

History of Pharmacy

Presented to :

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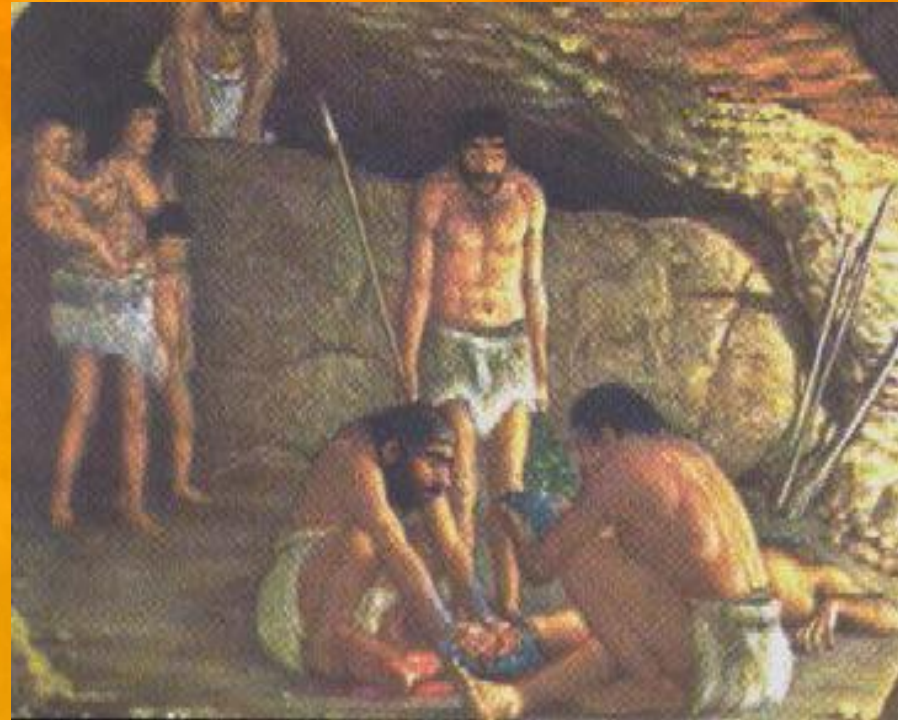
Outline

- Describe the origins of pharmacy
- Before the Dawn of History
- Pharmacy in Ancient Babylonia
- Pharmacy in Ancient China
- Days of the Papyrus Ebers
- Greeks period
- Roman period
- Arabian period
- Empiric Era
- Pharmacy Today and Tomorrow



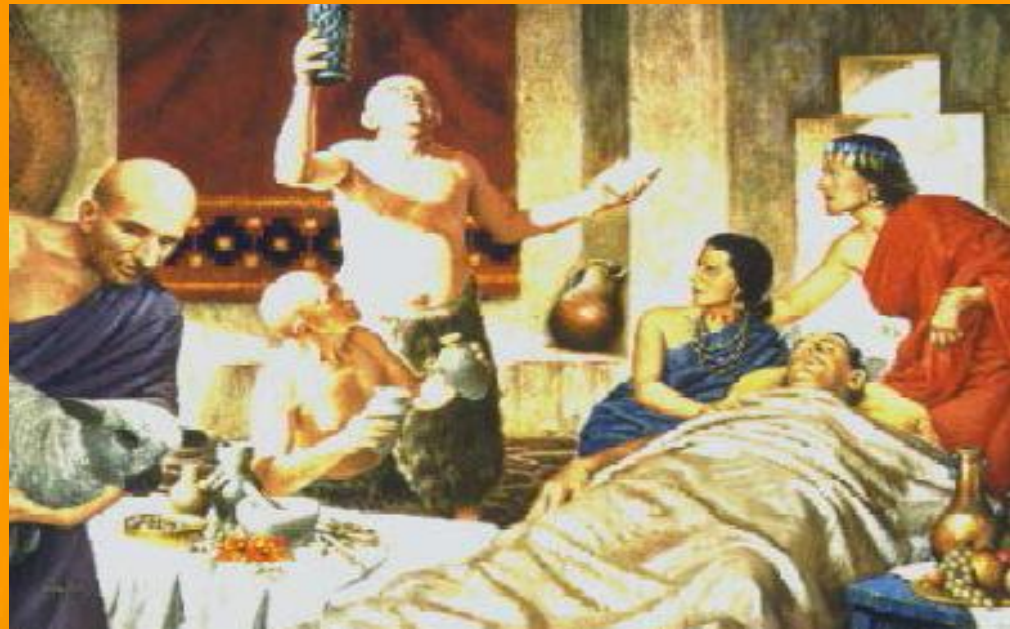
1. Before the Dawn of History

- In earliest times, medicine was based in **magic and religion**.
- Sumerians living around 4,000 BC believed that **demons were the cause of illness**.
- In many cultures, physicians were priests, and sometimes considered as gods.
- Early man used materials in his surroundings, Leaves, mud and cool water were used to stop bleeding and heal wounds.
- Dry clay was used to splint broken bones.



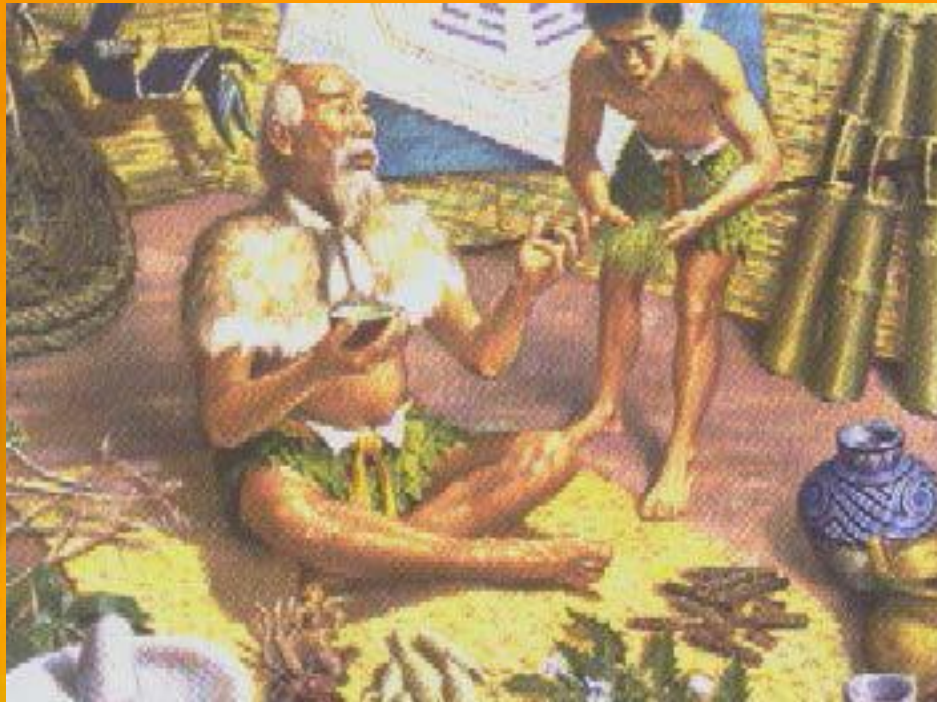
2. Pharmacy in Ancient Babylonia

- The earliest known record of the art of apothecary (the forerunner of the pharmacist) is in Mesopotamia at about 2600 B.C
- Babylonian healing practitioners combined the responsibilities of priest, physician, and pharmacist.
- Some of the oldest pharmacy records are found in Sumerian (Babylonian) clay cuneiform tablets that date back to about 2000B.C.



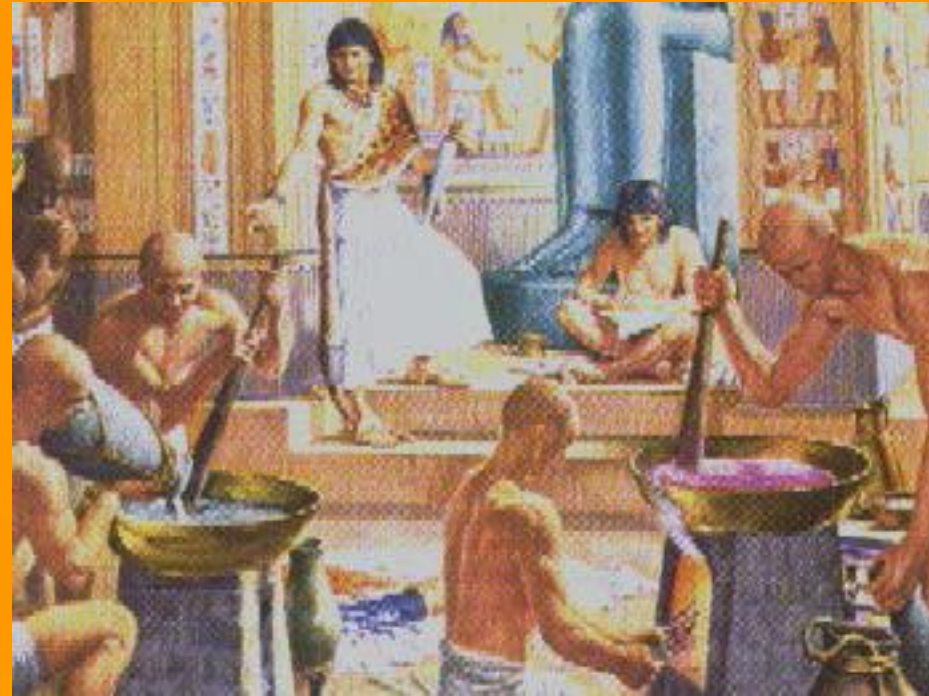
3. Pharmacy in Ancient China

- In ancient China (2000 B.C) legend tells that Emperor Shen Nung investigated the medical properties of hundreds of herbs.
- He recorded 365 native herbal drugs in the first pen T'sao. (Book called “the Great Herbal”)



4. Days of the Papyrus Ebers

- One of the earliest known records written around 1500 B.C. was the Ebers Papyrus named by George Ebers
- It is the best known and most important pharmaceutical record from ancient history



Conti...

- It contains 800 prescriptions using 700 drugs, of particular note in the papyrus is inclusion of quantities of substances, which were largely missing from Babylonian clay tablets.
- Many modern dosage forms are also referred to in the Ebers Papyrus as gargles, inhalations, suppositories, ointments, plasters, and lotions.



Greeks

- Around 600 B.C. the Greeks integrated science into mythological thinking.
- They began thinking logically about disease rather than believing spiritual explanations.
- The Romans conquered the Greeks and the medical and pharmaceutical cultures merged, it is known as the Greco-Roman era.



5. Theophrastus – Father of Botany

- His observations about the medicinal qualities of herbs have proven uncannily accurate.
- Theophrastus covered most aspects of botany: descriptions of plants, classification, plant distribution, propagation, germination, and cultivation.



Hippocrates “The father of Medicine”

- He was a philosopher, Physician and Pharmacist.
- He liberated medicine from the mythical “Bad Spirits”
- He also wrote the Oath of Hypocrites
- Proposed that disease came from natural, not supernatural causes.
- Established the **theory of humors** which needed to be imbalanced for good health:
 - air- blood,
 - water- phlegm,
 - earth-black bile,
 - fire- yellow bile.



6 Dioscorides – A Scientist Looks at Drugs

- He was a Greek physician and botanist.
- Wrote the first standard text/manual on drugs called *De Materia Medica*.
- Also called *PHARMACOPOEIA*.
- Published 6 books that covered over 600 plants and their healing properties.
- His book was used for 1500 years.



Common Terms Used in Pharmacy

Pharmacology -The study of drugs (from the Greek *pharmakon* means drug).

Pharmacognosy - The study of physical, chemical, biochemical and biological properties of drugs as well as drugs from natural sources.

Pharmacopeia – An official listing of drugs and issues related to their use.

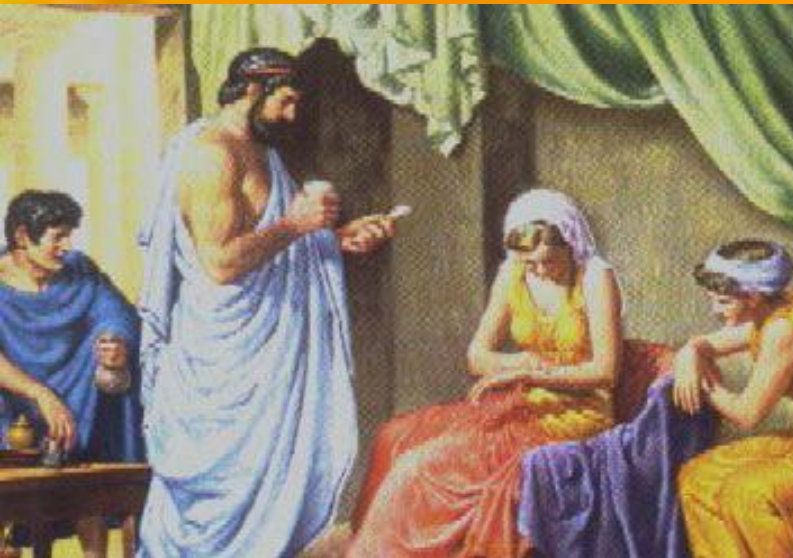
Pharmaceutical – Of or about drugs; also, a drug product.

Panacea – A cure-all (from the Greek *panakeia*).

Materia Medica – A dictionary of medicinal plants.

7. Galen – Experimenter in Drug Compounding

- Galen (A.D 130-200) was a prominent Roman (of Greek ethnicity) physician, surgeon, and philosopher.
- Developed principles of preparing and compounding medicinal agents
- Sought to restore humeral balances within a patient by the use of medicine of opposing qualities.
- e.g. inflammation would be treated with cucumber, a cool drug.

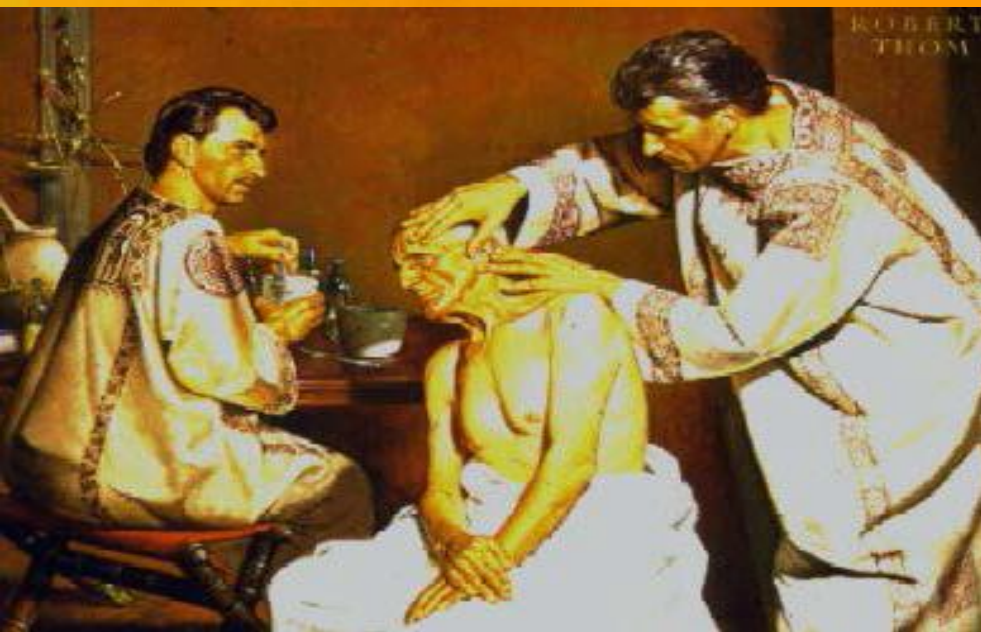


Galenical pharmacy

- The first pharmacy .
- Described the process of creating extracts of active medicinals from plants.

8. Damian and Cosmas – Pharmacy's Patron Saints

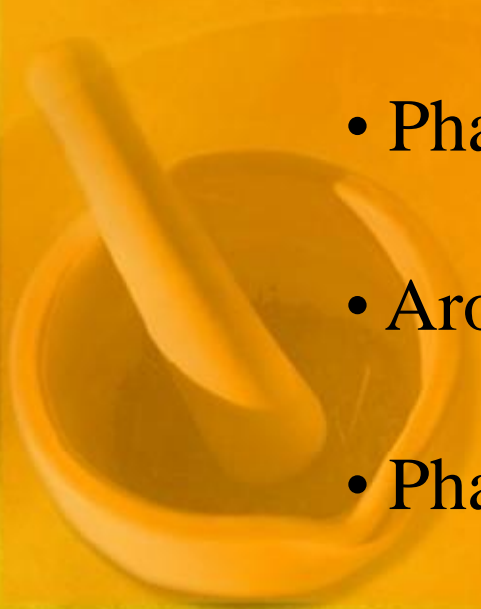
- What's more from the Roman era came the twin brothers Damian and Cosmas. They were Christians of Arabian Descent. Damian was the apothecary, and Cosmas the Physician.
- They offered the solace of religion as well as the benefit of their knowledge to the sick who visited them.



- After canonization, they became the patron saints of Pharmacy and Medicine, and many miracles were attributed to them.

Roman pharmacy titles

- Pharmacopeia: Maker of remedies
- Pharmacotritae: Drug Grinders
- Unguentarii: Makers of ointments
- Pigmentarii: Maker of cosmetics
- Pharmacopolae: Seller of drugs
- Aromatarii: Dealers of spices
- Pharmacist of today had not yet evolved



The Arabian Influence

- Major advances in this era
- Formularies: The continuation of documentation of drug information.
- They also had different drug forms which are now used:

Syrups, Conserves, Confections and juleps.



The First Apothecary Shops

- The first Pharmacy shop in the world was in Baghdad about 792 A.D.
- They preserved much of the Greco-Roman wisdom, added to it, developing with the aid of their natural resources syrups, confections, conserves, distilled waters and alcoholic liquids.



Avicenna – The “Persian Galen”

- Ibn Sina (980-1037 A.D)- Avicenna-intellectual giant, he was a physician, poet, philosopher, diplomat.
- His Canon Medicinae brought together the best knowledge of the Greeks and Arabs into a single medical text.



- His pharmaceutical teachings were accepted as authority in the West until the 17th century; and still are dominant influences in the Orient.

Separation of Pharmacy and Medicine

- The Middle Ages:
- Pharmacy differentiates in the middle ages.
Pharmaceutical Knowledge,- and the number of drugs available began to grow considerably, thanks to the Arab World.
- Pharmacy as a separate activity began to develop and privately owned pharmacies were established in Islamic lands.
- Medicine and pharmacy were for the first time separated from each other.



- At the time of Frederick II of Hohenstaufen, who was Emperor of Germany as well as King of Sicily.
- This edict is known as the Magna Carta of pharmacy.

Conti...

- The three decrees of the Magna Carta:
- The pharmaceutical profession was to be separated from the medical profession.
- The pharmaceutical profession should be supervised officially.
- Pharmacists should take an oath to prepare drugs reliably, according to skilled art, and in a uniform suitable quality.



Paracelsus



- Theophrastus Phillippus Aureolus Bombastus von Hohenheim
- Swiss born physician who believed in chemical treatment of disease rather than botanical.

The Renaissance: Pharmacists Flourished Too

- Following the Middle Ages, many parts of European Society reexamined the Greek and Roman tenets (theories, ideology) that they had held as fact.
- Contemporary beliefs arose and Homeopathy had its origin in the Renaissance period.
- During the Renaissance Professional associations of pharmacists emerged.



The First Official Pharmacopeia

- The idea of a pharmacopoeia with official status, to be followed by all apothecaries, originated in Florence.
- It was the result of collaboration of the Guild of Apothecaries and the Medical Society - one of the earliest manifestations of constructive interprofessional relations.



The Society of Apothecaries of London

- In England, the pharmacist was under jurisdiction of Guild of grocers, which monopolized the drug and spice trade
- King James I granted a charter recognizing the Society of Apothecaries of London in 1671 A.D.
- Early English apothecaries compounded as well as dispensed drugs. They also provided medical advice.



- This was the first organization of pharmacists in the Anglo-Saxon world.

The Empiric era 1600-1940

- Pharmacopeias were used to protect public health.
- Roots, Bark, Herbs Flowers etc. were used and controlled by the government.
- They questioned the toxicological affects on the human body.
- Created interest in testing of drugs and how they affected the body.
- In 1751 Benjamin Franklin started the first hospital.



Empiric Era Cont...

- In Pennsylvania, PA. It was moved but still stands today.
- The first hospital pharmacist to work in that hospital was Jonathan Roberts.
- First as pharmacist, later as physician, he advocated prescription writing and championed independent practice of two professions.



A Revolution in Pharmaceutical Education

- When Dr. Albert B. Prescott launched the pharmacy course at the University of Michigan in 1868, critical attention was aroused because he abandoned the traditional requirement of pregraduation apprenticeship.
- At the 1871 convention of the American Pharmaceutical Association, he was denied credentials and ostracized.
- However, the Michigan course pioneered other major changes: laboratory pharmacy, a definite curriculum that included basic sciences, and a program that demanded students' full-time attention.
- During the next thirty years, Dr. Prescott had the satisfaction of seeing his once revolutionary innovations generally adopted by pharmaceutical faculties.



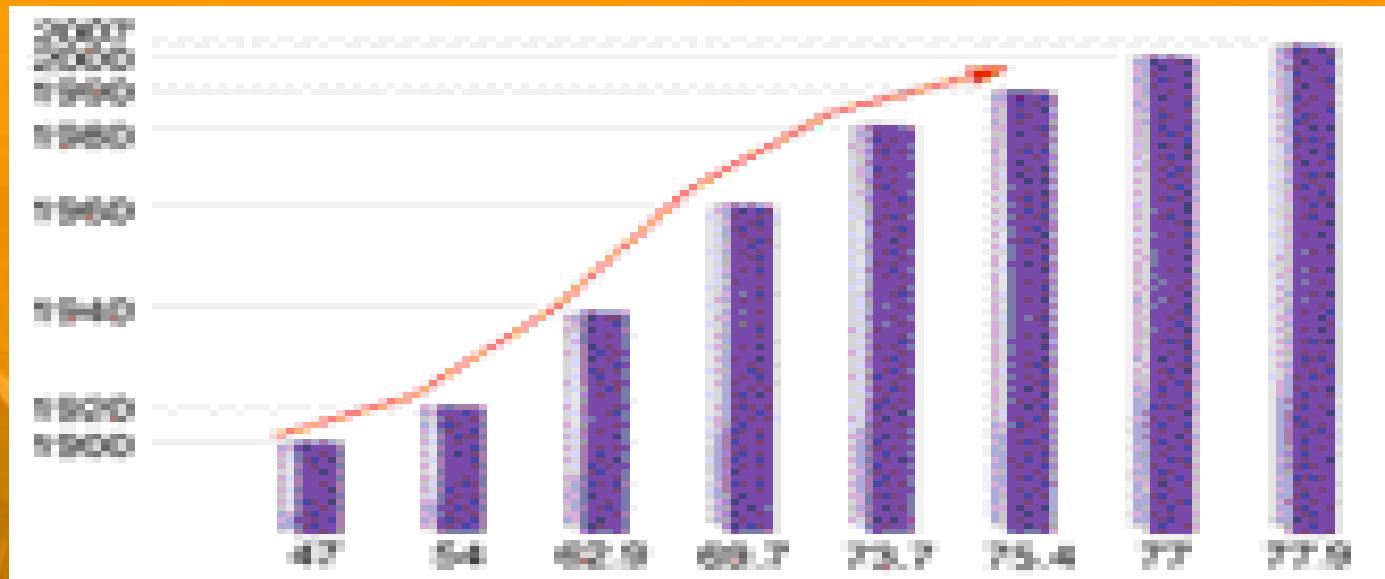
The Father of American Pharmacy

- William Proctor
- “The father of American Pharmacy”
- Spent most of his life to the advancement of pharmacy.
- He owned an apothecary shop, teacher, editor and a scientist.



The 20th Century

- The average life span in the United States increased by over twenty years in the 20th Century.
- 1900 – early 50's..... 2000 – 77.9 years.



Conti...

- A major factor in the increased health and life expectancy seen in this century, was the dramatic **growth in pharmaceutical medicine.**
- With the increasing availability of powerful drugs, their **regulation** became more important than ever.
- **Food and Drug Administration (FDA)** was established in response to this need to regulate the sale and use of medication in the US.



The Food and Drug Administration (FDA)

- Monitors drugs **before a drug is marketed** in the United States
- Also monitors after the drug is approved for sale to the public for any adverse effects – called **Post Marketing Surveillance**
- **Recalls** drugs if they have proven dangerous within public safety



Pharmacy Today and Tomorrow

- Pharmacy, with its heritage of 50 centuries of service to mankind, has come to be recognized as one of the great professions.
- **Prescription** is a written paper for a drug product by a licensed prescriber to treat a patient.
- **Prescriptions** filled increased by **27%** while the number of **pharmacists** increased by **15%** (1997 – 2007).



- Pharmacy's professional stature will continue to grow in the future as this great heritage and tradition of service is passed on from preceptor to apprentice, from teacher to student, from father to son.

Economic Trends

