

# Pharmacy Technician Program

## Chapter 1: The Pharmacy Technician

**Coursework 101**





# The Pharmacy Technician

*This chapter provides a historical perspective of the many cultures, civilizations and individuals that contributed to the practice of pharmacy as we know it today.*



## Ancient Origins

### A. Early Recipes

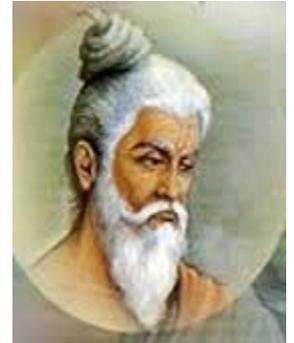
1. There are five-thousand year old clay tablets, in Mesopotamia (18th century Babylonia), that list medicinal preparations, from various sources, including: plants and minerals, combined with ritual magic.
2. Ancient Egyptians compiled lists of drugs that were also known as formularies, pharmacopeias or dispensatories.
  - a. The most famous Egyptian list of drugs was known as the **Ebers Papyrus**. It was written about 1530-1500 B.C. and included a collection of recipes.





## Ancient Origins

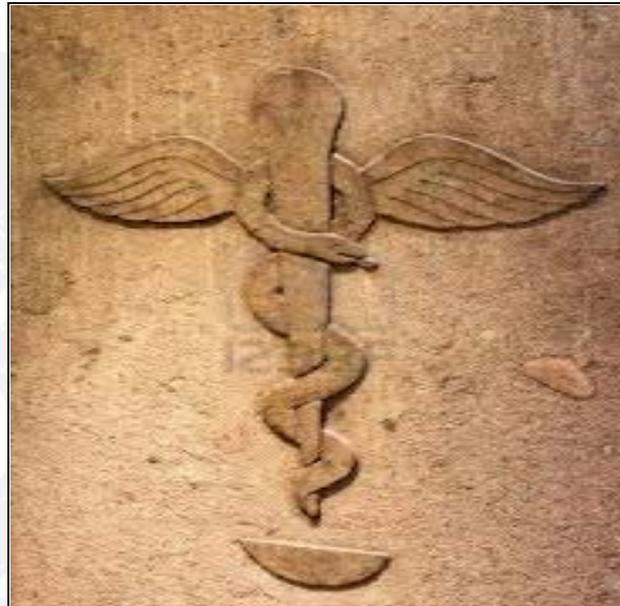
3. Over two-thousand years ago, Li Che Ten compiled a resource called Peng T'Sao that listed over 1,000 plants and 8,000 recipes that were used to treat illnesses.
4. The people of ancient India attributed curative powers of the gods and priestly shamans to an intoxicating drug, still unidentified and once thought to come from mushrooms, but recently discovered to be linked to ephedra sinica.
  - a. In 1000 B.C., a Hindu named Sushruta, “the father of Indian medicine,” wrote a medicinal work called The Book of Life (Sushruta samhita).





## Ancient Origins

5. To the ancient Greeks we owe the beginning of a more scientific approach to the practice of medicine.
  - a. The word pharmacy comes from the ancient Greek word pharmakon, meaning drug.

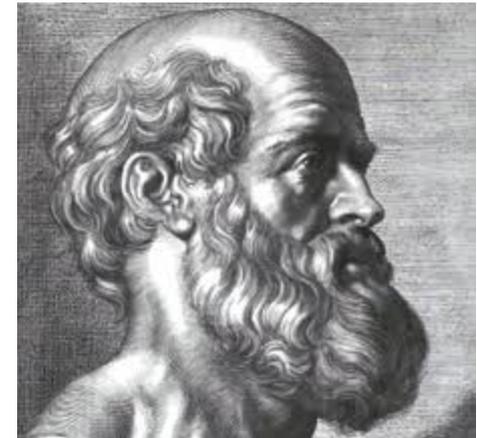




## Early Pharmacy

**A. The Greek Hippocrates, a.k.a. “the Father of medicine”** (c. 460-377 B.C.), established the long-discredited theory that health involved the harmony of four fundamental bodily fluids known as humors (blood, phlegm, yellow bile, black bile).

1. Hippocrates was the first to propose that disease came from natural and not supernatural causes.
2. He practiced herbal medicine in favor of observation, classification and empirical learning.
3. He is also known for the Hippocratic Oath which doctors still pledge today. “...to give no drug...for a criminal purpose.”

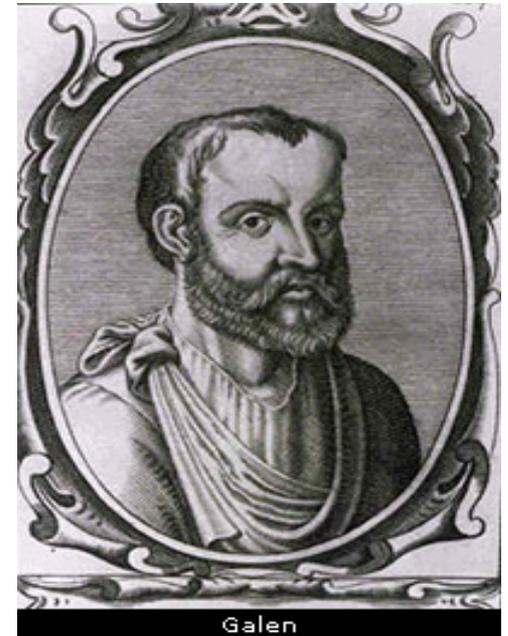


(Pause to review the “Hippocratic Oath”)



## Early Pharmacy

- B. Another Greek, Galen, (c. 130-201 AD) established a systematic classification of drugs for the treatment of various pathologies involving the bodily humors; this system went unchallenged for nearly a century.**
- 1. Galen expanded on the theory of humors by combining six centuries of knowledge and observation, since the time of Hippocrates.**
  - 2. He also conducted animal experiments to further his knowledge of the human body.**





## Early Pharmacy

3. **Galenical Pharmacy** is used to describe the process of creating extracts of active medicinal properties from plants (once a major role of a pharmacist); it is recognized for establishing techniques in preparing medications (compounds), i.e. how to follow a recipe.





## Early Pharmacy

- C. Pedanius Dioscorides (c. 40-90 AD)... A Greek Physician who served in the Roman army; gathered knowledge from various countries about medicinal herbs and minerals. He also wrote a text called De Materia Medica (On Medical Matters).**
- 1. For fifteen hundred years, the book, On Medical Matters, served as the standard text on drugs, primarily herbal remedies.**
  - 2. Dioscorides scientifically described and classified 600 plants by substance rather than by the disease they were intended to treat.**





## Early Pharmacy

- D. Claude Bernard ...French Physiologist (1813-1878), demonstrated that certain drugs have specific sites of action within the body and he used lab methods to study drugs.**
- 1. Bernard is credited for launching the field of Pharmacology (the science and study of drugs and their interactions).**





## Early Pharmacy

- E. **William Proctor, Jr. (1817-1872) ... “Father of American Pharmacy”, graduated from Philadelphia College of Pharmacy in 1837.**
  - 1. **He was instrumental in the founding of the American Pharmaceutical Association in 1852.**





## Early Pharmacy

- F. Paracelsus (born Philippus Aureolus Theophrastus Bombastus von Hohenheim, 11 November or 17 December 1493 – 24 September 1541) was a Swiss Renaissance physician, botanist, alchemist, astrologer, and general occultist. Sometimes called the “father of toxicology”**
- 1. He was the first to challenge the teachings of Galen. He advocated the idea of using individual drugs rather than mixtures or potions.**
  - 2. Concept: Treating with individual drugs would make it easier to determine which agent helped, which one made things worse, and the determination of a correct dosage.**



## Early Pharmacy

3. He was a scientist, teacher, and writer who authored more than 500 pharmacy-related technical articles.
4. Paracelsus pioneered the use of chemicals and minerals in medicine. He used the name “zink” for the element zinc in about 1526, based on the sharp pointed appearance of its crystals after smelting and the old German word “zinke” for pointed. He used experimentation in learning about the human body. Paracelsus was also responsible for the creation of laudanum, an opium tincture very common until the 19th century.





## The Evolution of the Pharmacist's Role

- A. The **Traditional Era** was dominated by the formulation and dispensing of drugs from natural sources.
1. **At this time a Pharmacist was known as an apothecarian, a druggist, or a chemist.**
  2. In 1231, Emperor Frederick II of Germany, recognized "Pharmacy" as a separate profession.
  3. However, the distinction between a doctor and a pharmacist was established in the United States after the Civil War, in the U.S.



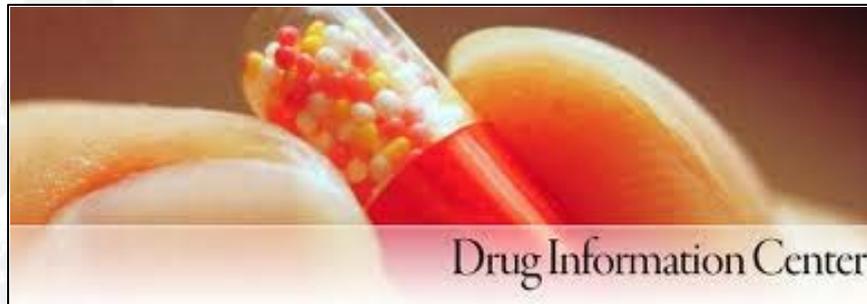
## The Evolution of the Pharmacist's Role

- B. The Scientific Era was dominated by the development of drugs and scientific testing of the effects of drugs on the body and mass production of synthetic drugs; this started after World War II.**



## The Evolution of the Pharmacist's Role

- C. The Clinical Era evolved in the 1960s and combined traditional roles of the pharmacist with new ones, for example, the role as dispenser of drug information.**
  - 1. During this era Drug Information Centers were created. Pharmacy Technicians assist in quality assurance tasks, such as logging information requests for trending at a later date.**





## The Evolution of the Pharmacist's Role

- D. During the Pharmaceutical-Care Era the philosophy of care expanded the mission statements of the profession to include responsibility for ensuring positive outcomes for drug therapy.





## Duties of a Pharmacist

**A. A pharmacist still compounds (mixes).**





## Duties of a Pharmacist

- B. In a retail setting a Pharmacist (Pharm D)...
1. counsels customers (a.k.a. patients) Note: **Pharmacy technicians are NOT allowed to counsel a patient about a prescription.**
  2. they also take the patient's medical history
  3. provide information about OTC meds, and
  4. they communicate and advise verbally and most of the time by providing literature about adverse drug reactions and drug interactions, e.g. drug brochure, or drug information handout.



## Duties of a Pharmacist

- C. In a hospital setting a Pharmacist (PharmD)...**
- 1. advises the medical staff about drug selection and effects,**
  - 2. monitors drug regimens,**
  - 3. prepares sterile IVs, and**
  - 4. provides discharge counseling. Again, Pharmacy technicians are NOT allowed to counsel a patient about a prescription.**



## Duties of a Pharmacist

- D. In a home health care setting a pharmacist...
  1. prepares and monitors patient medications for home use





## Duties of a Pharmacist

- E. In a Nursing Home, Assisted Living Home, Hospice, Psychiatric and MHMR group homes a Pharmacist (PharmD) will:**
- 1. consult on regulations to keep the facility in compliance with the Department of Aging and Disability (DADS),**
  - 2. assist the facility on putting policies in place to help with the medication management of their residents, and**
  - 3. they clinically monitor the resident (patient's) medications and make recommendations to the Medical Doctors (MD) and nursing staff.**



## Duties of a Pharmacist

### F. Other Duties/Roles of a Pharmacist (PharmD)

1. Pharmacists teach/train/instruct.
2. They consult in cases where there is radioactive drug use, IV nutrition, psychiatric drugs, geriatrics, and pediatric care.
3. Pharmacists also provide guidance in the Forensic Pharmacy.





## Education and Licensing of a Pharmacist

### A. Licensing and Educational Path of a Pharmacist

1. All RPh (Registered Pharmacist) must be licensed, however this five-year degree program is no longer available, i.e. the degree is still valid, but the program is no longer offered at universities or colleges. Registered Pharmacists are still using the RPh designation in the field..
  - a. Oversight and licensing are the responsibility of the State Board of Pharmacy.
  - b. A State license is the document required to practice as a pharmacist.



## Education and Licensing of a Pharmacist

### B. Education

1. In order to become a Doctor of Pharmacy (PharmD) a student needs to:
  - a. attend and successfully graduate from an accredited college of pharmacy,
  - b. pass NAPLEX exam,
  - c. pass the state law exam,
  - d. serve an internship, and
  - e. remain engaged in continuing education units (CEU);  
The State of Texas requires 30 hours every 2 years.





## Education and Licensing of a Pharmacist

2. Most colleges of pharmacy offer six year programs: Doctor of Pharmacy (PharmD), and require that student have already passed the PCAT (Pharmacy College Admission Test) to be admitted.



PHARMACY COLLEGE ADMISSION TEST



## Role of the Pharmacy Technician

### A. Pharmacy Technician Role

- 1. Pharmacy Technicians are often referred to as pharmacy technologists, assistants, or aides.**
- 2. The definition of a true Pharmacy Technician is: Someone who, under the supervision of a pharmacist, assists in activities necessary for the dispensing of drugs and drug information.**





## Role of the Pharmacy Technician

- B. Each state's State Board of Pharmacy defines the role and rules of a Pharmacy Technician.**
- 1. Pharmacy Technicians are accountable to the pharmacist for their quality of work and accuracy.**
  - 2. Pharmacy Techs must recognize that judgment calls are the sole responsibility of the pharmacist, and**
  - 3. They support and assist the pharmacist.**
  - 4. Responsibilities and compensation of an entry-level Pharmacy Technician will continue to increase and commensurate with experience, availability (e.g. nights, weekends, travel, etc.), and further/continued certification (CEUs, IV Cert, PTCE).**



## Role of the Pharmacy Technician

5. Each state board of pharmacy determines if transferring prescriptions between pharmacies is allowed and the manner in which this process will take place.

You can visit [www.Salary.com](http://www.Salary.com) to find specific numbers about the region you plan to work, in which setting, (e.g. retail, or hospital), and the job title you seek.

6. Levels of a Certified Pharmacy Technician:
- CPht I (entry level tech) ,
  - CPht II (data entry/IV tech), and
  - CPht III (lead tech).



## Role of the Pharmacy Technician

- C. DOs and DON'Ts for the Pharmacy Technician  
(See chart in Teacher's Binder)





## Role of the Pharmacy Technician

### D. Characteristics of a Pharmacy Technician

1. You should possess a wide range of skills, knowledge, and aptitudes.
2. You should demonstrate dedication,
3. Submit to high ethical standards,
4. Demonstrate a sense of responsibility toward patients and healthcare professionals,
5. Have a willingness to follow directions,
6. Have an eye for detail,
7. Have manual dexterity,
8. Possess basic mathematic skills,
9. Have excellent communication skills, and



## Role of the Pharmacy Technician

10. Demonstrate research skills.
11. A Pharmacy Technician's goal is **100% Accuracy**.
12. You should have the ability to perform calmly in stressful situations, and
13. Be capable of multi-tasking.

100%



## Certification Requirement to become a CPhT

### A. Requirements

1. There are no federal requirements, at this time, however with the recent crack-down on fraud, prospective employers are more prone to hire certified individuals.
2. Most states do not have requirements; see your State Board of Pharmacy's website.
  - a. Texas requires certification, registration and IV certification if making IVs. Note: You should check your State Board of Pharmacy for requirements.
  - b. New Mexico does not have a requirement, as of May 2011.



## Certification Requirement to become a CPhT

3. Exam candidates must have a high school diploma or GED, a social security number, and have never been convicted of a felony in order to sit for the PTCB National Certification Exam.
4. Your objective is to become a Nationally Certified Pharmacy Technician (CPhT).





## Certification Requirement to become a CPhT

- B. In 1995 the American Pharmaceutical Association (APhA) and the American Society of Health-System Pharmacists (ASHP) came together to create the Pharmacy Technician Certification Board (PTCB).
1. The PTCB created the Pharmacy Technician Certification Examination (PTCE).
  2. The PTCB requires recertification every 2 years by acquiring 20 continuing education units (CEUs).





## Certification Requirement to become a CPhT

### C. Pharmacy Tech Work Environments

1. Community pharmacies (retail)
2. Hospital pharmacies (institutional)
3. Home healthcare
4. Long term care
5. Pharmacy techs seeking a career in a hospital pharmacy setting would look for the following occupational opportunities:
  - a. Inventory technician
  - b. Robot filler



## Certification Requirement to become a CPhT

- c. IV Technician
- d. Chemotherapy technician
- e. Clinical technician ... Helps track patient medications.
- f. Supervisory technician





## Certification Requirement to become a CPhT

6. Pharmacy techs seeking a career in a retail pharmacy setting would look for the following occupational opportunities:

- a. Stock inventory technician (in relation to OTC products) (entry-level)
  - i. Stocking shelves
  - ii. Helping customers locate products
  - iii. Removing expired products from shelves
  - iv. DO NOT recommend products to customers.



## Certification Requirement to become a CPhT

- b. Insurance Billing Technician (requires further training on the job)**
- c. Pharmacy Technician recruiter (requires either further training on the job or previous experience as a recruiter)**
- d. Pharmacy Technician trainer (requires more experience as a PT)**



## Certification Requirement to become a CPhT

7. In a drug information center a Pharmacy Technician might assist in the quality assurance task of logging information requests for trending at a later date.
  - a. Pharmacy Technicians **SHOULD NOT** answer patient questions; however, the filing of the drug information is **NOT** considered to be a quality assurance task.

