



## History and Development of Pharmacy

### 1. Greeks

- The Greeks were the very first patrons of the pharmacy profession.
- They introduced the word “**Pharmacy**”, which was derived from the Greek word “**Pharmacon**”, meaning *drug or medicine*.
- A well-known Greek physician named **Dioscorides** wrote a monumental book consisting of **five volumes on medicine**.
- This book was later translated into Latin under the title “**De Materia Medica**”, and it became a very important source of medicinal knowledge for centuries.

### 2. Contributions Around 300 BC

- Around **300 BC**, the Greek philosopher **Theophrastus** made great contributions by studying **plants, herbs, and shrubs**.
- He is well known as the “**Father of Botany**”.
- His studies formed the **basis for the use of herbs in medicine**, particularly in treating various diseases.
- Another Greek scientist, **Mithridates**, focused on the field of **toxicology**.

- He tested **toxins and their antidotes on himself**, conducting experiments to understand poisons.
- He later discovered a **universal antidote** known as “**Mithridatum**”.

### 3. Chinese Contributions

- In **168 BC**, in China, a script was discovered from the **Mawangdui tomb** entitled “**Recipes from 52 Ailments**”, which contained remedies for multiple diseases.
- In the **1st century AD**, a very important manuscript named “**Shen Nong Ben Cao Jing**” (The Divine Farmer’s Classic of Materia Medica) was compiled by **Shen Nong**, who is considered the **Father of Chinese Medicine**.
- This text formed the basis of Chinese medicine and documented around **1500 different herbal drugs**, which were carefully tested, analyzed, and widely used in China.

### 4. Romans

- **Galen (130–200 BC)**, a great Roman instructor and practitioner of both **medicine and pharmacy**, made remarkable contributions.
- He was the first person to **formulate cold cream** and also developed methods to **extract therapeutic constituents from plants**.
- Because of his outstanding work, Galen is remembered as the “**Father of Pharmacy**”.

### 5. Baghdad

- The **era of pharmacy stores** started in **754 AD** in Baghdad.
- By the **9th century**, the profession of pharmacy was **officially recognized and regulated by the state government of Baghdad**.
- From Baghdad, the knowledge and practices of pharmacy slowly spread to **Europe**, where it was initially developed under the name of **Alchemy**, and eventually evolved into the science of **Chemistry**.

### 6. Europe

- The establishment of **drug stores** spread throughout Europe.
- By the **12th century**, pharmacy stores were well established.
- In **1240**, **King Frederick II** officially recognized pharmacy as a **separate profession**, distinct from medicine.
- In **1241**, pharmacy stores were also set up in **Germany**.



- After this period, the field of pharmacy began to grow rapidly, particularly during the **1800s and early 1900s**.

## 7. United States

The **18th and 19th centuries** marked important milestones in the history of pharmacy in the United States:

1. The **first United States Pharmacopoeia (USP)** was published in **1820**.
2. The **first pharmacy school** was established in **Philadelphia**.
3. In **1852**, the **American Pharmacy Association** was founded.
4. In **1888**, the **National Formulary of America** was published by the American Pharmacy Association.
  - This formulary included standards for **excipients, botanicals, and similar pharmaceutical products**.

## 8. India

- Pharmacy as a modern profession in India developed in the **19th century**.
- However, long before this period, India already had a rich history of medicine.
- In ancient times, drug sources were derived from **vegetables, animals, and minerals**, as seen in traditional systems like **Ayurveda** and **Siddha**.
- Later, during the era of **Muslim rule**, **Arabic and Unani medicines** became more widespread.

### Allopathy in India

- The **allopathic system of medicine** was introduced to India by the **British**, who became rulers of the country.
- By the **19th century**, allopathy had become **very popular** in India.

### First Class of Chemists and Druggists in India

- In **1870**, the **first training class of chemists and druggists** was conducted at the **Madras Medical College**.
- This class was designed as a **training program** to help people gain skills in the practice of pharmacy.

- However, progress was very limited, and for almost **half a century**, no major development took place in the profession.

## World War I and Its Impact

- The **First World War** had a great impact on the growth of pharmacy in India.
- During the war, the **import of drugs was restricted** and only resumed after the war ended.
- At that time, there were **no restrictions on the quality of imported drugs**.
- Manufacturers abroad took advantage of this situation, which led to several problems:
  - Dumping of **inferior quality medicines** into India.
  - **Adulterated drugs** being sold.
  - Useless and even harmful medicines being distributed by **unqualified people**.
- The Government of India attempted to control these issues by passing several **Acts**, but most of them failed to properly regulate the situation.

## Drug Enquiry Committee, 1930

- To address these problems, the **Government of India** finally set up a **Drug Enquiry Committee** on **11th August 1930**, under the chairmanship of **Late R. N. Chopra**.
- The committee published its **first report in 1931**, which clearly stated that:
  - There was **no recognized profession of pharmacy** in India at that time.
  - The work of pharmacy practice was carried out by individuals known as “**Compounders**”, who lacked formal training.

## 13. Prof. M. L. Schroff

- The recommendations of the Drug Enquiry Committee inspired **Prof. M. L. Schroff** to introduce **pharmacy education at the university level**.
- He started the **first pharmacy course at Banaras Hindu University (BHU)**, and is regarded as the “**Father of Pharmacy Education in India**”.

## 14. Development of Pharmacy Education in India

- In **1932**, a **Bachelor of Pharmacy (B. Pharm.)** course was launched at BHU. This course was **industry-oriented**.
- In **1944**, another pharmacy course was introduced at **Punjab University, Lahore**, which focused more on **pharmacy practice**.
- Initially, pharmacy education was practice-oriented, but gradually it became **more industry-oriented**.

- This shift contributed to the development of **modern pharmaceutical industries in India**.

## **History of Pharmacy Profession in India (with focus on Pharmacy Education)**

### **Ancient and Traditional Era**

- India has a **rich tradition of drug use** through **Ayurveda, Siddha, and Unani systems**.
- **Charaka Samhita** and **Sushruta Samhita** (around 1000 B.C. – 600 AD) described drug preparation, dosage forms, and compounding.
- Drugs were prepared by **Vaidyas and Hakims**; no separate profession of pharmacist existed.

### **Colonial Period (before Independence)**

- During **British rule**, the import of Western (Allopathic) medicines increased.
- Drugs were mostly dispensed by **physicians or compounders** (assistants trained informally in hospitals/dispensaries).
- No formal pharmacy education system existed until the early 20th century.
- **Drug and Cosmetics Act (1940)** laid the foundation for drug regulation, but professional pharmacy education was still in infancy.

### **Beginning of Pharmacy Education in India**

- **1932**: First **B. Pharm. course** started at **Banaras Hindu University (BHU)** under Prof. M.L. Schroff (known as "Father of Pharmacy Education in India").
- **1937**: B. Pharm. course introduced at Punjab University, Lahore.
- Initially, these courses were designed on the model of **pharmaceutical chemistry** with focus on manufacturing, not clinical aspects.

### **Post-Independence Development**

- **1940s–1950s**:
  - More universities started offering **Diploma (D.Pharm.) and B.Pharm.**
  - **Pharmacy Council of India (PCI)** established in **1948** under the Pharmacy Act, to regulate education and profession.
- **1954**: **Pharmacy Act came into force**, making registration of pharmacists mandatory and laying down minimum qualification standards.
- **1950s–1970s**:
  - Expansion of **pharmaceutical industry** in India.



- Pharmacy education tailored to produce manpower for **manufacturing, quality control, analysis**.
- M. Pharm. and Ph.D. programs started in some universities.

### Modern Era (1980s onwards)

- Growing demand for **clinical and patient-oriented pharmacy practice**.
- **1983: AICTE** established to regulate technical education including pharmacy.
- **1990s:** Introduction of **Good Manufacturing Practices (GMP)** → curriculum reoriented towards **industrial pharmacy**.
- **2008:** Introduction of **Doctor of Pharmacy (Pharm.D)** program in India, aligning pharmacy education with **clinical practice and patient care**, similar to global standards.

#### Present:

- India offers **Diploma (D.Pharm.), B.Pharm., M.Pharm., Pharm.D., and Ph.D.** in Pharmacy.
- Curriculum continuously revised to balance **industry, research, and clinical pharmacy**.
- Growing focus on **pharmacovigilance, clinical trials, regulatory affairs, biotechnology, and community pharmacy**.

### History of Pharmacy Profession in India in Relation to Pharmacy Industry

#### 1. Ancient and Traditional Era

- **Ayurveda, Siddha, and Unani** were the main systems of medicine.
- Drugs were prepared from **herbs, minerals, and animal products** by vaidyas/hakims themselves.
- No *separate pharmaceutical industry*; preparations were small scale and community based.

#### 2. Early Colonial Period (18th–19th Century)

- During **British rule**, most medicines were **imported from Britain**.
- Some small **dispensaries and medical stores** prepared medicines locally.
- **Compounders** (assistants in hospitals) dispensed drugs; no formal profession of pharmacy yet.
- Lack of **drug regulation** → widespread **spurious and adulterated drugs** in the Indian market.

#### 3. Foundation of Pharmaceutical Industry (1900–1947)

- **1901:** Establishment of **Bengal Chemical and Pharmaceutical Works** (by Acharya P.C. Ray) → first modern Indian pharmaceutical company.

- **1930s:** Alembic Chemical Works (Baroda), Bengal Immunity, and other firms started indigenous drug production.
- **1932:** Start of **B.Pharm. course at BHU** (Prof. M.L. Schroff) to provide trained manpower for industry.
- **1940: Drugs and Cosmetics Act** passed → laid legal foundation for regulating drug manufacture.
- Indian industry still **dependent on imports** for bulk drugs.

#### 4. Post-Independence Growth (1947–1970s)

- **1948: Pharmacy Council of India** established under Pharmacy Act to regulate profession.
- **1950s–60s:** Government encouraged **self-reliance in drug manufacturing**.
- Establishment of **Indian Drugs and Pharmaceuticals Ltd. (IDPL, 1961)** with Soviet collaboration → landmark in Indian pharma industry.
- Growth of **public sector undertakings** and private pharma companies.
- Pharmacy education expanded to produce workforce for **production, quality control, and analysis**.

#### 5. Era of Expansion & Global Recognition (1970s–1990s)

- **1970: Indian Patent Act** (excluded product patents for drugs) → boosted **indigenous generic drug manufacturing**.
- Indian pharma became self-reliant in producing **formulations** (though still dependent on imported bulk drugs initially).
- Growth of companies like **Ranbaxy, Cipla, Dr. Reddy's, Sun Pharma**.
- India earned the title "**Pharmacy of the Developing World**" for supplying affordable generics.
- Pharmacy education updated with more focus on **industrial pharmacy and pharmaceutical technology**.

#### 6. Modern Era (2000s–Present)

- **2005:** India became TRIPS-compliant → **product patents** reintroduced.
- Indian pharma shifted towards **R&D, new drug discovery, biotechnology, contract research, and clinical trials**.
- Rapid growth in **export of generics** → India is among the **top 3 global exporters**.
- **Pharm.D. (2008)** introduced to align profession with **clinical pharmacy**, but industry still remains the biggest employer.
- Presently, the Indian pharma industry:
  - **3rd largest in the world by volume, 13th by value.**
  - Supplies **60% of global vaccines** and **~20% of generics** worldwide.
- Pharmacy education continues to adapt with courses in **regulatory affairs, pharmacovigilance, biotechnology, clinical research** to match industrial demands.

#### History of Pharmacy Profession in India in Relation to Pharmacy Organisations



### 1. Pre-independence (before 1947)

- Pharmacy was not a recognized profession; work was done by **compounders and dispensers**.
- Lack of drug regulation → circulation of **adulterated and spurious medicines**.
- Need for an organised professional body was strongly felt.
- **1935: Prof. M.L. Schroff** proposed the formation of a professional pharmacy body.
- **Indian Pharmaceutical Association (IPA)** established in **1939** at Bombay → the first professional body to promote pharmacy practice, education, and research in India.

### 2. Foundation of Regulatory Organizations (1940s–1950s)

- **1940: Drugs and Cosmetics Act** passed → legal framework for quality and safety of drugs.
- **1948: Pharmacy Act** enacted → to regulate the profession and education of pharmacy.
- **Pharmacy Council of India (PCI)** established under this Act (1948) to:
  - Regulate pharmacy education.
  - Maintain register of pharmacists.
  - Prescribe minimum qualifications.
- **All India Council for Technical Education (AICTE)** – though established later (1945, reorganised in 1987 as statutory body), became key in regulating technical (including pharmacy) education in India.

### 3. Post-Independence Organisational Growth (1950s–1970s)

- **Indian Drugs Manufacturers' Association (IDMA)** founded in **1961** → supported growth of Indian pharmaceutical industry.
- **Central Drugs Standard Control Organisation (CDSCO)** formed under Ministry of Health → regulatory authority for approval of new drugs and clinical trials.
- Pharmacy education and profession gradually organised through **PCI + universities + professional associations**.
- **Indian Pharmaceutical Congress Association (IPCA)** established → annual congress for professionals, educators, regulators, and industry.

### 4. Expansion and Professionalisation (1980s–2000s)

- **AICTE Act, 1987** → AICTE became statutory body to regulate pharmacy education infrastructure, intake, and quality.
- **Indian Hospital Pharmacists' Association (IHPA)**, **Association of Pharmaceutical Teachers of India (APTI)**, and other organisations established to strengthen specialised areas of pharmacy.
- **International collaborations** with FIP (International Pharmaceutical Federation).

### 5. Modern Era (2000s–Present)



- **2005 onwards:** With India becoming TRIPS-compliant, organisations like **OPPI (Organisation of Pharmaceutical Producers of India)** gained importance for policy and innovation.
- **2008:** Introduction of **Pharm.D.** (PCI initiative) → marked shift towards clinical and patient-oriented pharmacy.
- **Regulatory strengthening:**
  - CDSCO and State Drug Control Departments work under **Drugs & Cosmetics Act**.
  - **National Accreditation Board for Hospitals (NABH)** encourages pharmacy services in hospitals.
- **Presently active organisations:**
  - **PCI** (education & registration)
  - **AICTE** (technical education quality)
  - **CDSCO** (drug regulation & clinical trials)
  - **IPA, APPI, IHPA, IPCA, IDMA, OPPI** (professional and industrial bodies)

