Fighting Disease - The Drugs Revolution

Important individuals and their advances

One person's 'discovery' might be based upon the work of an earlier person, so it is important to know who did what and when. Here is a chronological list of individuals in the 19th and 20th centuries and the important medical discoveries they made. Read through it carefully and try to learn the key facts.

Louis Pasteur

Pasteur carried out his research into germs in 1864. His work on vaccines went on for about 4 years from 1877-1881. He proved that the old idea that diseases start out of nothing (spontaneous generation) was inaccurate and that micro-organisms cause disease. He showed the importance of testing ideas in a scientific way. He discovered several vaccines that worked against certain illnesses in animals and one against rabies that also worked on humans.

Robert Koch

Koch was a German scientist, influenced by Pasteur's work. In 1872 he began research into the microbes affecting animals and people. His careful research and observation using the microscope, photography and dyes led to a breakthrough in the fight against two of the deadliest diseases of the late 19th century. In 1882 he identified the bacteria causing tuberculosis (TB). A year later, in 1883, he identified the bacteria causing cholera.

Paul Ehrlich

Ehrlich's team discovered Salvarson 606 in 1909. This was a controversial treatment for the sexually transmitted disease, Syphilis. Paul Ehrlich worked for Koch and discovered that dyes could be used to make specific bacteria easier to see. He realised that this could be used to send drugs directly to the bacteria he wanted to kill without harming the rest of the body - this is sometimes called a 'magic bullet'.
Gerhard Domagk

- In 1932 Domagk discovered drugs called **sulphonamides**.
- Made from chemical dyes, they killed certain bacteria and helped in the treatment of **pneumonia** and **scarlet fever**.

Alexander Fleming

In 1928 Fleming discovered that a mould which could be used to kill many harmful bacteria, preventing infection spreading around the body. This discovery was called **penicillin**. However, another 14 years passed before it was fully developed and mass-produced in 1942 in America.

Further factors

Further factors are important in individual developments:

- **Chance** - was an important factor in Fleming's original discovery of the mould which was the basis for penicillin. Also, Dr Hata, a member of Ehrlich's team, was re-testing salvarson 606 when he discovered it worked against Syphilis.
- **World War II** - the outbreak war in 1939 stimulated governments into funding the mass production of penicillin.