hospital pharmacy practice appears to have begun changing as well, expanding its practice beyond the confines of the pharmacy. If the current trend toward automation continues, there will be severe cuts in the employment of pharmacists in pharmaceutical industries in India. To survive in society as a professional, the pharmacist will have to find suitable alternative avenues. Medical education in India grew with less focus on research and development and hence, India produced medical graduates more with clinical sense acquired through experience and less of a doctors with analytical bent of mind.

INTRODUCTION

Hospital pharmacy management is a promising career option for pharmacists who enjoy the challenges presented by administrative work in an institutional setting. Hospital pharmacy managers oversee the operations of pharmacy departments and are responsible for the department's professional and administrative components. They ensure that quality pharmaceutical services are provided according to accreditation and professional standards.

There are a number of positions and responsibilities that fall in the purview of hospital pharmacy management. It is sometimes split between technician staff management and pharmacist staff management. Many hospitals employ a pharmacist in the role of clinical coordinator to track therapy utilization within the institution. Typically, the Director of Pharmacy is in charge of the overall department within the hospital. Depending on the particular hospital organization, all of these duties will be distributed in accord with the needs of the facility. As one respondent from California indicated, "There are challenges in helping others [patients and professionals]."

The pharmacy is often in charge of negotiating with wholesalers and manufacturers to get the best price on medications. Acquisition of various equipment and technologies to facilitate the workflow of the pharmacy (e.g., sterile hoods for intravenous preparations, automatic dispensing machines to use at the units in the hospital) is also included as part of this pharmacy responsibility. With the expanded focus on drug therapy, cost containment, and quality control, hospital pharmacy managers have a much higher profile within their organizations. The cost of prescription medications has been steadily rising over the past 10 to 15 years and a greater portion of a hospital's budget is now spent on medications. Furthermore, pharmacists' salaries are also increasing. Consequently, a manager has a large responsibility to control costs and guarantee the efficient and effective operation of the pharmacy. A Connecticut respondent indicated the importance of "working with other health care professionals," which helps support the pharmacy team. In addition, hospital pharmacy managers are at the forefront of work on e-prescribing, electronic medical records, and other continuity of care initiatives. A respondent from Tennessee summed up the diversity of the position as "evaluating complex drug therapies only given in [a] hospital setting; working on projects that have broad institutional impact that improve patient care across the hospital; and working with multiple health care professionals."Twenty-three percent of a manger's time is spent on business/department management tasks. An additional 13% of their time is spent on patient care services. Three other

areas each require 9% of their time: data management, personnel management, and service (committees and other activities).[1]

Definitions of Hospitals and Hospital Pharmacy[1]

Hospital

The hospital is a complex organization utilizing combination of intricate, specialized scientific equipment, and functioning through a corps of trained people educated to the problem of modern medical science. These are all welded together in the common purpose of restoration and maintenance of good health

Hospital Pharmacy

The department or service in a hospital which is under the direction of professionally competent, legally qualified pharmacist, and from which all medications are supplied to the nursing units and other services, where special prescriptions are filled for patients in the hospital, where prescriptions are filled for ambulatory patients and out-patients, where pharmaceuticals are manufactured in bulk, where narcotic and other prescribed drugs are dispensed, where injectable preparations should be prepared and sterilized, and where professional supplies are often stocked and dispensed. The computerization of the pharmacy department makes it possible for the staff to participate in patient education programs, poison control center activities, preparation of patient drug use profiles, parenteral nutrition program participation, cooperating in the teaching and research programs of the hospital, communicating new product information to nursing service and other hospital personnel and dispensing radiopharmaceuticals.

Goals for hospital pharmacy

Just as any organization must have long-range goals toward which its daily activities are directed, so must a profession, its members, and their representative societies. For example the American Society of Hospital Pharmacists, in its Constitution and Bylaws, sets forth the following objectives:

1. To provide the benefits of a qualified hospital pharmacist to patients and health care institutions, to the allied health professions, and to the profession of pharmacy.

2. To assist in providing an adequate supply of such qualified hospital pharmacists.

3. To assure a high quality of professional practice through the establishment and maintenance of standards of professional ethics, education, and attainments and through the promotion of economic welfare.

4. To promote research in hospital pharmacy practices and in the pharmaceutical sciences in general.

5. To disseminate pharmaceutical knowledge by providing for interchange of information among hospital pharmacists and with members of allied specialties and professions.

More broadly, the Society's primary purpose is the advancement of rational, patient-oriented drug therapy in hospitals and other organized health care settings.

To the preceding can be added the following objectives:

1. To expand and strengthen institutional pharmacists' abilities to:

(a) Effectively manage an organized pharmaceutical service.

(b) Develop and provide clinical services.

(c) Conduct and participate in clinical and pharmaceutical research

(d) Conduct and participate in educational programs for health practitioners, students, public.

2. To increase the knowledge and understanding of contemporary institutional pharmacy practice by the public, government, pharmaceutical industry, and other health care professionals.

3. To promote compensation and benefits commensurate with pharmacists responsibilities and contributions to patient care.

4. To help provide an adequate supply of qualified supportive personnel for institutional pharmacy services.

5. To help ensure that health care reimbursement and payment systems do not inhibit the implementation of innovative pharmaceutical services or adversely reflect on institutional pharmacy practice.

6. To assist in the development and advancement of the pharmacy profession.

The foregoing serves as a collective statement of goals of the Society and its constituency. Transforming these goals into realities will require the dedicated efforts of all institutional pharmacists, both as individuals and

As members of the society

Standard 1: Administration

The pharmaceutical service shall be directed by a professionally competent, legally qualified pharmacist. He or she must be on the same level within the institution's administrative structure as directors of other clinical services. The director of pharmaceutical services is responsible for:

(1) Setting the long- and short-range goals of the pharmacy based on developments and trends in health care and institutional pharmacy practice and the specific needs of the institution.

(2) Developing a plan and schedule for achieving these goals.

(3) Supervising the implementation of the plan and the day-to-day activities associated with it.

(4) Determining if the goals and schedule are being met and instituting corrective actions where necessary.

Standard II: Facilities

1) Space and equipment, in an amount and type to provide secure, environmentally controlled storage of drugs, shall be available.

2)There shall be designated space and equipment suitable for the preparation of sterile products and other drug compounding and packaging operations.

3)The pharmacy should have a private area for pharmacist-patient consultations. The director of pharmaceutical services should also have a private office or area.

4)Current drug information resources must be available. These should include appropriate pharmacy and medical journals and texts and drug literature search and retrieval resources

Standard III: Drug Distribution and Control

The pharmacy shall be responsible for the procurement, distribution, and control of all drugs used within the institution. This responsibility extends to drugs and related services provided to ambulatory patients. Policies and procedures governing these functions shall be developed by the pharmacist with input from other involved hospital staff (e.g. nurses) and committees (pharmacy and therapeutics committee, patient-care committee, etc.). In doing so, it is essential that the pharmacist routinely be present in all patient-care areas, establish rapport with the personnel, and become familiar with and contribute to medical and nursing procedures relating to drugs.

Standard IV: Drug Information

The pharmacy is responsible for providing the institution's staff and patients with accurate, comprehensive information about drugs and their use and shall serve as its center for drug information.

Standard V: Assuring Rational Drug Therapy

An important aspect of pharmaceutical services is that of maximizing rational drug use. In this regard, the pharmacist, in concert with the medical staff, must develop policies and procedures for assuring the quality of drug therapy.

Standard VI: Research

The pharmacist should conduct, participate in, and support medical and pharmaceutical research appropriate to the goals, objectives, and resources of the pharmacy and the institution.[1,2]

Role of Pharmacist in the pharmaceutical services[3]

1. Receiving written prescriptions or requests for prescription refills from patients or their caregivers.
2. Verifying that the information on the prescription is complete and accurate.
3. counting, weighing, measuring, and mixing the medication
4. preparing prescription labels and selecting the container
5. establishing and maintaining patient profiles
6. ordering and stocking prescription and over-the-counter medications
7. assisting with drug studies
8. taking prescriptions over the telephone
9. transferring prescriptions
10. tracking and reporting errors
11. “tech check tech” in preparation of medicine carts

Organization structure of pharmacy department

With the selection and categorizing of the employees, it now becomes essential to develop a chart showing the flow of administrative authority. Obviously, in the very small departments, this is usually generally understood and no problems arise. However, in the large units with assistant chief pharmacists, supervisors, and lay personnel, authority must be delegated by the chief pharmacist.

In large hospitals, departments of pharmacy have a more complex organization. Note for example, the Ohio State University Hospital's Department of Pharmacy organizational chart. It should seem obvious to the student that each of the subdivisions of the department are assigned specific responsibilities. The following are some of the responsibilities of each division[4]

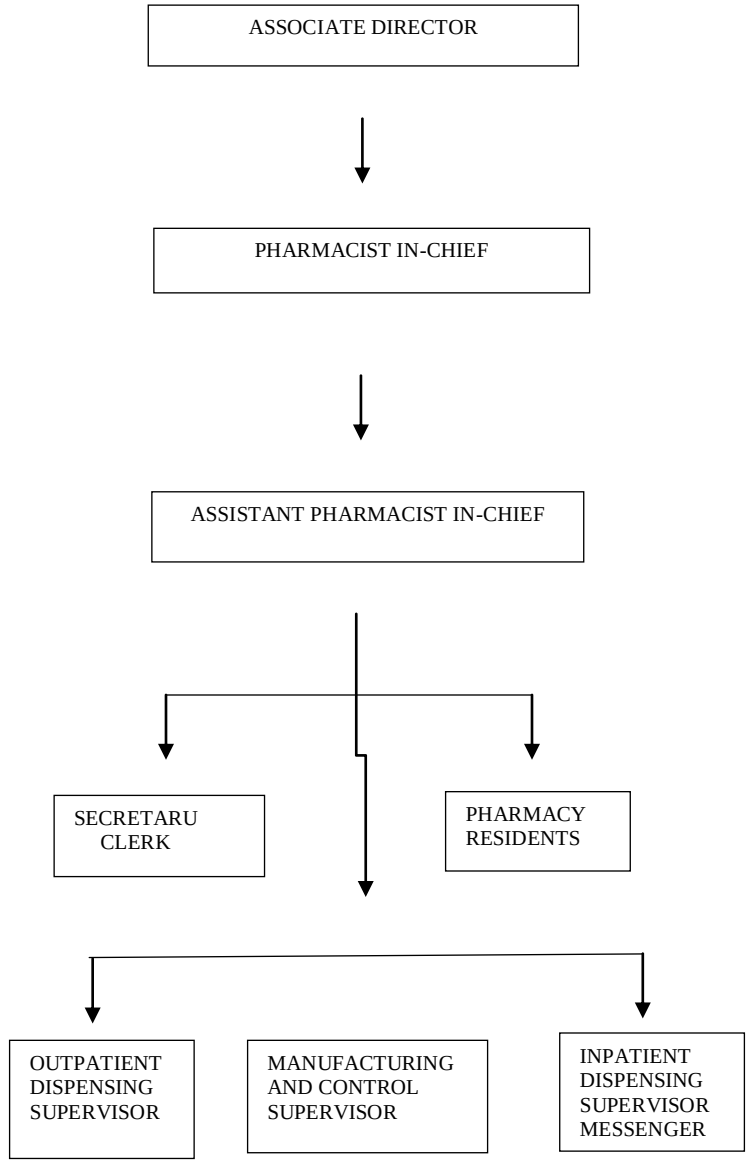

Fig 1: Departmental organization

Pharmacyandtherapeuticscommittee

Themultiplicityofdrugsavailableand thecomplexitiessurrounding theirsafeandeffectiveusemakeitnecessaryforhospitalstohavean organized,sound programformaximizingrationaldrug use. The pharmacyandtherapeuticscommittee,or its equivalent,isthe organizationalkeystoneoftheprogram.Thepharmacyandtherapeuticscommitteeisanadvisorygr oupofthe medicalstaffandservesastheorganizationallineof communication

betweenthemedicalstaffandpharmacydepartment.This committeeis composedof physicians,pharmacists,andotherhealthprofessionals selectedwiththeguidanceofthemedicalstaff.It isapolicy-recommendingbodytothemedicalstaffandtheadministrationofthe hospitalonmattersrelatedtothetherapeuticuseofdrugs.[4,5]

Roleorpurposesofcommittee

Theprimarypurposesofthepharmacyandtherapeuticscommitteeare asspecifiedinthefollowing:

1. ***Advisory***.Thecommitteerecommendstheadoptionof,orassistsin theformulationof, policiesregardingevaluation,selection,and therapeuticuseofdrugsinhospitals
2. ***Educational.*** Thecommitteerecommendsorassistsintheformulation ofprogramsdesignedtomeettheneeds oftheprofessionalstaff (physicians,nurses,pharmacists,andotherhealth-carepractitioners) forcompletecurrentknowledgeonmattersrelatedtodrugsand drug use.[4.5]

OrganizationandOperation

Whilethecompositionandoperationofthe pharmacyandtherapeutics committeemightvaryfromhospitaltohospital,thefollowinggenerally willapply:

1. Thepharmacyandtherapeuticscommitteeshouldbecomposedof atleast three physicians, a pharmacist, a nurse, and an administrator.Committeemembersareappointedbyagoverning unitorelectedofficialoftheorganizedmedicalstaff.
2. Achairmanfromamongthephysicianrepresentativesshouldbe appointed.Apharmacistusuallyisdesignatedassecretary.
3. Thecommitteeshouldmeetregularly,atleastsixtimesperyear, andmoreoftenwhennecessary.
4. The committee should invite toits meetingspersons within or outsidethehospitalwhocancontributespecializedor unique knowledge,skills,andjudgments.
5. Anagendaandsupplementarymaterials(includingminutesofthe previous meeting) should be prepared by the secretary and

submittedtothecommitteemember'sinsufficienttimebeforethe meetingforthem toproperlyreviewthematerial.

6. Minutes of thecommittee meetings should beprepared bythe secretaryandmaintainedinthepermanentrecordsofthehospital.
7. Recommendations of the committee shall be presented to the medicalstaff oritsappropriatecommitteeforadoption or recommendation.
8. Liaisonwithotherhospitalcommitteesconcernedwithdruguse (e.g.,infectioncontrol,medicalaudit)shallbemaintained.[6]

FunctionsandScope

- Thebasicorganizationof thehospitalandmedicalstaffswilldetermine thefunctionsandscopeofthepharmacyandtherapeuticscommittee. Thefollowinglistofcommitteefunctionsisofferedasaguide
- Toserviceinanadvisory capacitytothemedicalstaffandhospital administration in all matters pertaining to the use of drugs (includinginvestigationaldrugs).
- Todevelopaformularyofdrugsacceptedforuseinthehospital andprovideforitsconstantrevision.The selectionofitemstobe includedin theformularywillbebasedonobjectiveevaluationof theirrelative therapeuticmerits,safety,andcost. Thecommittee should minimizeduplicationofthesame basic drug typedrugentity,ordrug product.
- To establish programs and procedures that help ensure cost- effectivedrugtherapy.
- To establish or plan suitable educational, programs for the hospital'sprofessionalstaffonmattersrelatedtodruguse.
- To participate in quality-assurance activities related to the distribution,administration,anduseofmedications.
- Toreviewadversedrugreactionoccurringthehospital.
- Toinitiate(orboth)drug-usereviewprogramsandstudiesand reviewtheresultsofsuchactivities.
- Toadvisethepharmacyintheimplementationofeffectivedrug distributinandcontrolprocedures.

- To make recommendations concerning drugs to be stocked in hospitalpatient-careareas.[6]

Thehospitalformulary[1]

Definitionofformularyandformularysystem

The**formulary**isacontinuallyrevisedcompilationofpharmaceuticals (plus important ancillaryinformation) thatreflectsthecurrent clinical judgmentofthemedicalstaff.

The **formulary system**is a method whereby the medical staff of an institution,workingthroughthepharmacyandtherapeuticscommittee, evaluates,appraises,andselectsfromamongthenumerousavailabledrug entitiesanddrugproductsthosethatareconsideredmostusefulinpatient care.Onlythosesoselectedareroutinelyavailablefromthepharmacy. Theformularysystemisthusanimportanttoolforassuringthequalityof druguseandcontrollingitscost.

The formulary system provides for the procuring, prescribing, dispensing,andadministeringofdrugsundereithertheirnonproprietary orproprietarynamesininstanceswheredrugshavebothnames

Benefitsoftheformularysystem

Thepotentialbenefitsofaformularysystemarethreefold:

(l)Therapeutic.

(2)Economic.

(3)Educational.

The**therapeutic**aspectofa formularysystemprovidesthegreatest benefit to the patient and physician in that only the most efficient productsarelistedandavailable.

The**economic**meritalsohasa doublebenefitinthatthe formulary eliminatesduplicationthus reducinginventoryduplicationandthe opportunityforvolumepurchasingmeanslowerchargestothepatient.

The**educationa**lbenefitis alsosignificantfortheresidentstaff,nurses andmedicalstudentsbecausemany goodformulariescontain various prescribingtipsandadditionaldrug informationofeducationalvalue.

Formatandappearanceoftheformulary

Thephysicalappearanceand structureofthe formularyisanimportant influenceonits use.Althoughelaborateandexpensiveartworkand materialsare unnecessary,theformularyshouldbe visuallypleasing, easilyreadable,andprofessionalinappearance.

The need for proper grammar, punctuation, correct spelling, and neatness is obvious. There is noone singleformat or arrangement whichailformulariesmustfollow.

Atypicalformularymusthavethefollowingcomposition:

1.Titlepage

2. Namesandtitlesofthemembersofthepharmacyandtherapeutics committee

3. Tableofcontents

4. Informationonhospitalpoliciesandproceduresconcerningdrugs

4.1ThepharmacyandtherapeuticscommitteeofXYZhospital

4.2Objectivesandoperationoftheformularysystem

4.3Hospitalregulationsandproceduresforprescribingand dispensingdrugs

4.4Hospitalpharmacyservicesandprocedures

4.5Howtousetheformulary

5. ProductsacceptedforuseatXYZhospital

5.1Itemsaddedanddeletedsince thepreviousedition

5.2Generic-brandnamecrossreferencelist

5.3Pharmacological/therapeuticindexwithrelativecostcodes.

5.4Descriptionsofformularydrugproductsbypharmacology therapeutic

6. Appendix

6.1Centralserviceequipmentandsupplylist

6.2Rulesforcalculatingpediatricdoses

6.3Nomogramforestimatingbodysurfacearea

6-4Scheduleofstandarddrugadministrationtimes

Severaltechniquescanbeusedtoimprovetheappearanceandeaseof useoftheformulary.Amongtheseare:

1. Usingadifferentcolorpaperforeach sectionoftheformulary,
2. Usinganedgeindex,
3. Makingtheformularypocketsize(approximately4"x7")and
4.Printingthegenericnameheadingofeachdrugentryinboldface typeorusingsomeothermethodsformakingitstandoutfromtherest oftheentry.

Thefiverightsforcorrectdrugadministration

Thereare five“rights”ofmedicationadministrationthatofferuseful guidelineswhenfillingprescriptionsfor patientmedications.These conceptshavebeenwidelyusedtoavoidmedicationerrors.A drug misadventureoccurswheneverthesearenotfollowedcorrectly.

- **RightPatient**Alwaysverifythepatientnamebeforedispensing medicines
- **Right DrugAlways**checkthemedicationagainst the original prescriptionand the patient’sdiseasestate.Themedicationlabel contains important information about the drug that will be dispensedtothepatient.
- **Right Strength** Check the original prescription for this informationandpayattentiontotheage ofthepatient.Pediatricor elderlypatientcaneasily getthewrongdose.
- **Right Route** Check that the physician’s order agrees with the drug’sspecifiedrouteofadministration.Manymedicationscan be givenbyavarietyofroutesandtherouteofadministrationcan affectthemedication’sabsorption.
- **RightTime**Checktheprescriptiontodeterminetheappropriate time for the medication to be administrated. Some medications mustbetakenonanempty stomach(onehourbeforeortwohours afterameal)whileothersshouldbetaken withfood.Sometimes,a certaintime span is needed betweendoses to maintain a therapeuticallyeffectivebloodlevel.

Organizations

Hospital pharmacy societies have been formed in many countries, including Estonia, South Africa, and Peru, in response to the evolution of hospital pharmacy practice. These organizations serve to support the pharmacists practice in the hospital setting. However,

there is not onesociety that represents hospital pharmacy on an internationalbasis. The International Pharmaceutical Federation(FIP) has a hospital pharmacy section that attempts to solidifya global relationship between pharmacists throughdiscussion and exchange of experiences; however, only recentlyhas this organization begun to welcome individualmembers. In the past, only organizations could join the FIP.Many hospital pharmacy societies have endorsed standardsfor practice including Canada, the Netherlands, andIreland.The constant theme throughout these standardsis pharmacists' responsibility to the patient for pharmacotherapeuticoutcomes. The Good Pharmacy PracticeGuidelines developed by the FIP, and subsequently adoptedby the World Health Organization, state that a pharmacist'sfirst concern should be the welfare of the patient.These guidelines were first adopted in 1997 to help nationalcouncils develop national standards; however, there hasbeen no update since that time.[7]

Clinical Activities

There is a wide range of clinical pharmacy activitiesperformed throughout the world, which include, but arenot limited to, patient medication review, ward rounds,therapeutic drug monitoring, drug information, inserviceeducation, medication counseling, medication histories,drug utilization evaluations, adverse drug reaction (ADR)management, clinical research, and participation in specialtyteams.In many countries, clinical pharmacy servicesare still in their infancy, with pharmacists spending apredominant amount of time on distributive and manufacturingactivities. However, the development of clinical servicesservices is increasing. For example, pharmacists in Japan previously spent a great deal of time in manufacturing of products,but recently, approximately 50% of inpatients received clinical services on the wards in this country.A questionnaire circulated in 2001 to hospital pharmacies in Australia showed that 41% of the pharmacists time was spent in clinical activities dedicated to the patient, drug information services, training, and education; 39% of the time was dedicated to acquisition, manufacture, and dispensingof medications; and 16% of the time was allocated to managing drug and personnel resources.Clinical pharmacy services in Korea are not well established, as evidenced by a study on ADR reporting, in which no reports were made by a pharmacist.As well as considerable inter-country variability in thepractice of hospital pharmacy, there is much intra-country variability. This is true for Africa, where many of the countries in the past undertook the style of pharmacy practice of its many colonists.For example, certain countries in West Africa

took on the standards of either British or French colonists, whereas North Africa was subject to Arabic influence. In the past, practice between the northernand southern parts of Nigeria were very different due to different educational standards.In a survey of hospital pharmacy services in Australia in 1998, wide variations were reported between the states in many different areas, including ADR monitoring (50–100%) and manufacturing of non-sterile products (35.5–100%).The European Association of Hospital Pharmacy (EAHP) conducted surveys in 1995 and 2000, comprising 16 European countries**,** however, only a portion of the surveys concentrated on clinical duties. Regardless, striking differences were seen between many of the countries.

In the most recent survey, for example, pharmacokinetic consults were provided in <1% of hospital pharmacies in Austria, but >6% in the Netherlands and the UK. Although it appears that these numbers are low compared with those from the American survey in 2003,the questions mayhave been worded differently and the data may not have been collected in the same way. This limits the ability to compare this information. To our knowledge, the only other international survey published was a combination of 2 surveys conducted by the FIP in 52 countries in the mid1970s, focusing mainly on community pharmacy.In Pakistan, there are opportunities for pharmacists to become more involved with patient care; however, there are difficulties with identifying their role and responsibilities and having those recognized by hospital administrators, government, and patients.A study was conducted in a 220-bed Nigerian teaching hospital examining communication between pharmacists and elderly patients during medication history interviews to identify the communication gaps between pharmacists and patients.Only a small number of pharmacists were willing to participate in the study due to time commitment or refusal to be videotaped. The results illustrated miscommunication during verbal interactions with elderly patients. In many developing countries, clinical pharmacy has not yet begun to be realized. The role of the hospital pharmacist in Armenia is classic, with the traditional responsibility of storage, production, and distribution of drugs[7,8]

Impact of a Pharmacist

Another statement from the SHPA declares that all patients should receive clinical pharmacy services as part of routine care since clinical pharmacists have been shown to decrease the incidence of adverse drug events (ADEs). This is based on a study of the impact of pharmacists in 8 Australian teaching hospitals that documented the clinical impact of pharmacist-initiated drug therapy.Twenty-five percent of the interventions were determined to be of major

significance (preventing or addressing very serious drugrelated problems). Thirty-eight percent of the interventions were of moderate significance (prevented major temporary injury, enhanced the effectiveness of drug therapy, or produced minor decreases in patient morbidity or a <20%chance of noticed effect), and 30.4% were of minor significance (small adjustments and optimizations of therapy). One percent of the interventions documented were life-saving. The Gillie report described a high rate of drug administration errors in British hospitals in the late 1960s, and ward-based practice of pharmacy was a direct consequence and solution to this.A more recent article from Israel documented 160 medication errors over a 6-month period (11.2 errors/1000 prescriptions) and showed that pharmacists identified and rectified these errors.Of the documented errors, subsequent pharmacy interventions were accepted in 87.5% of cases. The introduction of a clinical pharmacist to an intensive care unit (ICU) team in Pakistan demonstrated a high acceptance rate of interventions (91.6%) and has led to the creation of other clinical positions in varying practices in the hospital.Hospital pharmacy interventions have also been demonstrated to have a cost-savings in many countries. Dooley et al.reported that the annualized cost-savings associated with economically measured resources due to pharmacists'interventions was $4 447 947 (AUS) in the 8 institutions; $23 were saved for every $1 spent on a pharmacist to initiate an intervention. A hospital in Spain reported pharmacist interventions regarding antibiotic prophylaxis, pharmacokinetics, thromboembolism prophylaxis, non-formulary prescription requests, inappropriate duration, and others were associated with a cost-savings of 129 059 over a 6-month period.In Canada, the addition of a clinical pharmacist to an ICU resulted in pharmacist-initiated consultations leadingto an annualized cost-savings of approximately $67 665 (CAN) in 1994.The introduction of a part-time pharmacist into the ICU in Malaysia resulted in savings of $4014 (US) over one month.[9,10]

Pharmacy profession in India

Currently there are over a million pharmacists in India with around 55% of them in community, 20% in hospital, 10 % in industry & regulatory. And 2 % in academia in India, formal pharmacy education leading to a degree began in 1937, with the introduction of a 3 year industry – oriented Bachelor of Pharmacy course. To meet the varying needs of the profession at different levels the following pharmacy programs are offered in India today: Diploma in Pharmacy (D.Pharm.), Bachelor of Pharmacy (B.Pharm.), Master of Pharmacy (M.Pharm.), practice- based Doctor of Pharmacy (Pharm.D.), and Doctor of Philosophy in Pharmacy (Ph.D.). To practice as a

pharmacist in India, one needs at least a diploma in pharmacy, which is awarded after 2 years and 3 months of pharmacy studies & practical training. These diploma-trained pharmacists are currently the mainstay of pharmacy practice in India. Every year nearly 20000 D. Pharm, 30,000 B. Pharm, 6000 M.Pharm and 700 Pharm.D. Students graduate in the Country. Pharmacy Council of India (PCI) is the statutory body established in 1949, for regulating pharmacy education and practice of pharmacy profession in India. PCI is actively working towards strengthening and upgrading the curriculum to produce competent workforce that is able to meet the growing demands of the industry & community. In 2003, the Pharma Vision 2020 Charter was released by the then President of India, Dr. A.P.J. Abdul Kalam, at the 55th Indian Pharmaceutical Congress at Chennai. The Vision 2020 is focused on promoting the highest professional ethical standards of pharmacy, focusing the image of pharmacists and competent healthcare professionals, sensitizing the community, government and others on vital professional issues and supporting pharmaceutical education and sciences in all aspects. Indian Pharmaceutical Association once again, with the support of the leaders of the pharmacy profession presented the road map to Pharma Vision 2020 at the 58th Indian Pharmaceutical Congress held in December 2006 at Mumbai. The themes of the subsequent Congresses in the country have been centered on Pharma Vision 2020.[3,9,10]

CONCLUSION

Each pharmacy institute should operate a model pharmacy; this would not only improve the image of pharmacists in Indian society but provide an opportunity for pharmacy students to train in community practice. The minimum wages established by state governments for pharmacists working in drugstores should be properly implemented and periodically revised. Even though medicines are now dispensed in the manufacturer's original pack wherever possible, additional labeling should include generic name and strength, dose and frequency, date of dispensing, name of patient, name and address of dispenser and pharmacy, and date after which the product in not to be used. Finally, to improve patient compliance, oral or written instructions should be provided by the pharmacist. Although raising the minimum qualification of registered pharmacists to the B.Pharm, degree is desirable, the economics of employing pharmacists in drug stores, particularly in remote rural areas, need to be considered. Even if standards for good pharmacy practice are set in India, it will take years to meet them fully, until then, pharmacists in

hospital and community setting need to take steps on their own to improve their image and protect the health of patients and the public.

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