

- In **1842 Chadwick** compiled a report on living conditions of poor citizens
- Argued there should be organised drainage and refuse collection and clean water
- **1848** outbreak of cholera pressured government to pass **Public Health Act 1848** - but was not compulsory
- **Second Public Health Act 1875** - forced authorities to provide clean water and sewerage systems

Published **Germ Theory** in **1861** but spontaneous generation belief still popular



French chemist and microbiologist in mid-late 1800s



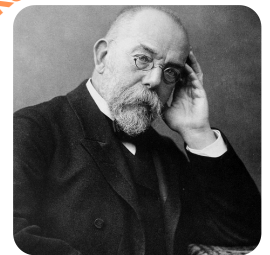
Louis Pasteur

Discovered that bacteria could be killed with heat - **pasteurisation**

In **1879** discovered exposing the germ that caused chicken cholera to air weakened it and injecting this weakened version prevented chickens catching the disease - **vaccine**

Robert Koch

- German doctor and microbiologist in late 1800s
- Applied Germ Theory to prove how bacteria caused disease and identified bacteria that caused anthrax, TB and cholera
- Found a way of isolating bacteria making it easier for future scientists
- Discovered using dyes to stain microbes



Magic Bullets - idea of killing germs inside body without harming healthy tissue

Ehrlich and Hata tested various substances that could be used to cure a rabbit from **syphilis**. They found **Salvarsan** worked - this was the first magic bullet which went onto the market in **1910**

3. A REVOLUTION IN MEDICINE

Cholera Outbreaks

Cholera outbreak in **1854** in Soho. **John Snow** discovered a **water pump** was cause of spread, when pump was removed spread reduced. However, could not explain why cholera was waterborne

Reactions to Germ Theory in Britain

Some still argued germs came from spontaneous generation

Many scientists conducted experiments to help prove Germ Theory



In **1847** **Simpson** first used **chloroform** successfully and was used for childbirth and operations

Nightingale



Florence Nightingale

- In **1854** during the Crimean War she cared for wounded soldiers
- She significantly **improved hygiene** in the hospital e.g., washing bedding and suggested opening the windows and better quality food
- In **1859** wrote 'Notes on Nursing' which was a bestseller

Antiseptics

- **Joseph Lister** in **1867** discovered **carbolic acid** helped stop wounds from getting gangrene
- Lister developed **antiseptic surgery** by spraying instruments with the acid
- In **3 years** Lister reduced his patient **death rate** from **46%** to **15%**

