

ROLE OF PHARMACIST IN SUPERSPECIALITY AND MULTISPECIALITY HOSPITALS: A CORRELATION APPROACH

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ABSTRACT

Hospital pharmacists are responsible for monitoring the supply of all medicines used in the hospital and are in charge of purchasing, manufacturing, dispensing and quality testing their medication stock along with help from pharmacy assistants and pharmacy technicians. Public health is a multidisciplinary area which correlates various other fields so as to strengthen the quality of life. Public health practice in the modern era requires multidisciplinary approaches, where a team of public health workers and other professionals work together for the betterment of the community. Pharmacists play a vital role as an ideal professional for public health at the forefront of health care. The knowledge, skills and expertise of a pharmacist enable them to support the public health care by promoting healthy lifestyles, preventing long-term illness and by guiding patients to better manage their medicines. A community pharmacist strengthens the public health system in a broad perspective. This article focuses on role of pharmacist and the pharmaceutical industry in the public health management.

Public health can be defined as "the science and art of preventing disease, prolonging life and promoting human health through organized efforts and informed choices of society, organizations, public and private communities and individuals".

KEYWORDS: Healthcare, ICU, Emergency, Blood Bank, X Ray, Pathology, MRI, Drugs, Medicines, NABH.

Oath: An oath is a promise. An oath is a public pledge that a person will perform some action or duty, generally with the promise of doing so truthfully. An oath can also be used as a way of promising oneself to support a cause

or an entity. Oaths are often done in the name of a deity-like swearing "under God"—though this is not always the case.



Figure-1: Pharmacy Logo.

Pharmacist's oath: *I shall strive to perfect and enlarge my knowledge to contribute to the advancement of pharmacy and public health. I shall follow the system which I consider best for Pharmaceutical care and counseling of patients. I shall endeavor to discover and manufacture drugs of quality to alleviate sufferings of*

humanity. I promise to devote myself to a lifetime of service to others through the profession of pharmacy. In fulfilling this vow:

I will consider the welfare of humanity and relief of suffering my primary concerns.

I will promote inclusion, embrace diversity, and advocate for justice to advance health equity.

I will apply my knowledge, experience, and skills to the best of my ability to assure optimal outcomes for all patients.

I will respect and protect all personal and health information entrusted to me.

I will accept the responsibility to improve my professional knowledge, expertise, and self-awareness.

I will hold myself and my colleagues to the highest principles of our profession's moral, ethical and legal conduct.

I will embrace and advocate changes that improve patient care.

I will utilize my knowledge, skills, experiences, and values to prepare the next generation of pharmacists.

I take these vows voluntarily with the full realization of the responsibility with which I am entrusted by the public."



Figure-2: Pharmacy and Drug store.

Code of ethics: The pharmacy is a clinical health science that connects medical science and chemistry and is responsible for the discovery, disposal, manufacturing, effective and safe usage, and management of pharmaceuticals and treatments. Certain pharmacist specialties, such as clinical pharmacy, require additional abilities, such as understanding the collection and evaluation of physical and laboratory data. A pharmacist has a duty to tell the truth and to act with conviction of conscience. A pharmacist avoids discriminatory practices, behavior or work conditions that impair professional judgment, and actions that compromise dedication to the best interests of patients.^[1]

Beneficence

Non-maleficence

Respect for persons/justice

Accountability (fidelity).

Pharmacist: A pharmacist is a health care professional specializing in the usage and administration of medication. They dispense prescriptions to patients upon receiving a physician's orders. Pharmacists are experts on how drugs work and interact with the body so that patients who take them achieve the best possible results. A pharmacist, also known as a chemist or a druggist, is a healthcare professional who dispenses medications and who provides advice on their effective use, with the aim of preventing disease and promoting public health. Pharmacists often serve as primary care providers in the community, and may offer other services such as health screenings and immunizations. Pharmacists undergo university or graduate-level education to understand the biochemical mechanisms and actions of drugs, drug uses,

therapeutic roles, side effects, potential drug interactions, and monitoring parameters. This is mated to anatomy, physiology, and pathophysiology. Pharmacists interpret and communicate this specialized knowledge to patients, physicians, and other health care providers. Among other licensing requirements, different countries require pharmacists to hold either a Bachelor of Pharmacy, Master of Pharmacy, or a Doctor of Pharmacy degree. The most common pharmacist positions are that of a community pharmacist (also referred to as a retail pharmacist, first-line pharmacist or dispensing chemist), or a hospital pharmacist, where they instruct and counsel on the proper use and adverse effects of medically prescribed drugs and medicines. In most countries, the profession is subject to professional regulation. Depending on the legal scope of practice, pharmacists may contribute to prescribing (also referred to as "pharmacist prescriber") and administering certain medications (e.g., immunizations) in some jurisdictions. Pharmacists may also practice in a variety of other settings, including industry, wholesaling, research, academia, formulary management, military, and government.

Nature of work: Historically, the fundamental role of pharmacists as a healthcare practitioner was to check and distribute drugs to doctors for medication that had been prescribed to patients. In more modern times, pharmacists advise patients and health care providers on the selection, dosages, interactions, and side effects of medications, and act as a learned intermediary between a prescriber and a patient. Pharmacists monitor the health and progress of patients to ensure the safe and effective

use of medication. Pharmacists may practice compounding; however, many medicines are now produced by pharmaceutical companies in a standard dosage and drug delivery form. In some jurisdictions, pharmacists have prescriptive authority to either

independently prescribe under their own authority or in collaboration with a primary care physician through an agreed upon protocol called a collaborative practice agreement.



Figure-3: Wholesale & Retail medical shop.

Increased numbers of drug therapies, aging but more knowledgeable and demanding populations, and deficiencies in other areas of the health care system seem to be driving increased demand for the clinical counseling skills of the pharmacist. One of the most important roles that pharmacists are currently taking on is one of pharmaceutical care. Pharmaceutical care involves taking direct responsibility for patients and their disease states, medications, and management of each to improve outcomes. Pharmaceutical care has many benefits that may include but are not limited to: decreased medication errors; increased patient compliance in medication regimen; better chronic disease state management, including hypertension and other cardiovascular disease risk factors; strong pharmacist–patient relationship; and decreased long-term costs of medical care. Pharmacists are often the first point-of-contact for patients with health inquiries. Thus pharmacists have a significant role in assessing medication management in patients, and in referring patients to physicians. These roles may include, but are not limited to: clinical medication management, including reviewing and monitoring of medication regimens, assessment of patients with undiagnosed or diagnosed conditions, and ascertaining clinical medication management needs, specialized monitoring of disease states, such as dosing drugs in kidney and liver failure, compounding medicines, providing pharmaceutical information, providing patients with health monitoring and advice, including advice and treatment of common ailments and disease states, supervising pharmacy technicians and other staff, oversight of dispensing medicines on prescription, provision of and counseling about non-prescription or over-the-counter drugs, education and counseling for patients and other health care providers on optimal use of medicines (e.g., proper use, avoidance of overmedication), referrals to other health professionals if necessary, pharmacokinetic evaluation, promoting public health by administering immunizations, constructing

drug formularies, designing clinical trials for drug development, working with federal, state, or local regulatory agencies to develop safe drug policies, ensuring correctness of all medication labels including auxiliary label, member of inter-professional care team for critical care patients, symptom assessment leading to medication provision and lifestyle advice for community-based health concerns (e.g. head colds, or smoking cessation, staged dosing supply (e.g. opioid substitution therapy). Pharmacy is a subject which runs on its two legs: chemistry & biology. So, when anyone having expertise in two basic subjects then he/she will be capable to embrace pharmacy as a profession.

Education: Pharmacists are educated in pharmacology, pharmacognosy, chemistry, organic chemistry, biochemistry, pharmaceutical chemistry, microbiology, pharmacy practice (including drug interactions, medicine monitoring, medication management), pharmaceuticals, pharmacy law, pathophysiology, physiology, anatomy, pharmacokinetics, pharmacodynamics, drug delivery, pharmaceutical care, nephrology, hepatology, and compounding of medications. Additional curriculum may cover diagnosis with emphasis on laboratory tests, disease state management, therapeutics and prescribing (selecting the most appropriate medication for a given patient). Upon graduation, pharmacists are licensed, either nationally or regionally, to dispense medication of various types in the areas they have trained for. Some may undergo further specialized training, such as in cardiology or oncology or long term care.

Drug & Medicines: Drug (API: Active Pharmaceutical Ingredient) is a substance which is also called as Xenobiotics which means Xeno=outer source; Biotics=active *in-vivo*. The term xenobiotic is derived from the Greek words ξένος (xenos) = foreigner, stranger and βίος (bios) = life, plus the Greek suffix for adjectives -τικός, -ή, -όν (-tikos, -ē, -on). So every drug is a chemical substance which is coming inside of body from

outer source having definite chemical network, obtained from either synthetic source, semisynthetic source and natural source [plant (flora), animal (fauna), mineral (soil) and marine (ocean/sea)] having capacity to fit on

bioreceptor platform having controlling capacity to check biochemical malfunction inside the body with low toxicological parameters ADMET [administration, distribution, metabolism, excretion & toxicology.



Figure-4: Drugs & Medicines.

The term pharmacology is obtained from the Greek word “pharmakon” meaning as drug and “logos” means the study or science. Definition: The term pharmacology is obtained from the Greek word “pharmakon” meaning as drug and “logos” means the study or science. Medicine is a substance which is made of excipients with drug to produce a formulation so that it can be easily administered into the body.^[2]

Superspeciality Hospital: A single super speciality hospital is defined as a hospital that is primarily and exclusively engaged in the care and treatment of the patients suffering from a specific illness. They offer specialized services to their patients. A multi-speciality hospital must have more than one speciality but they can be the broad specialities like Medicine, Surgery, Pediatrics etc. A super-speciality is a sub-speciality. Like Neurosurgery, Cardiac Surgery, Vascular Surgery, Surgical Oncology. Expert-Verified Answer. DM is a medical super specialisation that can be done in branches like Cardiology, Neurology, Nephrology,

Gastroenterology and more. MCh is a super speciality that can be done in branches like Cardiothoracic and Vascular Surgery, Endocrine Surgery, Neurosurgery, Urology, Plastic Surgery etc.

Difference between super speciality and multi-speciality are as follows:

- A super-speciality means it is related to only a particular thing.
- A multi-speciality means it is related to more than one aspect.
- For example, Super specialty hospitals offer treatment for a particular disease.
- Multispeciality hospitals offer treatment for multiple diseases.
- Super-specialty hospitals have only two or three major departments with tertiary care facilities.
- Multispeciality hospitals deal with basic medical, and surgical, etc. They will provide secondary care services also.

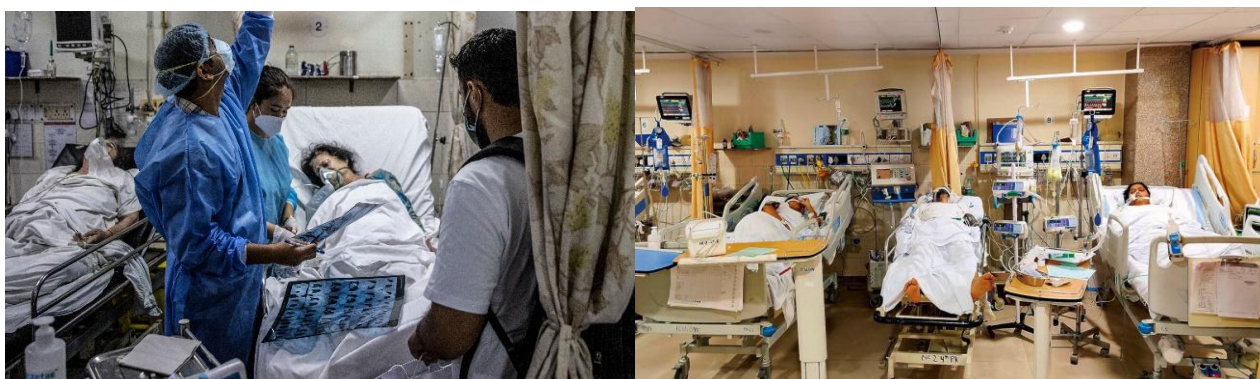


Figure-5: Emergency & ICU.

Multispeciality Hospital: A multispeciality hospital is what its name implies – a medical treatment facility that offers specialized treatment for various medical conditions. The quality of medical care is on par with the

best specialty hospitals – the difference is that more medical problems are treated. General hospitals are a non-specialized healthcare provider that offers primary and general treatment for patients with all types of

medical conditions. Multispecialty Hospital, on the other hand, addresses different branches of medicine under one roof and also offer surgical treatment and diagnostic services. A Multi-speciality Hospital is one that has facilities for all ailments and diseases with an expert team of doctors and specialists. The patients are so immensely taken care of with air-conditioned rooms and canteens inside and personalized care. The amenities could include these but not limited to: General Medicine.

Role of Pharmacists in Superspeciality Hospitals:

Hospital pharmacists will often monitor the effects of the medications they prescribe and counsel their patients on the effects of the drugs. Another aspect of this role is to recommend administration routes and dosages, all of

which are dependent on an individual's needs. Hospital pharmacists' duties include administrative duties, clinical service patient care, drug distribution, drug control, ensuring medication safety, and activities for quality and performance improvement. As well as their daily roles dispensing medication and offering expert advice, hospital pharmacists can also be involved in manufacturing medicines when ready-made preparations are not available. Other positions include being involved in procurement, radiotherapy, quality assurance, education and clinical trials. After hospital discharge, community pharmacists are often the first health care professionals the discharged patient encounters. They reconcile and dispense prescribed medicines and provide pharmaceutical care.



Figure-6: Blood Bank & Pathology.

Pharmacists can optimise the medication management of patients in cardiac day wards by performing medication review, and facilitating implementation and communication of medication changes at hospital discharge to patients and primary healthcare providers. As well as their daily roles dispensing medication and offering expert advice, hospital pharmacists can also be involved in manufacturing medicines when ready-made preparations are not available. Other positions include being involved in procurement, radiotherapy, quality

assurance, education and clinical trials. Pharmacists are responsible for:

The quality of medicines supplied to patients.

Ensuring that the supply of medicines is within the law.

Ensuring that the medicines prescribed to patients are suitable.

Advising patients about medicines, including how to take them, what reactions may occur and answering patients' questions.

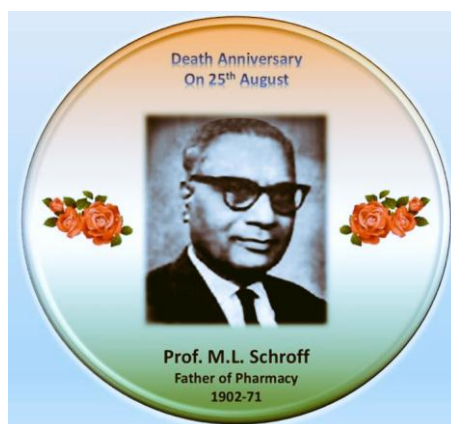


Figure-7: Prof M L Schroff.

The Father of Pharmacy in India is Prof Mahadeva Lal Schroff [6th 1902- 25th August 1971]. He earned this title through his contributions, which included giving

India's pharmaceutical industry and educational system the right direction. Furthermore, he wasn't even a trained pharmacist, yet he had such a significant impact on the

pharmacy industry. Mahadeva Lal Schroff: father of Indian pharmacy education. Prof. Mahadeva Lal Schroff was born in the Bihar city of Darbhanga on March 6, 1902. He finished his education at Bhagalpur (Bihar) and passed his intermediate test in 1920. Following that, he enrolled in the Engineering College at Banaras Hindu University (BHU) in Varanasi, India. Prof. Schroff was ordered to leave the institution in 1921 after speaking out against the then-principal, Charles A. King. Prof. Schroff left India after graduating from engineering school and spent time in China, Japan, and America. He earned his UG degree in arts with honors in chemistry in 1925 and his PG degree in chemistry and microbiology from the Massachusetts Institute of Technology (MIT) in 1927.

Role of Pharmacists in Multispeciality Hospitals:
Recognizing untreated health conditions that could be

managed with medication therapy. Monitoring patient progress with medications and making relevant recommendations to change. Advising patients about the best way to take medications. Assisting in direct care of patients in hospitals and surgeries. When we hear the word 'pharmacy', the first thought that strikes our mind is dispensing and supplying medications required by the patients. But is that the only job of a pharmacist? Along with the healthcare environment, the role of hospital pharmacists is evolving like never before! The programs led by the 24-hour pharmacy department ease care transitions by addressing medication adherence, reducing the occurrence of adverse drug events, and lowering readmission of patients through optimal services such as bedside prescription, prompt counseling before discharge, and telephonic consultations.^[3]



Figure-8: Superspeciality & Multispeciality Hospital.

While delivering medications is the utmost priority of the pharmacy department, their role extends far beyond – rightly in patient care. Read on to understand the contribution of hospital pharmacists in enhancing patient outcomes. One of the vital healthcare teams of the hospital, pharmacy hasn't got much recognition among the patients and caregivers. Involved in manufacturing,

developing, testing, supplying, and monitoring the effectiveness of all of the medicines used in the treatment, every pharmacist specializes in wider aspects of hospital functioning. Most importantly in developing protocols and discussing regulations with the doctors and nurses, these technicians work closely with all the associates that run amidst the management.



Figure-9: MRI & USG.

The duties and responsibilities of a multispecialty hospital pharmacist are given below:

Compounding and dispensing for indoor and outdoor patient departments.

Preparation and sterilization of injectable medications

Filing and labeling of medical stocks

Proper maintenance of records (especially narcotic medications)

Maintaining sufficient stock of emergency medicines

Conducting quality check of the source of purchase (medicines, antibiotics, biological products and other pharmaceutical items)

Sharing details of medicine to doctors, specialists, interns, and nurses.

Planning and executing the pharmacy & therapeutic committee.

Ensuring that the supply of medicines is within the law

Making sure that the prescribed medications are suitable for the patients

Advising patients according to their symptoms (how & when to take them, possible reactions, pre-allergy information, answering patient's doubts and so on)

Supporting patients to make healthier choices, directing them towards nutritious diet and suitable exercises.

Improve hospital healthcare infrastructure

Hospital pharmacists are fully qualified to understand the medical history, lifestyle, existing medication, and beliefs of the patient and follow individualized treatment plans. For cases that offer a greater degree of complexity, hospital pharmacists can impart their skills particularly to those who are affected with chronic conditions such as heart, liver, or kidney diseases. Once the information is obtained, the team of pharmacists helps in delivering qualified decisions for prescribing medication. Both physicians and pharmacists meet patients from the point of diagnosis through treatment to coordinate better care. In this way, patients and caregivers can develop a better understanding of health conditions, and the requirement

of prescribed medications while optimizing the treatment plan.^[4]

Superspeciality & Multispeciality Hospitals

National Accreditation Board for Hospitals & Healthcare Providers), abbreviated as NABH, is a constituent board of Quality Council of India (QCI), set up to establish and operate accreditation programme for healthcare organizations. Formed in 2005, it is the principal accreditation for hospitals in India.

Belle Vue Clinic, Kolkata; Goodace Hospital, Prafulla Kanan, Kolkata; AMRI Hospitals – Salt Lake, Kolkata; Seba Magnum Ppl Hospital, Salt Lake City Sector 1, Kolkata; Techno Global Multi Speciality Hospital, Salt Lake City Sector 3, Kolkata; AMRI Hospitals, Mukundapur, Kolkata; Dhakuria, Kolkata; Ruby General Hospital, Kolkata; Fortis Hospital, Kolkata; Seba Magnum Ppl Hospital Beside, Salt Lake City Sector 1, Kolkata; Rabindranath Tagore International Institute of Cardiac Sciences, Kolkata; Kothari Medical Centre, Kolkata; Medica Hospital, Kolkata; Techno Global Multi Speciality, Salt Lake City Sector 3, Kolkata; Techno India DAMA Healthcare & Medical Centre, Salt Lake City, Kolkata; Ariyan Hospital Multispeciality, Kolkata; Anandalok Hospital, Salt Lake City Sector 2, Kolkata; J.N. Ray Hospital Manicktala, Kolkata; Charnock Hospital, Kolkata; Kasturi Medical Centre Pvt Ltd, Joka, Kolkata; Desun Hospital Near Desun More Kasba East Kolkata Township, Kolkata; Parkview Super Speciality Hospital, Kolkata; North City Hospital Near Ultadanga Hudco Bus Stop Kankurgachi, Kolkata; Institute of Post Graduate Medical Education & Research [PG Hospital], Kolkata; Metiabruz Super-Speciality Hospital Rajabagan Dy, Kolkata; M R Bangur Hospital, Tollygunj, Kolkata; Rana Bhai Medical Support Pvt Ltd; Desun Hospital Sarat Bose Road, Kolkata; Priyojon Hospital & Research Centre, Raja Ram Mohan Roy Sarani, Kolkata; Sherling Superspeciality Hospital Near Rajballvpur, Kolkata;

Zodiac Medicare & Hospital Pvt Ltd Near Swimming Club Govinda Khatick Road, Kolkata; Shree Jain Hospital & Research Centre; Sramajibi Hospital Near

LAL Baba College Belur Math Belur Math, Howrah; Orchid Hospital Beside Indian Oil Pump Chanditala, Hooghly.

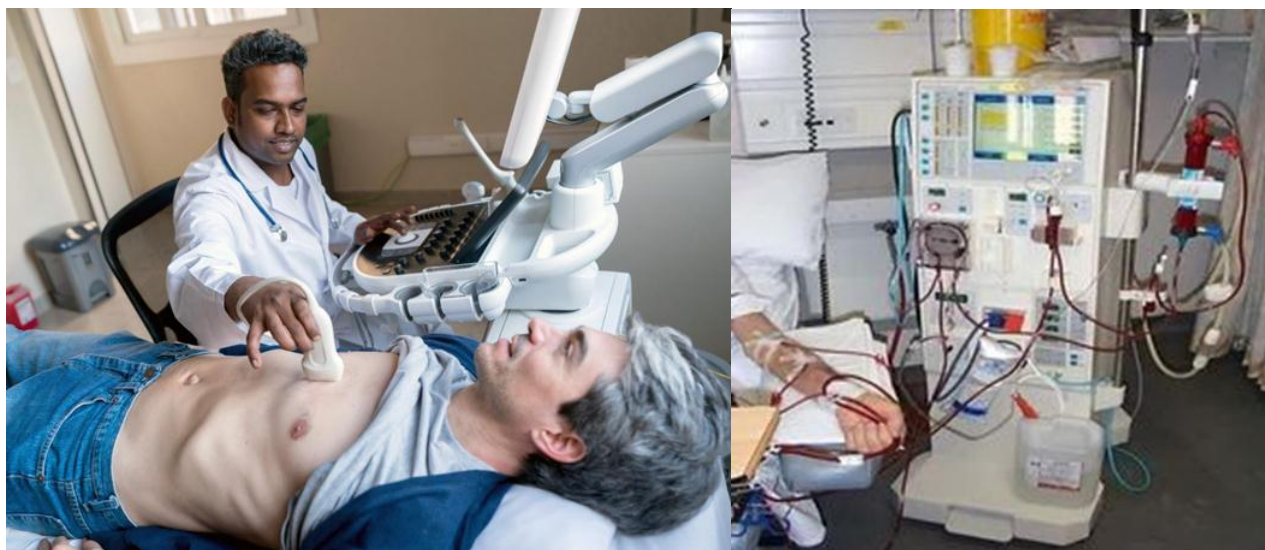


Figure-10: Echocardiography & Dialysis.

Requirements for Superspeciality & Multispeciality Hospitals

General Medicine, General Surgery, Obstetrics and Gynaecology, Paediatrics, Orthopaedics, Anaesthesiology, Emergency Medicine & Trauma, Critical Care Medicine (e.g. HDU, ICU), ENT, Endoscopy, Ophthalmology, Psychiatry, Dermatology, Community Health, Palliative Medicine, Geriatric Care, Family Medicine, Dentistry, Physical Medicine, Rehabilitation, Transfusion Medicine/Blood Storage Centre/Blood Bank, Registration/help desk and billing, Diagnostic Services Laboratory, EEG, ECG, Imaging Services & Non-imaging services [Breast CT Scan, Computerized Tomography (CT) Scan, Magnetic Resonance Imaging (MRI) Scan, Nuclear Medicine Scan, PET/CT Scan, Positron Emission Tomography (PET) Scan, Ultrasound, X-Ray.], Pharmacy and Stores, CSSD/Sterilization Area, Central Sterile Services Department, Linen management, Kitchen & Dietary Services, Waste Management Services (General and Biomedical), Medical Gas Supply, Storage & Distribution, Clinical Establishment Act Standards for Hospital, Ambulance service, Psoriasis Treatment, Hypertension Treatment, Cirrhosis, Otoplasty, Gallstones, Colonoscopy, Bronchoscopy, Chemotherapy, Laryngoscopy, Liver Cancer, Rheumatology, Kidney Tumor, Limping Child, Neuro Surgery, Complex Trauma, Foot Infection, Gout Treatment, Ovarian Cancer, Tanning, Arthroscopy, Gastro Surgery, Hip Replacement, Combination Skin Grafting, Eczema Treatment, Contact Dermatitis, Dementia Treatment, Dental Restoration, Epilepsy Treatment, Migraine Treatment, Knee Pain Treatment, Skin Rash Treatment, Spinal Disc Surgery, Gall Bladder Surgery, Dentofacial Orthopedics, Sciatica Pain Treatment, Nuclear Medicine, House keeping, Library, Fire Brigade Service.

CONCLUSION

Hospital pharmacists operate in different departments in a set amount of time including clinical wards and medicinal processes. Working in rotation allows pharmacists to develop well-rounded skill sets in every specialization that ultimately promotes the safe use of medications and improves overall patient outcomes.

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