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| **Time period** | **Individual** | **Aspect(s)** | **Impact of the development** |
| **400 BC** | **Hippocrates** – founder of the **Four Humours** theory. This theory stated that there were four main elements in the body – blood, yellow bile, black bile and phlegm. Illness was caused by having too much of one of these humours inside of you. He also wrote the Hippocratic Collection, more than 60 books detailing symptoms and treatments of many diseases. | Knowledge of disease |  |
| **c162 AD** | **GALEN** – continues the four humours theory but extends it to have the humours in opposition to each other. This meant that an illness could be treated in one of two ways, either removing the “excess” humour or by adding more to its opposite. Galen also proves the brain is important in the body (operation on the pig). Galen’s books would become the foundation of medical treatment in Europe for the next 1500 years. Galen wrote books on ALL aspects of medicine. The 4 humours was only about cause/treatment/prevention but he also wrote about anatomy and physiology. He wrote about ALL aspects of medicine. | Knowledge of disease.  Treatment |  |
| **Middle Ages** | **GALEN-** Yes, him again! He was dead, very dead. However the **Church** kept his IDEAS very much alive because he said the body was created. He did NOT mention God, but the **Christian Church** believed he was referring to God. You could not challenge his theories. If you did you were committing the crime of HERESY. (going against God) | Knowledge/treatment  /Anatomy |  |
| **1542** | **VESALIUS** – proved Galen wrong regarding the jawbone and showed that blood does flow through the septum in the heart. He published *“The Fabric of the Body”.* | Anatomy/knowledge (nothing else) |  |
| **1628** | **WILLIAM HARVEY**– proved that blood flows around the body, is carried away from the heart by the arteries and is returned through the veins. He proved that the heart acts as a pump re-circulating the blood and that blood does not “burn up”. | Physiology/knowledge (nothing else) |  |
| **1640s** | **Thomas Sydenham-** worked on diagnosis of disease. He believed that each disease was different and that it was important to identify the exact disease, so the correct remedy could be taken. He said all doctors should observe & record the patient’s symptoms before diagnosis. He also made detailed descriptions of many illnesses. | Diagnosis/knowledge |  |
| **1662** | **Royal Society-** set up to discuss & encourage new scientific ideas in scientific ideas including medicine. It published books and articles to spread new ideas. It had its own laboratory and equipment such as microscopes & printing press. | Knowledge | The new experimental approach to science changed the way scientists and doctors thought. Now they were prepared to challenge old ideas by looking for new discoveries that would make a difference to people’s lives |
| **1685** | **Death of Charles II** – The best doctors in England treated him using the 4 humours. This proves that the work of Vesalius and Harvey had no impact on Medical Treatment. | Treatment  Cause |  |
| **1796** | **EDWARD JENNER**– discovered vaccinations using cowpox to treat smallpox. Jenner published his findings in **1798**. The impact was slow and sporadic. In 1805 Napoleon had all his soldiers vaccinated. However, compulsory vaccination was not enforced until 1872. | Prevention |  |
| **1842:** | **EDWIN CHADWICK**– Publishes results of his survey of conditions in towns called *The Sanitary Conditions of the Labouring Population of Great Britain.* He said if towns were cleaner, there would be less disease. Therefore, few people would need time off work and this would save ratepayers money. Recommended legislation to improve sewage disposal and water supplies. | Public health/prevention |  |
| **1847** | **James Simpson-** After a dangerous experiment with work colleagues Simpson discovered that chloroform was an effective anaesthetic. In 1853 Queen Victoria praised the use of chloroform and John Snow developed a chloroform inhaler which made its use safer. | Hospitals/treatment |  |
| **1848:** | **First Public Health Act.** The Act was not compulsory. Therefore not many towns set up local boards of health. This does not mean **Chadwick** was insignificant as he highlighted the issues and laid the basis for reform. | Public health/prevention |  |
| **1854** | Crimean War –**Florence Nightingale** contributes majorly to the improvements in Hospital in the Crimea by cleaning the patients, bandages and bed clothes. When she returned to England she wrote a book called Notes on Nursing in 1859 and she opened a school for nurses at St Thomas’ in London in 1860. She believed in miasma and she focused on improving sanitation and good ventilation in hospitals |  |  |
| **1854** | **JOHN SNOW**– proved that dirty water was the true cause of cholera. He did door to door research, surveys and maps to show that the water from the Broad Street pump was causing the deaths. When the handle was removed the deaths stopped. | Public health/prevention |  |
| **1861-64** | **Germ Theory** developed by **LOUIS PASTEUR** whilst he was working on a method to keep beer and wine fresh – changed the whole understanding of how illnesses are caused as he proved that germs exist in the air. | Knowledge  /cause |  |
| **1865** | After the ‘Great Stink’ in 1858, **Joseph Bazalgette** was appointed to complete a new sewer system for London. By 1865, London had 1,300 miles of sewers. | Public health/prevention |  |
| **1867** | **Joseph Lister**- announces that his hospitals have been sepsis free for 9 months. After he read Pasteur’s work on germ theory he experimented using carbolic acid. He started by soaking equipment and bandages in the acid and he later started using a carbolic acid spray. | Hospitals /treatment | Lister’s methods were a turning point because the death rate reduced from about 46% to 15%. The development of antiseptic surgery led to the end of the Black Period of Surgery. By 1890 Lister’s antiseptic surgery had developed into aseptic surgery. (steam sterilisation after 1887, rubber gloves and scrubs) |
| **1870s and 8os** | **ROBERT KOCH** discovers the bacteria that cause **anthrax** in 1875**.** He establishes a new method of staining and growing bacteria. Using his methods, the causes of many diseases were identified quickly: eg 1878 **septicaemia**, 1882 **TB**. | Knowledge  /cause |  |
| **1875** | **Second Public Health Act** Local councils forced to provide clean water, sewage disposal etc. Councils forced to appoint Health Inspectors (Checking the quality of food in shops to ensure chalk had not been mixed into flour etc). | Public health/prevention |  |
| **1880-85** | **LOUIS PASTEUR…..** Him again. Pasteur developed a vaccine for Chicken Cholera in 1880. He then developed a rabies vaccine that worked on humans in 1885 BUT most importantly he proved his methods. He showed other scientists how to make other vaccinations. This led to MORE vaccinations typhoid 1896, TB 1906, Tetanus 1927, Polio 1954 | Prevention |  |
| **1886-1903** | **CHARLES BOOTH** Published his report *The Life and Labour of the People in London.* He said many people were living in appalling conditions of poverty and ill health. He said poverty was a result of sickness, old age, unemployment and low wages. | Public health/prevention |  |
| **1901** | **Karl Landsteiner-** He discovered blood groups- this showed that the donor and the person receiving the blood had to have the same blood type. | Treatment |  |
| **1909** | **PAUL EHRLICH** discovers first “magic bullet” – **Salvarsan 606** to treat Syphilis. The problem was it was based on arsenic and so could kill the patient too easily. | Treatment | This was the first ‘magic bullet’. This proved that infectious diseases could be treated. It also proved that chemical drugs could be made to treat diseases. This led to much more research in this area and in the 1930s Gerhard Domagk discovered Prontosil which was a sulphonamide based drug. Later other drugs based on sulphonamides were developed. |
| **1928** | **ALEXANDER FLEMING** – discovers **Penicillin.** The mould had grown on a petri dish that was accidentally left out. Fleming writes articles about the properties of Penicillin, but was unable to properly develop the mould into a drug. | Treatment |  |
| **1939-45** | **FLOREY AND CHAIN** work on producing penicillin as a drug. They completed a successful test on mice and on an injured policeman. Their success made the drug the second most funded project by the USA in WW2. After Pearl Harbour the US Government fund it to the tune of $800 million and every soldier landing on D-Day in 1944 has Penicillin as part of his medical kit. | Treatment |  |
| **1942** | **WILLIAM BEVERIDGE** published the Beveridge Report which recommended the government should provide a welfare state *‘taking charge of social security from cradle to the grave’.* He said people should be free from need, disease, ignorance, squalor and idleness. | Public health |  |
| **1946-48** | **Aneurin Bevan** Minister of Health, driving force behind the establishment of the **N.H.S.** Overcame opposition of the B.M.A. (doctors). Without the doctors there would be no **NHS**. Bevan’s inspirational speeches and compromises with the doctors ensure that **NHS** could become operational. As a result the **NHS** started in July 1948. | Public health/prevention  Treatment | Medical treatment was available for **ALL**  Life expectancy had increased dramatically  Women’s health a priority (dramatic reduction in maternal mortality)  Infant mortality halved  Hospitals equipped and staffed with specialist equipment in locations all over England |
| **1953** | Description of the structure of **DNA CRICK AND WATSON.** This proved DNA was present in human cells. The Human Genome Project provided a complete map of human DNA in the body. It also showed the exact purpose of all the genes in the body. | Cause/ treatment |  |
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**Tasks**: Get four colours- Colour code all the key individuals or developments (Only colour the left hand box, the one with the year in). Write in the impact of each discovery.

1750-1900 (Industrial period)

1900-Present

Renaissance

Middle Ages