

1800's & 1900's Surgery

Key Words:

Surgery	The Cattle Plague
Pain	Humphry Davy
Simpson	Nitrous Oxide
Chloroform	Horace Wells
Infection	William Morton
Lister	Ether
Carbolic acid	Robert liston
Aseptic surgery	John Snow
Blood Loss	Chloroform Inhaler
Karl Landsteiner	Injuries
Blood groups	Blood transfusion
Opposition	

3 problems: Pain, Infection, Blood loss

Simpson and Chloroform

Lister & Carbolic Acid

Landsteiner & Blood Groups



Factors:

Technology

War

Government

Event:	Causes	Treatments	Cures Attempted	Government Action	Consequences.
The Cattle Plague 1866	Believed it started spontaneously,			Quarantine and slaughtering of cattle. Employed Beale who found that 'tiny microbes' were responsible for the spreading of the disease.	Food shortages, food prices rose
The World War's 1914-18 1939-45	Soldiers were injured from fighting in the War so needed quick advances in surgery to help them deal with their wounds and life altering injuries.	<ol style="list-style-type: none"> X-rays allowed doctors to identify where any shrapnel was. Plastic surgery began with skin grafts and has developed in to what we know it as today. By 1921 the Queens hospital kent had treated over 1000 soldiers with facial wounds. Splints were used for broken bones. Blood transfusions could now happen after landsteiners development in blod groups and then in 1914 Albert hustin found that sodium citrate stopped blood from clotting. Heart surgery happened during the second world war when army surgeons had to cut into hearts to remove shrapnel. Penicillin being developed and purified. 	Battlefield surgeons attempted to deal with infection by cutting away infected tissue and soaking wounds in saline.	As a result of these developments many soldiers' lives were saved but lots of progress in surgery was also made. Some fo these techniques are still used even though they may have been adapted to suit todays surgical needs. Showed that surgical developments could happen at the most testing of times. Developments in surgery still happen all the time. Key hole surgery has since been developed. Penicillin saved thousands of lives during D-Day.	

People	What	Short Term impact	Long Term impact
Humphry Davy 1800	Discovered nitrous oxide (Laughing Gas) made you laugh, giddy and relaxed. Did not see how it had medical value but wrote about it in a book.		
Horace Wells 1844	Read Davys recordings about Nitrous Oxide and decided to try it as pain relief, he tried it on his dentistry patients but this failed miserably after it did not numb the pain and the patient screamed in pain whilst having their tooth removed,		

William Morton 1846	Developed Ether for use as an anaesthetic and also used it during tooth extractions and for the first time surgeons began to take notice of anaesthetics.	Led to the work of Robert Liston.	Without his public demonstration of how an effective anaesthetic can dull pain during surgery we may not have effective anaesthetics now.
Robert Liston	The first UK doctor to use Ether as an anaesthetic during a leg amputation. He showed how great Ether was as an anaesthetic, although it did have its problems. Firstly it was difficult to inhale, it caused vomiting and also was highly flammable (so unsafe for use in the operating theatre.)	Showed that anaesthetics allowed easier surgery and also that they did numb pain.	No real long term impact other than
James Simpson 1847	Discovered that Chloroform was an effective anaesthetic at a dinner party when one of the party guests knocked over a bottle of Chloroform and Simpson's wife brought them dinner to find everyone in the room asleep peacefully.	Many people opposed chloroform as it was believed that soldiers during the Crimean war should be strong enough to deal with the pain from wounds. This wasn't helped when Hannah Green was given Chloroform to allow surgeons to remove a toe nail but unfortunately she died from inhaling too much chloroform. Also the death rate from surgery increased, this was due to surgeons being able to delve deeper in the body, without knowledge of germs, and therefore caused infection, this became known as 'hospital fever'.	Once the Queen had used Chloroform during childbirth and referred to it as 'Blessed Chloroform' it gained support.
John Snow 1858	Developed the chloroform inhaler. This measured the correct dosage of chloroform so allowed it to be administered without risk of dying from an overdose.	Saved lives due to not being overdosed on chloroform, in turn this also helped it overcome some remaining opposition.	Surgeons still use measure out anaesthetics before administering them.
Pasteur 1861	The discovery of germ theory meant that surgeons needed to look at ways to stop infection.	Leads to the discovery by Joseph Lister of carbolic Acid.	
Joseph Lister 1867	Discovered that Carbolic Acid killed bacteria that got into open wounds, he tested this in 1865 when a young boy had an open fracture in his leg, he operated and sprayed carbolic Acid on the wound, the patient healed and left 6 weeks later.	Surgeons began to use Carbolic Acid, but they weren't convinced of the reason behind using it as they didn't necessarily believe in 'Germ Theory' and the reasoning behind why the acid worked. They also disliked the fact that the acid cracked their hands, made tools slippery and irritated their lungs.	Proved that antiseptics were needed during surgery which led to the development of Aseptic surgery (1890's). This meant the operating theatre; operating tools and surgeons hands and clothes were to be cleaned prior to surgery to rid them of bacteria.
Bastian vs Tyndall 1860-70.	Bastian believed that infections generated spontaneously whilst Tyndall publicly supported Pasteur's germ theory.		Tyndall eventually proven right to believe Pasteur due to the work of Koch and proving that Germ theory could cause disease.
Archibald McIndoe	Developed face surgery using carbolic acid to stop tissue becoming diseased. He reconstructed hundreds of pilots faces.		
Beveridge 1945	Introduced the National Health Service. This meant everyone had to pay contributions from their wages but could be treated by a doctor at any time without having to pay.	Faced a lot of opposition from private doctors who worried they would be employed but the government and would therefore lose money. Also from wealthy people who did not feel it was their responsibility to help the poor.	The NHS still exists in England today, it is currently facing much criticism for waiting times and pressures on hospitals. Millions use the NHS each year.