

Public Health in the Industrial Period, 1800-1900		
1	Poor public health	<i>Public health – the health and wellbeing of ordinary men, women and children – was in a poor state in 1800’s Britain. The average age of death for a working man was about 30 years of age. In some places, such as Liverpool, it was 15! In Manchester, 1 in every 5 children died before their first birthday. But the 19th century also saw significant improvements in public health.</i>
2	<u>Cholera Outbreaks</u>	In 1831 new and frightening disease arrived in Britain – <u>cholera</u> . In this year alone, it killed 50,000 people .
3	Edwin Chadwick’s report	After more outbreaks of cholera in 1837 and 1838, the government held an inquiry into living conditions and the health of the poor. Edwin Chadwick wrote a report which shocked Britain. His report highlighted the need for cleaner streets and a cleaner water supply. <u>Chadwick’s report stated:</u> a medical officer is needed in each district, the government need to improve sewers so that rubbish is flushed away and improve the water supply to prevent disease.
4	Laissez Faire	The government did not act as they believed in laissez faire . It was the job of the government to keep law and order, not to keep people clean. Some Members of Parliament (MPs) made lots of money renting out poorly built housing to poor people However, a new outbreak of Cholera in 1848 killed 60,000 people
5	1848 Public Health Act	The government passed a Public Health Act in 1848 . The act gave local town councils the power to spend money on cleaning up their towns, but this was not compulsory. Some towns made huge improvements, but many others did not bother.
6	<u>John Snow’s discovery</u>	In 1854, a surgeon named John Snow made a major breakthrough in proving the link between cholera and the water supply. Snow worked in Broad St, Soho, London where 700 people died of cholera in 10 days He discovered the water pump was leaking dirty water because it was less than 1 metre from a cess pit. Snow had finally proven that cholera was caused by germs NOT bad smells (miasma) .
7	<u>The Great Stink</u>	In the summer of 1858 a heat wave caused the filthy River Thames to smell worse than ever. MP’s started to complain. The stench from the Thames combined with Dr Snow’s evidence about cholera and Edwin Chadwick’s advice, caused such an alarm that the government turned to a man they hoped could save their city: Joseph Bazalgette .
8	Bazalgette’s sewage design:	A network of underground sewers which would intercept all waste from London houses before it had chance to flow into the Thames. 1858: Bazalgette given £3 million and built 83 miles of sewers. 1866: The sewers were finished and cholera never returned.

THE DEVELOPMENT OF PENICILLIN + THE PHARMACEUTICAL INDUSTRY		
1	<u>Magic Bullets</u>	Ehrlich was a bacteriologist who worked with Robert Koch in the 19 th century and he experimented to find a chemical that would kill specific bacteria, whilst leaving other cells untouched. These were called magic bullets . These could kill a disease without hurting a patient. Magic bullets soon developed to cure or control syphilis, meningitis, pneumonia and scarlet fever.
2	Staphylococcus,	By the 1920’s , one nasty germ, named staphylococcus, remained undefeated by any magic bullet. However, scientists had known since the 1870’s that some moulds could kill germs. One type of mould – penicillin – proved particularly good at killing staphylococcus....
3	Alexander Fleming	In 1928, Fleming he left several plates of staphylococcus on a bench. When he came back he noticed a large blob of mould in one of the dishes. Upon investigation, he noticed that the staphylococcus germ had been killed and penicillin mould had started to grow in the plate . Fleming soon realised the germ-killing abilities of penicillin and published his findings. However, did not go on to test penicillin on humans or animals.
4	Florey and Chain	<ul style="list-style-type: none"> In the 1930s two scientists [Florey and Chain] began to work on developing penicillin for human use. WWII was a vital factor in transforming the supply of penicillin. In June 1941, the US government agreed to pay several huge chemical companies to make millions of gallons of it. By 1944 there was enough to treat 40,000 soldiers. It has been estimated that during the war, 15% of wounded soldiers could have died without penicillin to fight their infections.
5	The development of the pharmaceutical industry	Drug companies began using their production methods to make penicillin available for public use as soon as the war ended. Some of the large companies that we know today (Beecham, Pfizer) started out as pill makers. The discovery of penicillin as a ‘wonder drug’ in the early 20 th century led to huge government sponsored programmes to develop and produce it. This meant that the pharmaceutical industry had both the finance and the technology to research and develop medicines for all sorts of diseases.
6	<u>The first antibiotic</u>	Penicillin is called an antibiotic and has saved the lives of millions of people. It treats all kinds of wounds and infections.

THE DEVELOPMENT OF DRUGS AND TREATMENT IN THE 20 TH + 21 ST CENTURY		
1	<u>Vaccination and drugs</u>	1940s, 1950s and 1960s: the government started free vaccinations in the UK. There were free vaccinations against TB, diphtheria, whooping cough and tetanus. 1950s and 1960s: development of the first contraceptive pill. 2006: the first HPV (anti-cancer) vaccine was approved.
2	<u>Treatments</u>	1950s: Development of understanding of <u>DNA</u> . This led to gene therapy, genetic <u>screening</u> and genetic engineering. 1970s: saw IVF fertility treatments start as well as 3D X-ray images. 1980s: saw MRI scanning which is widely used to monitor brain activity, which is especially useful for finding brain tumours or stroke damage. 1990: The Human Genome Project formally launches. This is an international project to decode all the human genes in the body and identify their role. This means new drugs can then be developed based on our complex understanding of <u>DNA</u> . 2003: The Human Genome Project is complete. There is ongoing research links between genetics and treating diseases.
3	<u>Surgery</u>	Improved anaesthetics allowed patients to be unconscious for longer, so more complicated operations could take place; while better antiseptics increased the success rate of difficult operations because they cut down deadly infection! 1950: First open heart surgery 1958: First pacemaker Is fitted 1967: First heart transplant 1984: Skin grafts using skin that had been grown in a laboratory 2008: Full face transplants <u>Key hole surgery</u> - using small fibre-optic cameras linked to computers, meant surgeons could now perform operations through very small cuts. <u>Micro-surgery</u> allowed surgeons to magnify the areas they were working on so they could rejoin nerves and blood vessels. Surgery using lasers (rather than a scalpel), has becoming increasing popular.
4	<u>Alternative medicine</u>	Alternative medicine: Any other way of treating an illness or health conditions that does not rely on mainstream, doctor-dispensed, scientific medicine. Treatments consider the patient, instead of beating a disease down with drugs. Since the 1980s, alternative medicine has become more and more popular – and some of it is now available on the NHS. One in five people in Britain have consulted alternative healers and alternative medicine. However, some have put this increase in popularity of alternative healthcare down to a lack of confidence in conventional doctors and the NHS. Now even 1 in 10 GPs are involved in promoting alternative medicine to their patients. e.g. hypnotherapy, aromatherapy
5	<u>Antibiotic resistance</u>	Since the development of penicillin, there have been discoveries of different types of antibiotics that kill all sorts of bacteria. However, the effectiveness of antibiotics can lead to their overuse, prompting bacteria to evolve and become increasingly resistant

THE IMPACT OF THE TWO WORLD WARS

1	<u>Impact of World War One (1914-1918)</u>	<ul style="list-style-type: none"> Shell-shock - some shell-shocked soldiers had panic attacks; others shook all the time or were unable to speak or move. To begin with, the British army refused to believe that shell shock existed and many of the men were treated as cowards. However, by the end of the war, there were so many cases that shell shock became officially recognised. Today the condition is known as PTSD or post-traumatic stress disorder.
2	X-Rays	The ability to take X-rays had been around since 1895, but it was during World War One that the technology became really widespread. Mobile X-ray machines were used to find out exactly where bullets or pieces of shrapnel were lodged in soldier's bodies without having to cut them wide open.
3	Plastic Surgery	<ul style="list-style-type: none"> World War One saw the first ever use of what we now call 'plastic surgery' to repair soldiers' injured faces. A doctor named Harold Gillies set up a special unit to graft (surgically attach) skin onto men who had suffered severe facial wounds.
4	Blood storage	During WWI scientists worked to find ways to store blood properly so that soldiers who had lost a lot of blood could have it replaced (transfused) quickly. In 1914 new techniques stopped the blood clotting as it was discovered that glucose and sodium citrate stopped blood from clotting and by 1917 blood could be bottled, packed in ice and taken to where it was needed by surgeons operating on soldiers
5	<u>Impact of World War Two (1939 – 1945):</u>	<ul style="list-style-type: none"> A doctor from New Zealand named Archibald McIndoe (who was a cousin of Harold Gillies – WWI plastic surgeon) used new drugs such as penicillin, to prevent infection when treating pilots with bad burns. His work in rebuilding damaged faces and hands were respected and copied all over the world.
	Heart Surgery	American army surgeon Dwight Harken cut into beating hearts and used his bare hands to remove bits of shrapnel and bullets.
	Blood banks	<ul style="list-style-type: none"> Large blood banks were developed in both the USA and Britain during World War Two, much of it was donated by civilians (people at home in Britain). This blood saved so many lives by helping to treat injured soldiers. In 1946, Britain launched its National Blood Service which is used today to give blood.

PUBLIC HEALTH REFORMS – START OF THE 20TH CENTURY

1	<u>The Boer War 1899</u>	In 1899, a large scale army recruitment campaign took place to find men to fight in the Boer War. Army chiefs were alarmed by the fact that 40% of men who volunteered were unfit to be soldiers . The government were shocked and set up a special committee to enquire.
2	<u>Booth and Rowntree</u>	<p>Around the same time, special investigations into the lives of the poor started to make headlines.</p> <p>Charles Booth – found out that 30% of the people living in London were in poverty. By this, he meant that they did not have the money to buy enough food, shelter and clothing.</p> <p>Seebohm Rowntree – He found out 28% of the population did not have the minimum amount of money to live on.</p> <p>This shocked many and fuelled fears that the unhealthy state of Britain's workers could lead to the decline of the country as a great industrial power.</p>
3	<u>Politicians become motivated..</u>	Some politicians, including many men from the Liberal Party (Winston Churchill and David Lloyd George) believed that more direct action was needed . They were also worried about the growing popularity of the Labour Party which had been founded (set up) in 1900. They wanted to appeal more to working class people to stop them from voting Labour. In 1906, the Liberal Party won the general election and set to work .
4	<u>Liberal Health Reforms</u>	<ul style="list-style-type: none"> Free School Meals Act - Local councils provided school meals for poor children. By 1914 over 158,000 children were having a free school meal everyday.
5	<u>1908 Children and Young People's Act</u>	Children were now 'protected persons.' Parents were now breaking the law if they neglected children
6	<u>1909 Old Age Pensions Act</u>	<ul style="list-style-type: none"> The Act provided for a non-contributory old age pension for people over the age of seventy, with the cost being borne by taxpayers generally. It was enacted in 1908 and was to pay a weekly pension of 5s a week (7s 6d for married couples) with effect from 1 January 1909.
7	<u>National Insurance Act, 1911</u>	Introduced unemployment benefit ('the dole'), free medical treatment + sickness pay. Britain's first job centres were also set up
8	1918 – health visitors	<ul style="list-style-type: none"> Local councils had to provide health visitors (qualified person who promotes good health in the community), clinics for pregnant women and day nurseries.
	1926 – slum clearance	The building of overcrowded back-to-back housing was banned and slum clearance started

THE INTRODUCTION OF THE WELFARE STATE AND DEVELOPMENTS IN THE 21ST CENTURY

1	The impact of the world wars	The death and destruction of the two world wars did not just have an impact on people's lives – it had a major impact on attitudes too. People felt that sacrifices made at home and abroad should mean that the future should be a lot better for them. They felt that a better, fairer healthcare system should be part of this.
2	<u>Beveridge Report</u>	Towards the end of the Second World War, Sir William Beveridge (Liberal politician) wrote a report to the government called the <i>Beveridge Report (1942)</i> . He recommended that the government should provide a welfare state where they have more of a responsibility of looking after people. In other words, it was the duty of the government to look after all members of society, not just the poor.
3	<u>The Labour government</u>	The Labour Party promised to follow Beveridge's advice, while the Conservative Party, led by Winston Churchill, refused to make such a promise. The Labour Party won the election in 1945 led by Clement Attlee.
4	<u>The Welfare State and Labour's reforms</u>	The National Health Service (NHS) was set up in 1948 to provide health care for everybody. This made medical treatment – doctors, hospitals, ambulances, dentists and opticians – free to all who wanted it. A weekly family allowance payment was introduced to help with childcare costs The very poor received financial help or 'benefits' The school leaving age was raised to 15 Poor quality housing was knocked down council homes were being built each year
5	<u>Development of the NHS</u>	Aneurin Bevan was the Minister of Health appointed by the government to introduce the NHS. Up until 1948, around 8 million people had never seen a doctor because they couldn't afford to! Now everyone could get free medical treatment and medicines. Bevan believed that medical treatment should be available to treat both the rich and poor . However, many medical professionals were totally against the creation of the NHS and against Bevan – they saw it as an attempt to restrict their rights. Only 10% of doctors wanted the NHS.
6	<u>Cost of the Welfare State</u>	The NHS did not stay totally free for long. Workers now have to pay for the NHS through taxation. People also have to pay for prescriptions and dental treatment.
7.	<u>Healthcare in the 21st Century</u>	Waiting lists seem to be getting longer Doctors and nurses are overworked . Modern drugs are very expensive and people are living longer which is putting a strain on resources. However, the government continue to improve the health and well-being of the people through healthy eating campaigns and in 2007 a smoking ban made it illegal to smoke in enclosed public places.