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| **Area** | **Medieval / Middle Ages c.1000-1450**  ***Medicine stands still*** | **Renaissance c.1450-c.1800**  ***The beginnings of change*** | **Industrial c.1750-1900**  ***A revolution in medicine*** | **20th Century onwards c.1900-present day**  ***Modern medicine*** |
| Key individuals | Galen (developed from Hippocrates), John Arderne | Andreas Vesalius, William Harvey, Paré, Thomas Sydenham, John Hunter, Edward Jenner, Lady Mary Montagu | Louis Pasteur, Robert Koch and Paul Ehrlich, Florence Nightingale, William Farr, Thomas Southwood Smith, Edwin Chadwick, John Snow, Joseph Bazalgette, Dr Thomas Barnado, Elizabeth Garrett Anderson, Sophia Jex-Blake James Simpson, Joseph Lister, William Roentgen | Ehrlich, Domagk, Fleming, Florey and Chain, Crick and Watson, Rosalind Franklin, Maurice Wilkins, William Roentgen, Charles Booth and Seebohm Rowntree, Aneurin Bevan, William Beveridge, Lloyd George, Marie Curie |
| Key events / epidemics | The Black Death 1348-9 (killed 40% English population) | Royal Society given Royal Charter 1662  Great Plague 1666  Invention of the microscope  Invention of the printing press  Lady Mary Montagu introduces inoculation to Britain 1721  Jenner publishes his work 1798 | Cholera epidemics 1831, 1848, 1854, 1866  Public Health Act of 1848  The Great Stink 1858  The Representation of the People Act 1867 (w/c men in towns, cities) and 1884 (most w/c men)  Public Health Act 1875 | WW1 1914-18  WW2 1939-45  NHS set up 1948  World Health Organisation declares smallpox no longer exists 1980  AIDs first identified 1981 |
| Ideas about the cause of disease / anatomy | -The Will of God was the explanation for most things, very strong superstitious beliefs in magic, also the planets were thought to influence events on earth (Astrology)  -Learned ideas about medicine were largely based on Ancient Greek and Roman ideas, particularly two men – Hippocrates and Galen. The Four Humours were the most widely held belief about health. If your humours were out of balance you could get ill. You needed to balance them to be cured. The Four Humours are blood, phlegm, yellow bile and black bile.  -Arab medicine was far more advanced than European at this time. Muslim writers such as Avicenna were responsible for saving the works of Hippocrates and Galen which were later translated back for use in Europe, as well as adding their own work.  -Miasma-Flowers in BD 1348  -Minority groups blamed for the Black Death | -The belief in the will of God continued alongside a strong belief in magic and spells and Astrology.  -Bad air or Miasma was thought to be a source of disease.  -Lack of Balance in the four humours was still a theory but was losing ground by the end of the period as understanding of physiology developed.  -Andreas Vesalius (1514-64) challenged the ideas of Galen by studying anatomy and correcting Galen’s mistakes. E.g. the found that the human jawbone is made from one bone not 2 (as Galen said)  -Harvey (1578-1657) discovered that blood circulated round the body (travelling one way) rather than being manufactured by the liver (as Galen had said) and used experiments to show the function of the heart and veins.  - Marcello Malphigi uses better lenses in his microscope to discover capillaries, which carry blood from the arteries to the veins; Harvey did not know how blood moved from the arteries to veins (died 1657) | -Miasma  -Spontaneous generation; aware of microbes but think they appear automatically through decay  -Germ Theory published in 1861 but takes time to take hold  - Koch invented a way to stain bacteria so you could see them and identify which bacteria caused different diseases. | DNA theory - Crick and Watson 1953. Can explain heritable diseases. Faulty genes as the cause of inherited diseases such as Cystic Fibrosis.  Greater explanation alongside Germ Theory  Lifestyle choices - obesity, unhealthy lifestyles, smoking, alcohol |
| Treatments | -Religion played a massive part in people’s lives, so many believed God was responsible for causing and curing disease -Prayers to the Saints, Flagellation.  -Blood letting and treatments to balance the humours.  - Some **natural remedies** continued – Many cures were herbal; there was a good knowledge of herbs for treatments.  - Holy remedies were administered which were created from herbs and religious artefacts e.g. dust from the Holy Cross.  -Honey on cuts, for dog bites and wounds.  -Amputation for broken limbs at a barber surgeon | - changes in knowledge were slow to reach everyday practice. Many people rejected the new ideas and continued with their medieval cures.  - Family remedies were being used (rhubarb) but people also referred to books of herbal treatments. *The Complete Herbal* by Nicholas Culpepper published 1653 - Bloodletting and purging were used to balance out the humours.  - Potions were said to cure any sickness. Due to the increase in trade some these could be made of rare ingredients from the Americas and Asia.  -Getting the King to touch you to cure Scrofula  -Amputation for broken limbs  - Thomas Sydenham ‘The English Hippocrates’ = emphasised the importance of careful observation in diagnosis | - Family remedies were being used (dropwort and comfrey on grazes) but some people also referred to books of herbal treatments. - People believed that miasma was causing disease and therefore advised clean air (open windows, herbs) - Bleeding and the use of laxatives were considered by some to clear out the body.  -Patent medicines as ‘cure alls’  - Ehrlich invented ‘magic bullets’, drugs which could target specific organisms in the body. | - Vaccines, chemotherapy, radiotherapy, antibiotics, research into future gene therapy, blood transfusions.  - Alexander Fleming, Florey and Chain worked on developing penicillin – an antibiotic which could kill bacteria and cure disease. Fleming discovered by chance 1918 and published 1929.  -Natural remedies like honey still used for sore throats  -Alternative medicine, including herbal remedies, acupuncture, aromatherapy and reflexology, offer a different approach to pills and drugs.  -even severe bone breakages can be fixed with steel pins and plates  -X-ray technology was developed in the early 20th century to allow doctors to easily see inside patients.  -There are debates about whether science and technology is taking us too far and there is a risk we could end up ‘playing God’, with experiments in cloning and sterilisation taking place.  -Nowadays we have new concerns – obesity, unhealthy lifestyles, smoking, alcohol and the risk that ‘super-bugs’ will develop which can’t be killed by antibiotics. |
| Preventions | - Say your prayers and live a sin free life.  Use Herbs and magic potions to protect yourself.  -Flagellation (1348 Black Death)  -Carrying sweet smelling flowers to ward off miasma | -Chewing, smelling or smoking tobacco, newly discovered from South America to ward off miasma  -Wearing charms that say ‘abracadabra’  -Inoculation, introduced by Lady Mary Montagu 1721  - Edward Jenner discovered a vaccination for smallpox in 1798. He found that people who were given a dose of cowpox didn’t catch smallpox. His ideas were slow to catch on, but smallpox was such a dangerous disease that in 1853 the government made it compulsory for all children to be vaccinated against smallpox. | -Smallpox vaccination compulsory  - Koch invented a way to stain bacteria so you could see them and identify which bacteria caused different diseases e.g. Anthrax (1876) and TB (1882)  - Other scientists like Koch and Pasteur eventually start working on other vaccinations against other deadly diseases using Germ Theory - cholera, Typhoid, Dysentery, Tuberculosis (TB) | - The law stated that children must be vaccinated. - Health awareness campaigns e.g. ‘Catch it, Bin it Kill it’  - Exercise and healthy eating  - Many diseases have been wiped out altogether in Britain, but research continues in the battle against diseases such as cancer and new threats appear in the media, such as swine flu or the Zika virus. |
| Practitioners and training | -Treated by wise women, mum, barber surgeons, physicians, Apothecary, monks and nuns  - Doctors were for the wealthy. Ordinary people would visit a barber-surgeon or apothecary.  -Use or urine and zodiac charts  -The church controlled training and introduced formal qualifications for training at universities (Oxford and Cambridge).  -7 years of training were required, based on reading and lectures on the works of Galen and Avicenna.  They also learnt astrology. Challenging Galen was discouraged; Roger Bacon suggested doing his own research, he was imprisoned by the church.  -Women could not train as they were barred from universities. | -Doctors and surgeons began to be more qualified and regulated, with an improvement in their status. However, many people continued to use ‘quack’ doctors.  -Church control over training was reduced due to the Reformation  -Galen was widely read but Greek and Roman Scholars began to be challenged through research. Vesalius’ “Fabric of the Human Body” 1543 was eventually available in every medical school in Europe.  But new ideas took time to be accepted  -Harvey (1578-1657) discovered that blood circulated round the body one way and used experiments to show the function of the heart and veins. Harvey’s Theory of Circulation was not accepted or taught in lectures by the University of Paris for almost 50 years.  - Johannes Gutenberg’s printing press meant more medical books were spread for doctors to learn from.  -improved lenses for the microscope developed by Van Leeuwenhoek – he saw bacteria but didn’t know what it was  -Women not permitted to attend universities so could not train. Invention of forceps by the Chamberlain brothers barred them from aspects of midwifery | -Treated by private physicians, untrained nurses (until Nightingale)  -Control over training was now down to individual universities.  There was no direct government control over training but Doctors had to register with the General Medical Council from 1858 by order of Parliament  -Doctors attended lectures and were taught how to keep case studies and effectively use the scientific method.  They were taught about Spontaneous Generation and eventually Germ Theory and were expected to undertake some practical experience on wards  -From 1876, following the efforts and Elizabeth Blackwell and Elizabeth Garrett-Anderson, women were permitted to train as doctors | -Treated by trained doctors and nurses, GP’s, midwives, paramedics  -The General Medical Council regulates all training and submits proposals for any major changes to training/standards to the government, who they are accountable to  -All doctors have to complete a 6-year medical degree before specialising in an area of medicine e.g. paediatrics, which they continue to study for 1-2 years to qualify.  They are expected to keep abreast of the latest developments by reading journals like the Lancet and going on further training courses  -Women are now widely represented in the medical profession with the number of trained women GP’s set to overtake men by 2025.  Women are not barred from studying any aspect of medicine but are still underrepresented in some areas of medicine like surgery |
| Surgery | -Dissection was banned as sacrilege.  - pain relief - Hemlock, mandrake root and opium poppy – all plants  -John Arderne’s more scientific approach | -Dissections became more common as people were less willing to accept church rulings.  -Vesalius took the bodies of hanged criminals for his work on anatomy. Vesalius used the work of artists who had conducted dissections to illustrate his book  -Paré (1510-90) is often known as the ‘father of modern surgery’. He experimented widely and wrote a lot to educate others. He used ligatures to seal a wound. | -before 1840, 40% or surgery was fatal  -Anaesthetics were also developed to make surgery and childbirth less painful.  -Lister began to use carbolic spray during operations as an antiseptic.  -Once surgery was pain free and patients were likely to survive, new techniques could be developed.  -Medical science was flourishing so the demand for bodies to dissect was high and legal supplies failed to keep pace with demand prompting grave robbing and even murder (e.g. Burke and Hare) to supply medical schools | -WW1 accelerated progress in surgery, leading to methods of blood storage and transfusion, prosthetic limbs, plastic surgery, skin grafts and reconstruction.  -Many new surgical procedures have been developed, including transplants, heart pacemakers, hip replacements and test tube babies. Keyhole surgery is now common.  -X-ray technology was developed in the early 20th century to allow doctors to easily see inside patients.  -Dissection is compulsory and bodies are sourced through people donating their body to medical science after they have died |
| Hospitals | The Church was important in setting up hospitals and caring for the sick. E.g. St Giles Hospital In Norwich, 1249. They focused on care not cure and limited patient numbers e.g. 12 patients because 12 disciples | An increasing number of hospitals were set up to treat the sick but access to treatment was still limited for most | -Nightingale’s clean up resulted in a reduction of death rates from 40% to 2% in her wards in the Crimea  -The discovery of germs led to improvements in cleanliness in hospitals.  -Growth of hospitals e.g. 36 in London by 1860 | The National Health Service was set up in 1948, offering free healthcare to all. |
| Public Health | - Collapse of Roman Empire led to regression in Public Health. No engineering to maintain or build facilities. (new priority was on war preparation rather than PH)  - No overall tax system to pay for PH / army to collect tax- The new priority was for rulers to maintain or expand their Kingdoms.  -Latrines were often built over rivers where people got their water from.  - The remains of butchered animals were left in the streets, which attracted mice and rats.  - Lead pipes were used to provide water in London Southampton and Exeter (often contaminated)  - Animal and human excrement left in the street.  - 1281 The government attempted to stop pigs being allowed in the streets.  -1347 Sanitary act tries to keep the streets cleaner  - 1388 parliamentary statute for clearing dung + filth.  - Rich people often had good standards of hygiene (bathing in wooden tubs). | - During the 1665 plague, rakers were employed by the government to rake filth from the streets and would deposit it in rivers where it easily contaminated water supplies.  - Laws passed to contain the 1665 plague (houses boarded, cats and dogs banned. Searchers had to check bodies to confirm plague in areas.)  - There were some hospitals in the 1600s that existed but relied on charitable funds.  - Animals were still kept in the street and caused filth.  - People still went to the toilet in the street.  - No understanding of germs or how germs spread.  - Early 1700s- fresh water supplied by private companies and only switched on at certain times in the day.  - Lazarettos in Italy isolated plague victims.  - Belief in Miasma. | The nineteenth century saw massive population growth – from 16.3 million in 1801 to 41.6 million in 1901. Rapid growth in towns led to initial public health problems, including diseases such as cholera.  - 1848 Health Act (sewer systems, removal of rubbish, board of health, medical officers for each town) This act was not long-lasting.  - 1866- sanitary act forced all towns to appoint inspectors to check water supplies and drainage  - 1875- demolish slum housing  - 1875 - Health Act- (local councils responsible for clean water, public toilets, rubbish removal, sewers and drains)  - Many people believed in a ‘laissez-faire’ approach to PH.  - Cholera was a major issue with outbreaks in 1831,1848, 1854 and 1866.  - New technology such as Bazalgettes work on sewers improved PH  - Work by Snow led to government intervention.  - The work of William Farr made a connection between high death rates and unhealthy living conditions.  - Many workers lived in back to back housing.  - Edwin Chadwick and his investigation put pressure on the government.  - The work of Pasteur prompted more government investigation into PH  - Compulsory vaccination was strictly enforced from 1871. | - Charles Booth and Seebohm Rowntree carry out surveys in London and York finding between 25-33% of people in certain cities are living in poverty.  - The Liberal Government of 1906 – 14 passed a series of laws to improve the health and well-being of the people, including introducing National Insurance (1911), Old Age Pensions (1908), Free school meals (1906) and banning back to back houses (1909).  - Homes for heroes after WW1  - The Beveridge Report 1942(banish want!)  - The creation of the NHS (Bevan) 1948  NHS-Hospitals built, more doctors and nurses, increased life expectancy, increased access to treatment, particularly for the poor.  - 1950s Developments in vaccinations (e.g. Polio)  - Demand on NHS grows in the second half of 20th Century  - Public health-prevention and education (laws on food safety, government campaigns about smoking, better treatment of rubbish and disposal, better government communication, school dinners) |