

**INDIAN ACADEMICIANS SEED, HARVEST, GERMINATE & CULTIVATE THE BUDDING
PHARMACISTS TO SERVE FOR MANKIND BECAUSE SERVICE TO HUMAN IS THE SERVICE TO GOD****Prof. Dr. Dhrubo Jyoti Sen***

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Outlook: Before you pray for life: Believe on Pharmacist**Before you speak to doctor: Listen to Pharmacist****Before you spend money for medication: Earn the trust on Pharmacist****Before you write your consent: Think over Pharmacist's devotion****Before you quit from life: Try to feel Pharmacist's noble profession****Before you die: Live with Pharmacist's oath.**

TEACH & LEARN both are five-man army in the field of pedagogy. Actually T-EACH & L-EARN is the focus to **EACH** and every person to **EARN** something after implementation of basic knowledge which has been grasped through the diploma [DPharm] or baccalaureate

[BPharm] or postbaccalaureate [MPharm] or in doctoral course [PhD] in pharmaceutical science. Pharmacy is a vast subject totally embedded into the application of therapy through medication by proper nursing.



Figure-1: Correlation between teaching & learning [Prof. Dr. Badmanaban Ramalingam, Dr. Bharat Mishra, Prof. Dr. Dhrubo Jyoti Sen and Dr. Shyam Kumar. B; Pedagogy in academic platform blooms well by following Bloom's taxonomy: European Journal of Biomedical and Pharmaceutical Sciences: 5(1), 222-227, 2018.]

Pedagogy is the discipline that deals with the theory and practice of teaching that informs teaching strategies, teacher actions and teacher judgments and decisions by taking into consideration theories of learning, understandings of students and their needs and the backgrounds and interests of individual students. Pedagogy includes how the teacher interacts with students and the social and intellectual environment the teacher seeks to establish. A true academician is a person who has grasping power of subject expertise and Gateway of basic knowledge has to be focused on traffic personalization.



Figure-2: Correlation between mission & vision [Prof. Dr. Dhrubo Jyoti Sen; Gateway of basic research is focused on researchgate by web traffic: World Journal of Pharmaceutical and Life Sciences: 4(6), 01-06, 2018].

Pharmacy is subject which runs on its two legs: chemistry & biology. An academician is a person who can correlate these two basic subjects with compilation to give best outcome of cream to the global domain by far-sight. Reflection of elements of periodic table in pharmaceutical science through correlation approach of

far-sight of pharmacy which is the vision of pharmacy (phar-sight) in globalization in past and current millennium. Indian pharmaceutical academician is the best contributor of basic knowledge to pharmacy practice throughout the nation.



Figure-3: Pharmacy & Pharmacist [Vikramkumar Vishnubhai Patel, Prof. (Dr.) Dhruvo Jyoti Sen and Prof. (Dr.) Satyanand Tyagi; Correlation between cheminformatics and bioinformatics in drug discovery: a farsight of pharmacy- the millennium oath: Journal of Drug Discovery and Therapeutics: 1(5), 47-54, 2013]

Oath/Promise of a pharmacist as Ten commandments in pharmacy practice in India:

As a pharmacist, I vow to serve humanity and to support my profession's ideals and commitments:

- I swear by the code of ethics of Pharmacy Council of India, in relation to the community and shall act as an integral part of health care team
- I shall uphold the laws and standards governing my profession
- 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 counselling of patients
- I shall endeavour to discover and manufacture drugs of quality to alleviate sufferings of humanity
- I shall hold in confidence the knowledge gained about the patients in connection with my professional practice and never divulge unless compelled to do so by the law
- I shall associate with organizations having their objectives for betterment of the profession of pharmacy and make contribution to carry out the work of those organizations
- I shall nurture the preparation of future members of my profession
- While I continue to keep this oath unviolated may it be granted to me to enjoy life and the practice of pharmacy respected by all, at all times
- Should I trespass and violate this oath, may the reverse be my lot.

Ten commandments for Pharmacy healthcare professionals have the following duties:

1. **Medication Therapy Management:** Customized educational interventions to prevent underutilization, overutilization, inappropriate use and abuse of certain drugs.
2. **Patient Counselling:** Our services go well beyond evaluating patients' drug profiles. Motivational interviews investigate why patients take medications improperly, break communication barriers with patients and improve their health outcomes by enhancing compliance to physicians' recommendations.
3. **Drug Information Services:** Provides timely, evidence-based drug information to promote safe, rational use of medications.
4. **Clinical Toxicology Services:** The services include poison information and toxicology screening for accidental and intentional overdoses of medicines, illicit drugs and toxins.
5. **Medication reconciliation:** Compares patient's medication orders to medication history and helps avoid errors of omission, duplication, incorrect doses or timing and adverse drug-drug or drug-disease interactions.
6. **Pharmacovigilance (Adverse drug reaction (ADR) monitoring and reporting):** Ensures patient safety and involves causality assessment of Adverse Events, ADR reporting and monitoring. Pharmacists assist clinicians in prevention and management of ADRs.

7. **Periodic Safety Update Report (PSUR):** Periodical reporting of the complete safety experience of newly introduced drugs to regulatory authorities. This is a critical component of a nationwide programme for post marketing surveillance (Phase-IV study). PSUR helps DCGI (Drug Controller General of India) to make accurate and unbiased decisions for implementing drug safety.
8. **Health Screening Programme:** Enhances access to screening services to the poor. Healthcare services include monitoring of blood pressure, blood cholesterol, body mass index (BMI) and blood glucose.
9. **Clinical Research Support:** This is followed by regular attending workshops, seminars, symposium and conferences at the national and international level to develop clinical skill and hands-on training are offered to working pharmacists. Pharmacists conduct and monitor clinical research, support physicians and other healthcare professionals in framing/executing research protocols and publishing research findings.
10. **Group discussion:** This is essential for the growing pharmacy professionals to share their viewpoints among doctors and pharmacists regarding healthcare system to improve their skills.



Figure-4: Pharmacists in healthcare [Sunil Maheshwari, Nilesh Modi, Mukesh Patel, Paresh Patel, Suhash Patel, Vijay Patel, Kalpesh Sathwara, Hiren Shah, Pavan Shah, Prof. Dr. Dhruvo Jyoti Sen and Prof. Dr. Pankaj Prajapati; Pharmacists make bridge between pharmacotherapy and healthcare system: European Journal of Biomedical and Pharmaceutical Sciences: 5(6), 314-320, 2018]

Pharmacists working in the pharmacy should

1. Hold at least a Diploma in Pharmacy (D.Pharm.) and preferably a degree (B.Pharm./M.Pharm.) in Pharmacy.
2. Be registered as a pharmacist with the Pharmacy council of the state in which he/she is practicing.
3. Have undergone adequate practical training in a community pharmacy.
4. Undergo in-house training as per the organization's staff training policy.
5. Have communication skills & capabilities to give adequate and proper advice to the clients on the appropriate use of medicines, illness, etc. so as to achieve optimal patient compliance.

Career opportunities: The demand for trained pharmacy professionals has significantly increased in recent years due to the phenomenal growth of the health care services/pharmaceutical industries. Ageing population, rising trends in chronic illnesses, enhanced insurance cover and higher disposable income are major contributing factors. Pharmacists are becoming more actively engaged in drug therapy decision-making and pharmaceutical care. There is a rising demand for pharmacists in a wide variety of occupational settings. Following are some of the numerous and diverse career

options available to Pharm.D./M.Pharm. (Pharmacy Practice) graduates.

1. **Clinical Pharmacy Practice:** Pharmacists are increasingly partnering with physicians in assuming responsibility for medication therapy management, especially in chronic diseases such as diabetes, asthma, hypertension. Specialists are emerging in paediatrics, critical care, cardiology, surgery, psychopharmacy, neurology, infectious diseases and drug information.
2. **Community Pharmacy:** Community pharmacists often constitute the first line of health care. In addition to dispensing medications and monitoring patients for adverse effects and drug interactions, pharmacists provide important counselling services in the choice of over-the-counter medications, referrals to other healthcare providers and healthcare screening programmes.
3. **Public Services:** State and Central Government Agencies such as State Pharmacy Councils, Central Drugs Standard Control Organization (CDSCO), Indian Pharmacopoeia Commission (IPC) require skilled pharmacists as regulators.



Figure-5: Pharmacy Practice & Health Professionals [Janak Acharya, Motilal Asnani, Amrut Dave, Pratik Gandhi, Anand Gangwal, Paresh Jivrani, Kishan Kadia, Nipul Kapadia, Atul Khatri, Prof. Dr. Dhrubo Jyoti Sen and Prof. Dr. C. N. Patel; *Pharmaceutical care is an evolutionary and revolutionary way of practicing pharmacy: World Journal of Pharmaceutical and Life Sciences: 4(6), 105-115, 2018*]

4. Home Healthcare: Patients formerly treated in a hospital setting are now receiving professional home care. Pharm.D./M.Pharm. (Pharmacy Practice) graduates can dispense medication and assist in administration of intravenous antibiotics, pain management medication and chemotherapy. Pharmacists can potentially follow practices already prevalent in developed countries in monitoring the patient's progress, adjusting therapy as needed.

5. Hospital Pharmacy: Pharmacists in hospitals have a tremendously expanded role within this traditional role.

Pharmacists manage operations and play a decisive role in Pharmacy administration.

6. Managed Care: Popular in developed countries, managed care is a cost effective, comprehensive and integrated health care plan that emphasizes on preventive care. Optimization of drug therapy, development of drug information, evaluation of therapeutic protocols, patient consultation and reducing avoidable hospital visits dominate the managed care environment.



Figure-6: Chemist & Druggist [Dr. Dhrubo Jyoti Sen; *Reflection of elements of periodic table in pharmaceutical science through correlation approach of far-sight of pharmacy which is the vision of pharmacy (phar-sight) in globalization in past & current millennium: World Journal of Pharmaceutical Sciences: 2(8), 693-694, 2014*]

7. Pharmaceutical Industry: Pharmaceutical industry recognizes the need for technical proficiency among product development personnel. Additionally, skills in research and development provide numerous opportunities. Pharm.D. and M.Pharm. are actively recruited by major pharmaceutical manufacturers for managing pharmacovigilance, clinical trials, medical writing, medical affairs etc.

8. Pharmacoeconomics: Society's demand for experts in pharmaco-economics is steadily increasing. Governmental agencies, health insurance providers, professional associations, hospital administration departments, health care consultancy organizations, pharmaceutical companies are likely to recruit more experts in pharmaco-economics.

9. Pharmacy Education: Pharm.D. curriculum offers a strong foundation in health sciences. Pharm. D.

graduates regularly join various colleges that impart clinical pharmacy education and research.

10. Specialized Area Opportunities: Pharmacists with expertise in specialized areas such as consultancy, legal practice, drug information, poison control and pharmacy affairs are gaining ground with time. Pharm.D. and M.Pharm. graduates can pursue Ph.D. to enter academic professions.

11. Research and Postdoc Opportunities: Pharm.D. graduates are eligible to directly join for Postdoc program in various foreign universities.

12. Foreign Pharmacy Licensure Examinations: Pharm.D. and M.Pharm. (Pharmacy Practice) graduates are eligible to write various foreign pharmacy licensure examinations including in USA. It is one of the mandatory components of the licensure process of most of the Western countries and is used by the boards of pharmacy as part of their assessment of a candidate's competence to practice as a pharmacist.



Figure-7: Budding pharmacists in professionals [Chirag A. Patel, Dhruvo Jyoti Sen and Aniket R. Patel; Nanomedicine: emerging field in medicine: Research Journal of Science and Technology: 2(3), 41-46, 2010]

CONCLUSION

Pharmacists, also known as chemists (Commonwealth English) or druggists (North American and archaically, Commonwealth English), are healthcare professionals who practice in pharmacy, the field of health sciences focusing on safe and effective medication use. A pharmacist is a member of the health care team directly involved with patient care. Pharmacists undergo university-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 a Bachelor of Pharmacy (B.Pharm.), Master of Pharmacy (M.Pharm.), or Doctor of Pharmacy (Pharm.D.) 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, military and government.



Figure-8: Drug Sore & Dispensing [Prof. Dr. Dhrubo Jyoti Sen; e-Medicine provides 24 hours weekly nonstop service to the best of mankind; World Journal of Pharmaceutical and Life Sciences: 3(9), 01-05, 2017. (ISSN: 2454-2229, Impact Factor: 6.129, Index Copernicus Value: 76.2)]

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