A SHORT HISTORY OF THE OLD TRIP OF STERILIZATION

IRINI SOULTATATOU
HEAD NURSE
CENTRAL STERILIZATION DEPARTMENT
UNIVERSITY GENERAL HOSPITAL
HERAKLION, CRETE. GREECE
EARLY HISTORICAL TIMES

- The beginnings of preservation and sterilization techniques go back to ancient years.
- Aristotle recommended to Alexander the Great, his troops should boil the water before they drank it.
- For many centuries it was believed that the air was responsible for spreading some diseases.
- It is known that Hippocrates attempted to send the plague away from Athens by lighting fires in the streets and burning aromatic woods to disappear the plague-spots.
EARLY HISTORICAL ATTEMPTS

- One of the first discoveries in human history was that the salt had a preservative action.
- Later, it was found that sugar solutions had the same effect.
- Smoking, was found to be an essential method of preservation, especially to the meat.
- The beneficial effect of passing surgical instruments through flame was well known to ancients civilizations.
- Chinese and Egyptian physicians, also, used chemical methods in the treatment of wounds and injuries.
HEAT STERILIZATION

- The heat as a preservative method in medical industry, was introduced in 1809, when the French Government offered a prize for a suitable method of preserving food.
- The prize won Nicholas Appert with his method of sealing vegetables and fruits in glass jars and then heating them.
Nicolas Appert (1749-1841)
Louis Pasteur (1822-1895)

Louis Pasteur, recommended to French vintners heating the new wine at 55°C in the absence of air in order to avoid serious problems.

Later he noticed that moist heat was more effective than dry heat.
Denis Papin
(Blois, France 1647- London, England 1712)

Papin is best known for his work as an inventor, particularly his work on the steam engine. In 1679 he invented the pressure cooker and, in 1690 he published his first work on the steam engine.

He also experimented with preserving food both with chemicals and using a vacuum.
Charles Chamberland (1851-1908)

Charles Chamberland was a French microbiologist who worked with Louis Pasteur.
In 1984 he developed a type of filtration known today as the Chamberland filter or Chamberland-Pasteur filter, constituting of an unglazed porcelain bar. He was also credited for starting a research project that led to the invention of the autoclave device.
William Henry (1774-1836), a Manchester physician, studied contagious diseases. He believed that these were spread by chemicals which could be rendered harmless by heating; he used heat to disinfect clothing during an outbreak of cholera in 1831.

Pasteur (1876), Koch and Wolffhugel (1881), developed and used autoclaves.
Charles Chamberland (1851-1908)

Chamberland Autoclave (1884)
In France the first device of dry heat sterilization introduced from Gaston Poupinel and in 1885 began its use in many hospitals.
Joseph Lister (1827-1912)
Lister believed that it was microbes carried in the air that caused diseases to be spread in wards. People who had been operated on were especially vulnerable as their bodies were weak and their skin had been cut open so that germs could get into the body with more ease.
Lister developed his idea further by devising a machine that pumped out a fine mist of carbolic acid into the air around an operation. The number of patients operated on by Lister who died fell dramatically.
In 1870 Lister's antiseptic methods were used, by Germany, during the Franco-Prussian war saving many Prussian soldier's lives. In Germany, by 1878, Robert Koch was demonstrating the usefulness of steam for sterilizing surgical instruments and dressings. German surgeons were beginning to practice antiseptic surgery, which involved keeping wounds free from micro-organisms by the use of sterilized instruments and materials.
Statue of Joseph Lister (1827-1912) at Portland Place in London
ANESTHETICS began to be used seriously beginning in the United States with Wells, (1815-48) who employed nitrous oxide for dental extraction in Boston. In 1846 Morton (1819-68) used ether in Boston. Shortly after the practice was taken up in Britain and in 1847 Simpson (1811-70) introduced chloroform for use in obstetrics.
The mortality rate is over 60% for surgical patients

The Agnew Clinic by Thomas Eakin (1885)
Advancements in asepsis

- 1891: Heat sterilization of instruments (Ernst Von Bergmann)
- 1883: Sterile gowns and caps (Gustav Neuber)
- 1897: Surgical masks (Mikulicz)
- 1890: Rubber gloves (William Halstead)

"Antisepsis relieved patients from the terror of death and gave to the surgeons... restful nights... and joyous days."

William Keen (1837-1932)
Recent steps of trip

1. Sterile Area
2. Dirty Area
3. Clean Area
And the trip goes on.....