Theme: KNOWLEDGE OF DISEASE – cause, prevention and cure			
1. How did ideas from the Ancient World influence Medieval medicine? 2 significant individuals – Hippocrates and Galen – their ideas and contributions to medicine The Theory of the Four Humours – it's impact on the development of medicine in Britain			
2. What did Medieval people think made them ill? Supernatural ideas, God, Four Humours, Bad Smells and Everyday life Why people believed these ideas and how these ideas influenced treatment			
3. Who helped Medieval people when they were ill? • **Doctor / physician** • **Barber Surgeon** • **Wise woman / man** • **Lady of the House** - • **The Church** • **Apothecary** Know – Training required - Method of treatment CostWhere service offered - Difference between rich and poor -			
4. How did Christianity affect Medieval medicine? **Christian beliefs linked to disease –** sent by God / follow example of Jesus – care not cure • **Christian ideas about treatment** – prayer, 'not consult with physicians', miraculous healing, holy relics, pilgrimage • **Treatment of the sick** – 1000-1500 –hospitals – place of rest, no doctors only a chaplain (priest) – run by monks / nuns, run as charity – financed by Church or patron - different types of hospital e.g. asylum, Lazar house (leprosy)			
5. Did Christianity help or hinder progress in Medieval medicine? • **Help** – training – University – study – run by church – medicine as second subject after religion, care offered to patients, hospitals – cleanliness next to Godliness • **Hinder** – followed theories of Galen (one God) – Four Humours – but a mistaken theory – straightjacket on development, no new ideas allowed (Roger Bacon – imprisoned), no cure for patients as God's decision of life or death, no dissection			
6. How did Islam affect Medieval medicine? **Islamic ideas linked to disease** – for every disease Allah has given a cure, Prophet Muhammed encouraged study of medicine – TREATMENT not just care. Birmaristans set up for care of all – rich and poor – doctors trained with practical experience • **Caliphs** – leader of Islamic Empire – strong leader / stable government encouraged progress • **Caliph Harun al-Rashid** = preserved and translated Ancient texts • **Caliph al-Mamun** = turned father's library into House of Wisdom **Significant individuals – their ideas reaching Britain via traders and The Crusades** • **Rhazes** – careful observation, followed Galen but 'Doubts about Galen • **Avicenna** – Canon of Medicine – covered Ancient knowledge - translated in Italy			
7. Did Islam help or hinder progress in Medieval medicine? • **Help** – ideas of Avicenna and Rhazes, new drugs / herbs e.g. Senna, laudanum • **Hinder –** ideas not accepted by Christians in Britain who continued old ideas, still believed in Galen and Ancient ideas, not all ideas reached Europe			
8. A case study in Medieval medicine: The Black Death Know Medieval ideas about the cause of the Black Death, the symptoms, ideas about prevention, ideas about treatment, ideas about cause and how they demonstrate Medieval beliefs			

9. What was the Renaissance and how did it impact beliefs about medicine?

Renaissance means 'rebirth' – new ideas and new thinking – 'scientific method' question Ancient beliefs

- **Impact of the Renaissance** – discoveries of new lands, new ideas e.g. printing press, new inventions e.g. gunpowder, new art e.g. realistic studies of the body

10. What was the impact of Andrea Vesalius on British medicine?

- **Anatomical drawings** – evidence based – ***The Fabric of the Human Body*** – focused on systems within the body
- **Dissection** as a method to find out more about the human body – questioned Galen
- **Ideas to Britain** – Vesalius' drawings added to medical text called ***Compendiosa*** (text by French surgeon Henri de Mondeville) studied by barber surgeons
- **Significance** – no direct cure / treatment but foundation for future study

11. How important were Ambroise Pare's discoveries?

- **Experience on battlefield** – led to discoveries, invention of gunpowder and gunshot wounds as new injuries to treat, use ***Of Wounds in General*** by Jean de Vigo to treat wounds – use of boiling oil, improvised when oil ran out – new mixture / cream which worked to soothe patients injuries more effectively
- **Method** – challenge held views with experimentation and observation of patients, promoted use of ligatures as preferable to cauterisation ('too cruel a way of healing)
- **Inventions** – crow's beak clamp – to help with ligatures (but ligatures proved slow when speed essential in early surgery), designed and made false limbs
- **Significance** – inspired by Vesalius' work on anatomy – translated his work into French, Pare's book ***Works on Surgery*** was translated into English and used by barber surgeons and others, other surgeons followed Pare's renaissance approach e.g. William Clowes surgeon to Elizabeth I – treatment of burn with onions.

12. What was the impact of William Harvey on British medicine?

- **Theory of blood circulation** – blood moves one way around veins and valves and is not produced in the liver and burned up as fuel (challenge to Galen)
- **Four Humours incorrect –** idea of too much blood was false and so too blood letting
- **Scientific method** – observation of human hearts and slow beating hearts of coldblooded animals, ***De Motu Cortis*** – 12 years to publish his work but still controversial and unable to answer why blood circulated, why different coloured blood etc.
- **Significance** – no direct cure / treatment but idea eventually accepted and taught to medical students. Basis for further study e.g. blood transfusions, blood tests, heart transplants etc.

13. How were people treated in the seventeenth and eighteenth century?

- **Treatment of Charles II** – use of bloodletting, purging, enema, emetic – ancient ideas of four humours still practised
- **Ordinary people** – barber surgeons, apothecaries, wise women, quacks, superstition e.g. scrofula – king's touch, herbal remedies – Nicholas Culpepper ***The Complete Herbal*** = Invention of printing press – allowed poor access to texts
- **New medicine** – due to voyages of discovery e.g. opium from Turkey, tobacco from South America, lemons and limes to treat scurvy, quinine for malaria
- **Thomas Sydenham** – the English Hippocrates – examination and observation, successfully treated malaria using quinine, diagnosed man as hypochondriac, cooling treatment for smallpox rather than 'sweating it out'

14. How did hospitals change in the eighteenth century? • **Declining influence of the church on hospital care** (dissolution of monasteries) • **Funding** - wealthy individuals, charities and private subscription to fund hospitals (although still religious motivation as good deeds / Christian belief) • **Training** - Doctors received training and practical experience • **Types of hospitals** – different wards for different diseases, maternity care, mentally ill • **Hospital boom** – growth of new hospitals – religious motive and changing attitude to disease (not a punishment from God so attempt to deal with illness)			
15. How did doctors deal with the Great Plague? A case study in Renaissance medicine Compare beliefs about the cause of disease, ideas about preventions, treatments and cures – similarities and differences • **Organised approach** – mayors and councillors issued orders to deal with disease, women searchers, quarantine, plague carts, plague pits, lord have mercy upon us, trade bans e.g. border with Scotland closed, no group gatherings			

16. How did Edward Jenner help defeat smallpox? Improved knowledge about the prevention of illness • **How smallpox had been treated / prevented previously** – smallpox, pus filled blisters, highly contagious, could kill (30% of those who got it). Inoculation practised in China / Asia – idea brought to Britain by Lady Mary Wortley Montague from Turkey • **Problems with inoculation** – religious opposition (playing God), uncontrolled – could kill, still infectious with disease, poor people could not afford • **Vaccination** – old wives tale – milkmaids who have cowpox do not get smallpox, Jenner experimented – 8 year old boy and then 16 times. Benefits as controlled, not deadly, Jenner did not patent idea – so widely available • **Opposition to change** – religious, rich doctors, medical profession, William Woodville unsuccessfully tested theory • **Significance** – idea accepted within his lifetime, influential supporters e.g. government funding, royal family vaccinated, not Jenner's idea but he scientifically proved that vaccination worked, saved lives – poor too, government made compulsory in 1853 (after Jenner's death) BUT no knowledge of HOW it worked so limited impact for other vaccinations			
17. How did doctors in Britain find that germs caused diseases? • **Progress in bacteriology** – 1677 basic microscope – tiny organisms (microbes) identified – question old idea that infections were a chemical reaction within the wound and spontaneous generation. Progress = specificity – microbes were not all the same – Henle said microbes caused infection. • **Ideas about spread of disease** – contagionist, anti-contagionist, miasmatist • **Louis Pasteur and Germ Theory** – proved with scientific method – germs make substances go bad if exposed to air, swan neck vase, biological NOT chemical			
18. How did germ theory come to be accepted in Britain? • **Cattle Plague of 1866** – Professor Lionel Beale identified the germ causing the plague • **Bastian vs. Tyndall** – Bastian still support spontaneous generation challenged by Tyndall who defended Germ Theory and supported Pasteur's work • **Typhoid fever** – killed Prince Albert – proved anti-contagionists to be incorrect. Klein wrongly claimed to have identified typhoid germ – Tyndall used this as evidence spontaneous generation was wrong and germ theory was right.			

19. How did scientists discover that germs cause disease?

- **Robert Koch** – used work done by Pasteur but went one step further and proved germ caused human disease
- **Methods** – improved bacteriology, found specific germs cause specific diseases – experimented on animals and retrieved the germ which was then cultured (grown) on slides, used dyes to stain germs to see under microscope, photography of germs to classify and spread knowledge to others.
- **Reactions in Britain** – Dallinger, Drysdale, Tyndall – all published work and promoted germ theory in Britain. Roberts and Cheyne (won over opinion) – developed doctor's version of germ theory and Cheyne translated Koch's text. Cheyne also established some microbes were present in human tissue but were harmless.

20. How did vaccination develop in the 1880s and 1890s?

Factors influencing the development of vaccines:

- **War, Government and Finance, Significance of Individuals, Luck, Communication and Teamwork**
- **Paul Ehrlich** – first chemical cure / **magic bullet** – Salvarson 606 (1909) which cured syphilis – part of Koch's team

21. What can the study of penicillin tell us about the development of modern medicine?

- **Development of prevention and cure** – developments made by Pasteur and Koch
- **Fleming's discovery** – staphylococcus (nasty and resistant germ) – caused food and blood poisoning, WW1 – Fleming working on methods to kill staphylococcus – accidental discovery of penicillin (mould which killed the germ). Fleming published work but did not realise penicillin was an anti-biotic so no further development.
- **Development of penicillin** – Florey and Chain (British scientists) investigating Fleming's work – impact of WW2 – lack of government funding in Britain – experimented on mice and human subject (but difficult to produce enough penicillin). US government funding –mass production - pharmaceutical companies.
- **Impact** – immediate impact for WW2 soldiers – 15% of wounded men would have died without penicillin, allowed for development of other antibiotics e.g. mitomycin etc.

22. How have drugs and treatment developed since 1945?

Changes made since WW2 to disease and treatment:

- **Body and disease developments:** contraceptive pill, discovery of DNA, CAT scanner, endoscopes, smallpox eradicated, MRI scanning, cloning, Human Genome Project, stem cell research ec.
- **Treatment of disease developments:** free vaccine for T.B., diphtheria, whooping cough, tetanus, thalidomide developed in Germany – given for morning sickness but led to deformities in babies – now used to treat AIDs and some cancers, cyclosporine – prevents rejection of transplanted organs, IVF fertility treatment, test tube baby, HPV vaccine introduced etc.
- **Factors influencing the development of drugs and treatment:** Government and Finance, War, Communications, Individuals, Change in attitudes and ideas

23. Beyond mainstream medicine – why is alternative medicine needed?

- **Antibiotic resistance** – bacteria can evolve and become resistant to antibiotics e.g. MRSA – leads to alternative therapies
- **Incurable diseases** – some cancers and viruses e.g. AIDs, the common cold – cannot be cured.
- **Lack of confidence in modern medicine** – mistrust e.g. Harold Shipman
- **Benefits of alternative therapy** – considers patient (holistic), wellbeing and mindfulness promoted, emphasis on lifestyle changes – prevention better than cure, availability on NHS in addition to other services
- **Examples of alternative therapy** - reflexology, aromatherapy, hypnotherapy, homeopathy, acupuncture