

- He used a disinfectant- carbolic acid, a phenol
- Used it to sterilise surgical instruments
- Used it to clean wounds
- Thus prevented surgical wound infections
- This was quickly adopted by surgeons
- This made surgeries safer and reduced post-surgery infections
- Thus he proved that microbes cause surgical wound infections

1876- Koch

- Devised a series of experiments to prove microbes cause disease- Koch's Postulates
- His series of experiments proved that a specific microbe causes a specific disease
- Made connection that anthrax is caused by a bacterium
- He used observation and staining to identify what was causing the disease- the pathogen
- He isolated the pathogen and grew it in a culture, he then inserted into a healthy lab mouse
- These mice became diseased or died
- He took the mice and repeated the identification process to see whether what pathogen he got was the one that he put into the mice and it was;
- Thus the organism you put in is the organism you get out
- We can prove Koch's postulates for diseases when we have an appropriate animal model
- Gold standard- this is the standard test used to identify an emerging infection e.g. HIV, Ebola which were not in humans but got into humans later on

Syphilis got into humans, we don't see that now, the parasite has become less pathogenic, we have become immune to it, things become more of an equilibrium

The birth of chemotherapy

- Paul Ehrlich coined the term chemotherapy
- Chemotherapy- any chemical used to treat any disease
- Worked in the dye industry
- He believed that infectious diseases could be treated by synthetic chemicals
- He speculated about a 'magic bullet' that could destroy a pathogen without harming the host- selective toxicity
- In the dye industry, he noticed some cells take up certain dyes some don't in relation to other cells== so he thought this idea can be used for killing parasites—chemotherapy!
- so he reasoned that dyes can be differentiated between parasite and host

1905- Thomas and Breinl

- Demonstrated that atoxil protected mice from trypanosomes, by giving it to mice infected with trypanosomes
- Mouse survived
- However, this drug doesn't work on humans!