Changes in Health and Medicine in Britain c500-present

1hr 15 min exam
7 questions

1) **Use Sources A, B and C above to identify one similarity and one difference in……[4]**
2) **Which of the two sources is the more reliable to an historian studying…… [6]**
3) **Describe the development of …….. [5]**
4) **Explain why developments in ……. were important in…(Focus)……(dates) [9]**
5) **Outline how…… to …….. have changed from c.500 to the present day? [16] + 4**

6a) Describe two main……. [8]
6b) Explain why the……. was significant …… in……..[12]

From September 2024 version

Changes in Health and Medicine c. 500 to Present Day

UNIT OVERVIEW

Pages 4-8	**KQ1: Causes of illness and disease: What have been the causes of illness and disease over time?**			
	Medieval period: poverty, famine, warfare: lack of hygiene. Black Death			
	Early Modern period: poverty, famine, warfare: lack of hygiene. Great Plague			
	Industrial Period: the effects of industrialisation and the incidence of cholera and typhoid			
	20th Century: the spread of bacterial and viral diseases			
Pages 10-16	**KQ 2: Attempts to prevent illness and disease. How effective were attempts to prevent illness and disease over time?**			
	Medieval preventions; alchemy, soothsayers and medieval doctors, Black Death			
	Application of science late eighteenth and early nineteenth centuries			
	Edward Jenner and vaccination; the influence and spread of inoculation since 1700;			
	20th Century. Discovery of antibodies and developments in the field of bacteriology.			
Pages 19-25	**KQ 3: Attempts to treat and cure illness and disease: How have attempts to treat illness and disease changed over time?**			
	Medieval and Early Modern treatments; herbal medicines, barber surgeons, use of leeches;			
	Industrial Period: Lister and antiseptics. Simpson and anaesthetics. Aseptic surgery.,			
	20th Century: Marie Curie and radiation. Fleming, Florey and Chain – antibiotics. Transplant surgery. Cancer treatment and surgery. Alternative treatments			
Pages 28-35	**KQ4: Advances in medical knowledge: How much progress has been made in medical knowledge over time?**			
	Medieval – influence of alchemy, astrology and the theory of the four humours			
	Early Modern: Vesalius, Pare and Harvey in sixteenth and seventeenth centuries			
	Industrial Period: Germ Theory, work of Pasteur, Koch and Ehrlich			
	20th Century: Development of scanning techniques: X-rays, ultrasound and MRI scans. DNA and genetic research.			
Pages 38-46	**KQ5: Developments in patient care: How has the care of patients improved over time?**			
	Medieval: church and monasteries from medieval times up to the mid sixteenth century			
	Voluntary charities. Science and the development of endowed hospitals.			
	Florence Nightingale and the professionalisation of nursing			
	20th Century Liberal reforms; the Beveridge Report of 1944 and provision under the NHS after 1946			
Pages 47-57	**KQ 6: Developments in public health and welfare: How effective were attempts to improve public health and welfare over time?**			
	Public health in Medieval and Early Modern period			
	Industrial Period: Chadwick. Saltaire – Municipal Socialism.			
	20th Century: Housing and pollution – New towns. Clean Air Act. 21st Century – improve public health/welfare. Fitness &, healthy eating			
	KQ7: A study of the historic environment connected with Changes in Health and Medicine in Britain c.500 to present day			
	Assessment 2026/7–			

	Medieval 500 - 1500	EARLY MODERN 1500 - 1750	INDUSTRIAL REVOLUTION 1750 - 1900	2OTH CENTURY 1900 - 2000
HUMAN HEALTH	• Life expectancy: 35 years	• Life expectancy: 36 years	• Life expectancy: 46 years	• Life expectancy: 80 years
KQ1- CAUSES OF ILLNESS	• Poverty -> malnutrition • Famine • Warfare -> infection • The Black Death 1348- 1349	• The Great Plague 1665 • Overcrowding • Great Fire of London	• Snow - Cholera- John Snow's map • Movement of people from the country to the city -> over population -> increase of housing -> low standard of living • Miasma theory (dirty, city air causing disease)	• Bacterial infections -> resistance to drugs • Troop movement -> spread disease • Viruses e.g. Spanish Flu and AIDS
KQ2- PREVENTING ILLNESS	• Alchemy, Soothsayers, Mother Shipton • Medieval Doctors • Superstition • Barber Surgeons	• Clean living, fresh air • Cold water treatment - spas • Diet and exercise • Vegetarianism became fashionable	• Immunology • Jenner- developed vaccinations (he noticed milk maids who got cowpox never got smallpox) • Pasteur • Koch	• Koch- developed Jenner's findings • Antibodies- the use of bacteria to prevent illness • Ehrlich Magic bullets (first effective treatment for Syphilis • Public Health NHS Vaccine programmes - MMR
KQ3- TREATMENT	• Astrology – zodiac charts • Herbs • Barber Surgeon • Leeches and bloodletting	• Amputation • Barber Surgeon • Blood letting	• Lister- antiseptics • Opium and alcohol to numb pain during surgery • Laughing gas • Simpson - Chloroform	• Curie- radiotherapy • Fleming- antibiotics • Florey & Chain - antibiotics • Barnard- transplant surgery • Alternative therapies • Microsurgery
KQ4- MEDICAL KNOWLEDGE	• Galen - astrology • Hippocrates- 4 Humours • Church influence	• Vesalius- dissected humans • Pare- surgeon, prosthetic limbs • Harvey- blood circulation • Microscope invented	• Pasteur- Germ Theory • Koch- isolated different germs • Ehrlich Magic bullets (compounds that target and kill disease-causing microbes in the body) first effective treatment for Syphilis	• X Rays • CT, PET and MRI scanning • Ultrasound
KQ5- PATIENT CARE	• Hospitals ran by the church • Alms-houses (care homes for the elderly) • Money given by rich people believing they would go for heaven for helping others	• Henry VIII closed church-ran hospitals • Charities and town councils took over	• Nightingale- hygiene standards • Dispensaries set up • Teaching hospitals -> professional nursing	• Liberal Reforms – National Insurance. School Health • Beveridge report, NHS set up 1946 • Government Welfare- pensions and insurance • Medical inspections
KQ6- PUBLIC HEALTH	• No Public Health / accidental • Limited knowledge or understanding • Seen as unimportant	• Link made between dirt and disease • The Great Fire of London -> rebuild London -> better hygiene	• Bazalgette – London sewer • Chadwick- link sanitation and health • Slum clearance • Public Health act- 1848	• Council housing • Running water, electricity • Clean air act (smog) • Healthy lifestyle campaigns (5 a day)

Key Qu- 1

What have been the causes of illness and disease over time?

You need to know about:

- Problems in the medieval era: poverty, famine, warfare: lack of hygiene (p5)
  Black Death of the fourteenth century
  Great Plague of the seventeenth century; (p6-7)
  the effects of industrialisation and cholera and typhoid in the nineteenth century; (p7-8)
- the spread of bacterial and viral diseases in the twentieth century (p9)

KEY VOCAB: History

Famine
People starve because of a lack of food grown

Cholera
An infectious and often fatal disease caused by bad water supplies

Miasma
Mist causing illness as a result of bad air

Bubonic Plague
Disease spread by fleas of small animals eg rats.

Typhoid
An infectious bacteria which causes red spots on the chest and stomach

Epidemic
Disease affecting a whole population.

Pandemic
affects the whole world

Black Death
A pandemic which spread through Europe in the middle ages, not directly linked to the Bubonic Plague

Spanish flu
An infectious flu pandemic that swept through Europe after World War 1

Poverty
The state of being very poor

Medieval | Early Modern | Industrial | 20th century and beyond

1066 1500 1750 1900 2000

Causes of disease in Medieval times

POVERTY

The population of Medieval England was about 5 million people. Most people in the countryside in agriculture. About 25% of rural families owned and farmed their own land. But most owned no land at all. They were peasants who worked on land that was owned by the Lord of the Manor. They were dependent on him for work and food. They might keep a few animals: chickens or a pig. These were killed in the autumn and their meat preserved with salt to try to make it last through the winter.

Most peasants ate pottage (a kind of stew made from beans and oats). Peasants might be able to hunt and kill a rabbit or fish but if they were caught poaching they would be severely punished.

Child mortality was high and malnutrition was common.

Landowners began to enclose more land in order to keep sheep. But this meant peasants were no longer required to work growing crops such as wheat or barley on the land. They had no way of earning money or growing enough food, Sheep farming required very few workers so paid work for the peasants became very hard to come by.

ACCIDENTS

Accidents were common and often fatal. Eg 1387 Richard Dousyng fell because the branch of a tree he had been climbing broke. He broke his back and died shortly afterwards.

FAMINE

Bad harvests would lead to famine and this was a regular occurrence. The worst recorded famines occurred in 1082, 1086, 1087, 1258, 1315 – 1317, 1437 – 1449.

In 1315 – 1317 terrible weather ruined planting and harvesting for 3 years. The poor harvests were compounded (made worse) by the death of animals from disease and a shortage of fodder (animal food). Peasants couldn't even .preserve the meat to keep for later as they couldn't afford to buy the salt. It wasn't until 1324 that things fully recovered. Historians estimate that this famine killed about 15% of England's total population.

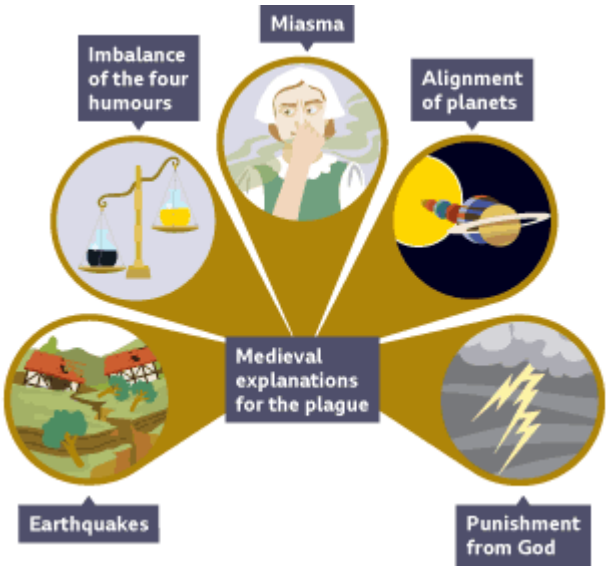
WARFARE

Warfare could also lead to poverty. An army would take food, animals and fodder from towns and villages, usually promising to pay later but they usually never did. Soldiers were not paid properly so would often steal food – animals or crops. This left towns, villages and farms without enough food for themselves.

HYGIENE

Storing crops over winter could lead to the spread of disease. Saint Anthony's disease was caused by a fungus which could grow on rye that was stored in a damp barn. The rye was ground into flour and made into bread. People eating this bread would develop a painful rash and some would then die.

But what did Medieval people think at the time….



Medieval | Early Modern | Industrial | 20th century and beyond

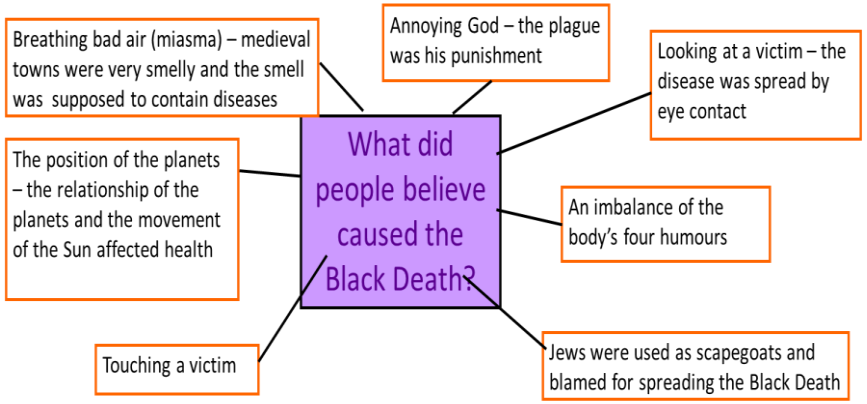
1066 1500 1750 1900 2000

Causes of Black Death- Medieval (pandemic)

In 1348–49 Britain faced the worst crisis in its history. A deadly disease arrived from Europe which appeared to kill people at random, and no one knew why.

This disease was the **bubonic plague**. Symptoms: fever, headache, tiredness and painful swellings (buboes) the size of an apple in the groin and armpits. Small, oozing red and black spots all over the body, giving the disease the name the Black Death. Patients lasted just a few days before a painful death.

The plague killed the rich and poor. What really frightened people, however, was the speed with which the disease swept across Europe and the number it killed. Nearly forty percent of the English died. Never before or since has there been any disaster so horrific.



Early Modern Era (epidemic)

The causes of disease from the Medieval period continued into the Early modern.

Early Modern period
The Great Plague 1665-
What caused it?

Spread by cats and dogs

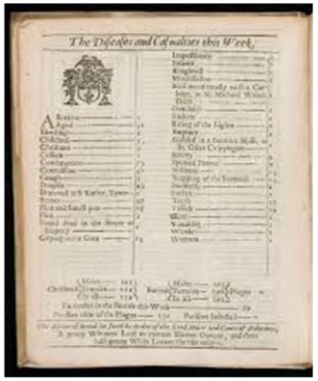
Sent by God as a punishment for being sinful

London was a busy port and a trading centre for the whole world

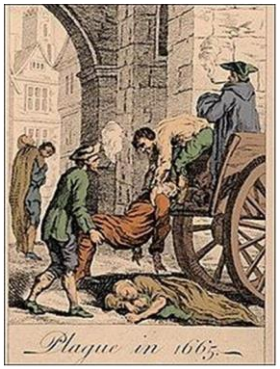
Details:
In 1665 approx. 100,000 people died of the Plague in London, approx. 25% of the population. Other towns and cities were affected eg Eyam. Most doctors and wealthy people fled the city fearing for their lies.

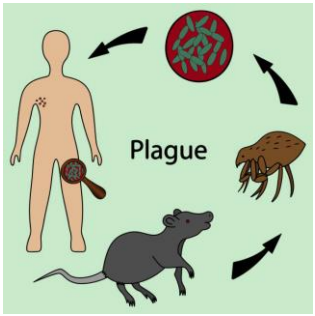
Caused by bad air 'miasma'

Houses were built close together and rubbish was dumped in the sewers and rivers outside

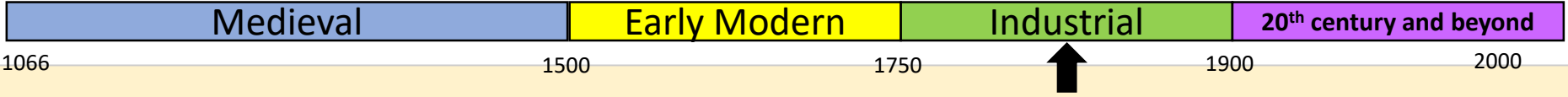


Weekly Mortality Bill London 1664





We know the bubonic plague is spread by the fleas which lived on rats passing it to humans- but Medieval + Early modern people had no idea this was the cause



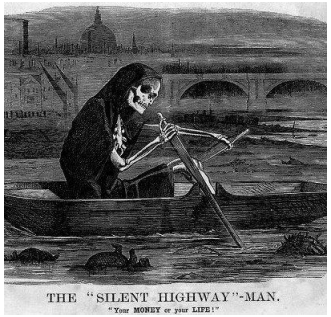
Effects of industrialisation in 19th Century (Industrial period)

The two most feared diseases of the Victorian period were **Cholera** and **Typhoid.** These diseases were spread by contaminated water.

Cholera killed very quickly and painfully.

no one knew what caused it or how to cure it

1831 - 32	50,000 deaths
1848	60,000 deaths
1854	20,000 deaths



Typhoid lasted several weeks and was often fatal.

Could also be passed through contaminated food and faeces (that's poo!)

During the 1897 Typhoid outbreak nurses treating the sick were given bravery medals, such was the view of how dangerous it was.

The **Industrial Revolution** resulted in the spread of factories and the growth of industrial towns and cities such as Glasgow, Manchester, Birmingham and Sheffield. Factories needed housing to be built for workers.

Public health problems in industrial towns • **Squalid living conditions** meant that outbreaks of disease were common.
• Tenements were overcrowded, large families lived in cramped conditions.
• **Sewage contaminated drinking water, which led to outbreaks of cholera and typhoid; people did not know infected water spread cholera germs.**

People in this period thought it was **miasma**, terrible smells, that caused disease. This is why they were so worried about events like the Great Stink in London in 1858 when sewage made the River Thames smell during the summer heat. It was that bad Parliament was closed down!Dr John Snow proved that cholera was a waterborne disease after his study of the Broad Street Pump in London in 1854.

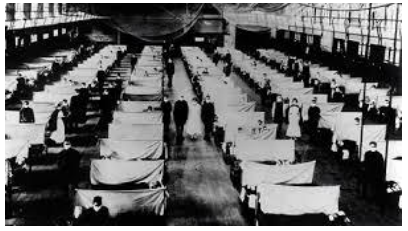
Great Stink 1854

	Cholera	Typhoid
Dates of epidemics (outbreaks)	1831-32, 1848 and 1854	Ever-present but an example includes 1897-98
Description of what it is	Bacterial infection from consuming infected food or water	Bacterial infection transmitted through poor sanitation and lack of cleanliness
Origins / causes	Bengal, India and spread via trade routes	Records of outbreaks date back to ancient Greece, usually present at time of war and in crowded towns
Statistics on its impact	130,000 UK deaths from the three outbreaks in the C19th	1897-98 outbreak in Maidstone saw 1800 out of 34000 contract the disease, killing 132. This outbreak overwhelmed local medical services.

The spread of bacterial and viral diseases in the 20th century

In the 20th century, bacterial and viral diseases continued to spread as there was increased travel between countries, migration and two world wars.

Case study 1: Spanish Flu, 1918–19 - In 1918, a pandemic spread around the world. Up to 40 million people died from this strain of bird flu from China. It infected 20% of the world's population. The end of the First World War helped transmit the disease as returning troops spread it to the civilian population. 7 million deaths were reported in Spain, so the disease was called Spanish Flu. It could kill a person in a day. Hospitals could not cope. It killed 280,000 people in the UK.



Case study 2 : Tuberculosis - spread by coughs or sneezes. It used to be known as consumption as sufferers gradually lost weight. It was associated with poor housing and unhealthy working conditions of the Industrial Revolution. 'Fresh air' was thought to be the cure. By the 1950s better sanitation and vaccination reduced cases significantly. Isolation hospitals were set up in the countryside to help prevent the spread of the disease, but also to provide fresh air to help sufferers recover. The rise of drug-resistant strains in the 1980s, particularly amongst the homeless, means that the fight against TB continues.

Case study 3: The HIV/AIDS threat - In 1981, the first cases of AIDS were reported in the USA. The AIDS virus is spread through the blood or body fluids of infected people – via sexual contact or by sharing injection needles with an infected person. In AIDS a virus called HIV destroys the body's immune system. The victim does not die of AIDS but of other infections that their body can no longer fight. By 2000 an estimated 30 million people were infected with AIDS, the worst affected area was Africa. By 2000 over 8 million people had died because of AIDS.

The government funded a tv campaign to highlight the dangers of AIDS.
It was not successful. It was too unclear and didn't talk about practical ways for young people to protect themselves.
AIDS was linked to homophobia and a lack of understanding of the causes of the virus.

Homophobic newspaper headline 1984

21st century Lifestyle diseases

New kinds of diseases have also begun to affect people in the modern era.

- As people are living longer so they become more prone to get cancer – one in three people in the UK will be affected by it at some point in their lives.
- Lifestyle changes like increasing smoking of cigarettes and drinking of alcohol have also led to a growth in obesity, diabetes and certain kinds of cancers which did not affect people in earlier times.

KEY QUESTION 1-What have been the causes of illness and disease over time?

Causes – medieval period

Causes – Early Modern period

For each time period make notes about what was believed to cause illness and disease.

Causes – Industrial period

Causes – modern period

Changed

Stayed the same

Key Qu- 2

How effective were methods to prevent illness and disease over time?

You need to know about:

Prevention of Black death
14th Century Alchemy, soothsayers and medieval doctors (p13 – 14)

Application of science to the prevention of disease late 18th century and early 19th centuries (p14 – 15)

Work of Edward Jenner and vaccination
Influence and spread of inoculation since 1800 (p16)

Discovery of antibodies and developments in bacteriology (p17 – 18)

KEY VOCAB: History

Alchemy
The belief that base metals could be turned into gold

Vaccine/ vaccination
treatment with a vaccine to produce immunity against a disease.

Smallpox
A virus that is contagious and causes fever and pustules (infected blisters

Soothsayer
People who, it was believed had the power to look into the future

Germ Theory
Germ theory states that many diseases are caused by micro-organisms within the body

Contagius
A disease which is spread by direct contact from one person to another

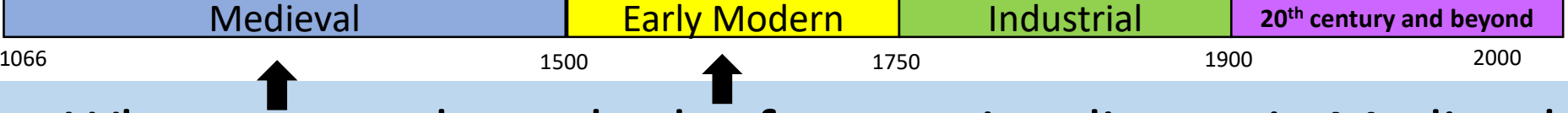
Apothecaries
People who made herbal remedies

Anti-bodies
Produced to protect the body against disease

Inoculation
The introduction by injection of an antibody into the body to protect from disease.

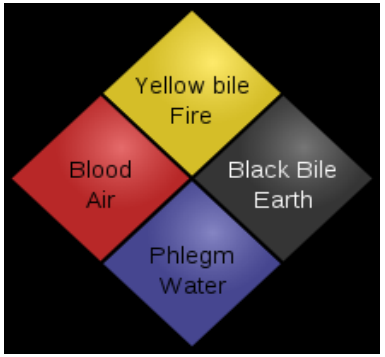
Barber Surgeons
Barbers not only cut hair but performed some surgical operations

MMR
Measles, Mumps and Rubella vaccine



What were early methods of preventing disease in Medieval and Early Modern times?

The Four Humours



Most Medieval physicians believed in the theory of the Four humours and used it prevent illness by rebalancing the body. The theory of the Four Humours was developed in Ancient Greece by Hippocrates and Galen. Lack of medical knowledge and understanding made it difficult to prevent disease.

The Church

The Church was very influential in Medieval times.

The Church believed that physical illness was caused by spiritual illness.

People believed that people became ill because they were living in an un-Christian way or people were not praying hard enough.

The Black Death was stopped according to the Church by processions through the villages and asked for God's forgiveness

Some people whipped themselves in the streets (flagellants)

Other Methods to prevent catching the Black Death

Walk about carrying flowers, herbs and spices, Avoid eating and drinking and too much sex!
Avoid bathing, Drink vinegar and / or wine

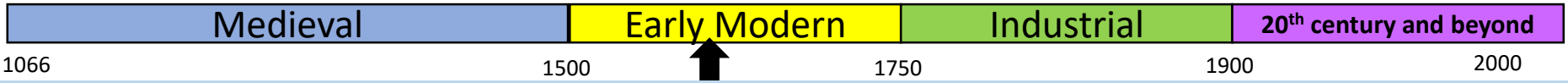
Some attempts to prevent illness and disease worked by accident eg
King Edward III ordered the streets of London to be cleaned of all the filth.

Belief in miasma as a cause led to the use of pomanders and potions Believed scented flowers or buckets of dung helped avoid bad air (miasma)

Prevention of disease or prevention of the spread of it led to the use of quarantine of travellers and the isolation of infected people during the Black death

Soothsayers were usually old women who claimed to see the future. Their methods sometimes worked by trial and error carried out over many years. They were often accused of witchcraft. There were very few 'trained' doctors and their knowledge was limited.

Most people depended on the local 'wise woman' or soothsayer who had built up knowledge of sickness and disease over several generations and each would have their own favourite methods. They would collect plants and herbs, special stones, anything that might help, and carry this about with them in a willow basket. They would make special charms to protect against evil. Mother Shipton became a famous 15th century soothsayer.



What were early methods of preventing disease in Medieval and Early Modern times?

Alchemists

- Early scientists who did experiments, mainly trying to turn base metals like lead or mercury into gold. Some alchemists aimed to find the "Elixir of Life", which was meant to keep them young forever.
- Massive step in preventing illness because if you found this, you could keep people free from disease and enable them to live forever.

The medieval alchemists were obviously unsuccessful, but they did develop new equipment and processes for carrying out experiments. These became useful in preparing herbal remedies and began the study of chemistry.

People consulted alchemists to try to keep themselves well because the doctors were even less help. There were not many doctors in medieval and early modern times, and they knew very little about preventing diseases like the Black Death because they didn't understand the causes of illness.

During the Great Plague of 1665, as during the Black Death of 1348–49, many of the same failed ideas about were used again.

However, some things did work:

•Movement of people was prevented; only those with medical passes could leave London.
•The Lord Mayor of London ordered that anyone suspected of having plague were quarantined for 40 days. Watchmen locked people in their houses, and parish officials provided food.
•All trade with London and other plague towns was stopped in order to prevent the spread of disease.
•Trade between England and Scotland was prevented.

MEDIEVAL AND EARLY MODERN PERIODS : c.500s-1700s

Medieval attempts to limit the spread of the Black Death -

- Travellers were quarantined, infected families were boarded up in their homes.
- Believed scented flowers or buckets of dung helped avoid bad air (miasma).
- Some took potions believing they would kill off the plague.
- Doctors wore hoods, with a beak stuffed with herbs or sponges soaked in vinegar.
- Flagellants whipped themselves so that God would not punish them further.
- Others disinfected their house with herbs and burned the clothes of victims.

Alchemists tried to use alchemy to make metals turn into gold, and an 'elixir of life' to make a person immortal or forever youthful. In their experiments they laid the foundation for the development of chemistry as a scientific discipline.

Physicians trained at a university medical school in Italy or Paris and used a urine chart and 'zodiac man' charts. Very few knew much about preventing disease, because they did not know about the causes of disease.

Most people depended on the local **'wise woman'** or **soothsayer** who had built up knowledge of sickness and disease over several generations and each would have their own favourite methods. They would collect plants and herbs, special stones, anything that might help, and carry this about with them in a willow basket. They would make special charms to protect against evil. Mother Shipton became a famous 15th century soothsayer.

Key Words

Quarantine - Isolation of a person who may be carrying an infectious disease.

Miasma - The 'bad air' they believed carried disease.

Flagellant - A person who whips himself as part of a religious penance.

Alchemy - A type of chemistry in the medieval era that aimed to find a way to change ordinary metals into gold and a medicine to cure any disease.

Mysticism - The belief that there is a hidden meaning to life.

Elixir - A liquid with magical power that would prolong life indefinitely.

Spotlight story– Eyam and the plague in 1665

How did Plague arrive in Eyam?

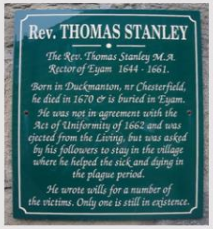
- **August 1665**
- Cloth ordered from **London**
- Tailor – Thomas Hadfield
- Assistant (**George Viccars**) unpacked the cloth which was damp.
- Dried it out in front of the fire
- Cloth was **infested with rat fleas**
- George Viccars became the first victim of **bubonic plague** in Eyam
- He died a week later
- Buried on 7th Sept 1665

Who took action?

People looked to the Church for leadership
They took steps themselves to stop the spread

Rev. William Mompesson

- Vicar (Church of England)
- Came up with the idea of the Quarantine
- Needed Thomas Stanley's help to convince villagers to take this action



Rev. Thomas Stanley

- Non-Conformist minister who had been sacked for refusing to conform to established Church.
- He was popular with villagers, therefore helped to persuade them to quarantine the village.

3 steps to combat the Plague in Eyam

1. **Cordon Sanitaire** –
   - a **Quarantine** zone. 1.5miles from the centre of the village a circular boundary was set up.
   - No one was allowed to pass in or out and signs were put up marking the boundary.
   - As the village couldn't support itself it was arranged that food would be left at the boundary stones in exchange for money which was left in vinegar which they hoped would kill the disease.

2. The Church was locked and outdoor services held in Delph Valley with Mompesson preaching from a rock called **'Cucklett Church'.** Families were encouraged to **stand in groups** and **dis** themselves from other families.

3. **Dead bodies** of plague victims were to be **buried straight away near their homes** and not in the graveyard. No traditional customs were allowed. They hoped that this would eliminate the disease spreading from corpses awaiting burial.

Short - Term effect

- By end of October 29 1665 29 deaths. This was more deaths in two months than in the previous ten years
- Villagers panicked - 50 individuals left, mostly rich people.
- Fewer deaths through winter months as rat population dropped.
- Increase in number of deaths for April 1666 onwards. Sharp rise through Summer
- Fell again in October. Last single death in November
- Total number of deaths 260 out of a population of 800
- 76 families affect, e.g: Hancock Family, Elizabeth buried her husband an6 children in the space of 8 days. 9 members of the Thorpe family all died in the same house

Long - Term effect

- Population fell sharply immediately after 1666.By 1700 the population figure was still well below what it had been in 1665.
- Ratio of plague deaths to other deaths higher than London
- Farms left uncultivated.
- Key businesses left not running until people returned to the village.
- The record of baptisms show number declined due to fewer adults of childbearing age.
- There were no plague deaths outside of Eyam in Derbyshire was affected.
- Lack of skilled craftsmen in the village. It took years to fill these vacancies

Application of science to prevention of disease late 18th century (Industrial period)


Cuff-style microscopes, popular in the mid-1700s, were the first to provide ease of use and accurate focusing mechanisms.

In the 1600's many people were influenced by the Ancient Greek's and Roman beliefs in fresh air, diet and exercise as a way of preventing illness. **Walks** in the fresh air and vegetarianism became fashionable. People believed that visiting places such as Lemington spa or seaside resorts like Brighton would help to prevent the disease.

Cold water treatments in fashionable resorts became fashionable with the wealthy. These were called **Spas**. The most famous spa town was **Bath**.

Some scientific understanding was being used to prevent illness eg sailors were given lime or fruit to avoid scurvy and washing hands became more common. An important invention at this time was **the microscope**, which later allowed scientists to see tiny organisms like bacteria.

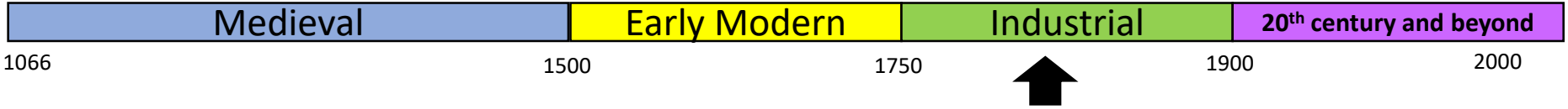
The continued use of mineral water treatments together with advancements in cleanliness and sterilisation;

John Snow and cholera

Cholera reached London in February 1832. The authorities were poorly prepared for the epidemic and doctors disagreed on what to do. This resulted in cholera riots. The 1832-33 cholera epidemic claimed 4,000 to 7,000 victims in London. In September 1853 a cholera epidemic was claiming in London and other parts of the country. It was during this epidemic that John Snow, a London doctor, succeeded in tracing the epidemic to a single water pump on Broad Street.

Snow carefully plotted a street plan of each and every cholera case around his surgery. He noticed in a nearby area, where there was a brewery, those workers didn't catch cholera because they drank beer and not the water. He used statistics to illustrate the link between the quality of water from different sources and cholera deaths. He came to the conclusion without really knowing why that the source of the local infection was the water pump in Broad Street. When he took the handle off the pump-the disease declined.

Snow did not succeed in convincing the majority of his colleagues of the causes , which cost the lives of some 12,000 people in the city.



Edward Jenner and vaccination – Industrial period

Smallpox and inoculation - Smallpox had a high death rate and no cure. *Inoculation involved spreading matter from a smallpox scab onto an open cut on a healthy person's skin, giving them a mild dose of the disease.* Inoculation became popular but it was not completely safe

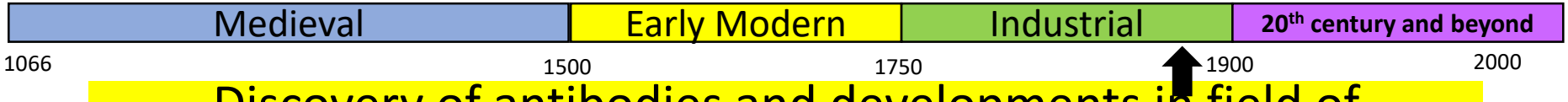
Dr Edward Jenner experimented to find out why milkmaids suffered from cowpox but never smallpox. In 1796 he injected James Phipps with the pus from the sores of a milkmaid with cowpox. Phipps developed cowpox but did not develop smallpox. Jenner had found a way of making people immune from a deadly infectious disease. He called this method vaccination (after the Latin word vacca - cow). His book on vaccination was published in 1798. The government gave him £10,000 in 1802 and £20,000 in 1807 to open and run a vaccination clinic in London.

In 1852 smallpox vaccination became compulsory in Britain for all children but many parents objected as people still believed miasma caused smallpox- Pasteur had not come up with the Germ theory yet.

Discovery of antibodies and developments in field of bacteriology 1800s (Industrial period)

Louis Pasteur

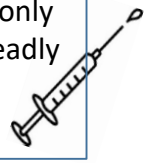
- **Louis Pasteur** was a French Scientist.
- He discovered the presence of **good and bad bacteria** in **wine** but if you **heated** it up it **got rid of the bad bacteria**. This is now how milk is made safe to drink – it is pasteurised (heated up so the bad bacteria is killed)
- He further developed the idea that bad **bacteria and germs are all around us (Germ Theory)** and were the cause of many disease and illnesses
- Pasteur then went on to **develop vaccinations** to target disease - he knew that the body could learn to fight bad bacteria. A small dose of a disease encourages the bodies immune system to fight the disease.
- He was only allowed to test vaccines on animals. Developed a vaccine against **chicken cholera**
- Developed first vaccine against **Rabies in 1880**



Discovery of antibodies and developments in field of bacteriology 1800s (Industrial period)

Robert Koch

- **Robert Koch** was German Scientist who took the work of Pasteur a step further. He discovered that **certain bacteria caused certain illness**
- In **1882 identified the bacteria which caused TB**
- In **1883/4 identified the bacteria which caused Cholera** and confirmed the findings of John Snow
- He allowed the science of **bacteriology t**o develop
- He knew that antibodies work specifically on only one bacteria was significant in preventing disease
- **He and his students subsequently isolated the causes of Diphtheria, Typhoid, Pneumonia, Tetanus, plague, Whooping cough and therefore allowing the development of vaccinations**.
- They also developed a technique to identify types of bacteria using dyes to stain them and make them easier to detect under microscopes.
- Koch realised antibodies could destroy bacteria and build immunity against the disease. Each antibody only worked one bacteria. If you could introduce a weakened form of the disease into the body when the deadly version of the disease attacked, the body would be able to resist.
- Koch won a Nobel Prize in 1905.



The Spread of Inoculation since 1800 (Industrial period and 20th century + beyond)

Diseases and childhood killers such **as diphtheria (1940), polio (from 1955), whooping cough (1956) and measles (from 1963),** have almost been eliminated through vaccination programmes.

The World Health Organization (WHO) says vaccines are available for 25 different preventable infections and has campaigns of immunisation operating across the globe. In 1979, WHO declared smallpox extinct.

By the 21st century vaccination fell as a growing reluctance to have children vaccination after the MMR (Measles, Mumps, Rubella) vaccine scandal in the 1990s when Dr Andrew Wakefield wrongly claimed the vaccine caused autism in children. Around the world the Anti-Vax movement has spread over social media trying to persuade people that vaccination is wrong or too dangerous.

Government attempts to improve public health and welfare in the 21st century [KQ6 for more details]

In the 21st century, governments and agencies have put more and more effort into health education to persuade people to live healthier lifestyles eg. **cutting down cancer rates, persuading people to stop smoking, reducing heart disease by encouraging people to get more exercise or reducing obesity and diabetes by encouraging people to at more healthily**.

Year	Infant Mortality Rate
1800	150 per 1000
1900	170 per 1000
1950	20 per 1000
2000	4 per 1000

Revision sheet

List 3 ways that people believed would prevent illness/disease in the Medieval Period.

1.

2.

3.

List 3 ways that people believed discovered could prevent illness/disease in the Industrialisation period in the 1800s

1.

2
.
3.

List 3 ways that people believed discovered could prevent illness/disease in the 20th Century

1.

2.

3.

What has changed & continued?

Define

Inoculation –

Vaccine/Vaccination –

Germ Theory –

Contagious –

Who were..

1. Apothecaries –

2. Barber Surgeons –

3. Alchemists -

What connects John Snow and the Broad Street Pump in London?

Revision sheet.

What did Louis Pasteur discover in wine which led him to develop germ theory?

How did he get rid of bad bacteria in wine?

How is this linked to milk?

What else did Pasteur achieve?

Describe the link between Jenner and smallpox.

List 3 reasons why the study into bacteriology was important for the prevention of illness and disease.

1.

2.

3.

What was Koch famous for?

What other 3 key vaccinations have been introduced since WWII?

What links Pasteur, Snow, Koch and Jenner?

Outline the MMR debate.

Key Qu- 3

How effective were attempts to treat and cure disease over time?

You need to know about:

Treatments and remedies in medieval era
Herbal medicines, barber surgeons, use of leeches (p23-24)
James Simpson- anaesthetics (p26)
James Lister- antiseptics (p27)
20th century developments- Marie Curie and radiation, roles of Fleming, Florey and Chain regarding antibiotics (p28)
Barnard and transplant surgery (p29)
Cancer treatment (p29)
Alternative treatments(p30)

KEY VOCAB: History

Herbal Medicines
Medicines based on herbs and plants

Antiseptic /Aseptic
A method of reducing infection during operations. Aseptic is a bacteria free environment

Leeches
A type of worm which is water based, and used to suck blood from the body

Bleeding
The process of taking blood from a person to balance the 4 humours

Germ theory
Germ theory states that many diseases are caused by micro-organisms within the body

Apothecary
a person who prepared and sold medicines and drugs in medieval times

Zodiac Chart
Charts based on the astrological symbols . These were used to decide on treatment

Antibiotics
a medicine such as penicillin that stops the growth of or destroys microorganisms

Anaesthetic
A method of reducing pain during operations

Barber Surgeons
Barbers not only cut hair but performed some surgical operations

Alternative Medicine
healing or treating not included in traditional medicine

Medieval | Early Modern | Industrial | 20th century and beyond

1066 1500 1750 1900 2000

Different types of treatments in Medieval Times

If the cause of illness was God, then logically God could also cure the illness. People could treat illness by:

- Prayers and spells
- Paying for mass to be said
- Fasting (going without food)
- Pilgrimages (journeys to religious places)
- Charms and amulets

Urine Chart. In Medieval times the physician would compare the colour of the patients urine against a chart. How is this similar to today?

Zodiac Charts would tell the physician which parts of the body were linked to which parts of the astrological signs. It would indicate how was best to treat an Aries or Aquarius patient, when was the best time to treat them and when was a good time in the astrological cycle to pick and mix herbs.

Barber Surgeons

The least qualified medical professionals. They had sharp knives and a steady hand so could perform small surgeries such as extracting teeth and bleeding.

They would advertise their services by putting a bowl of blood in the shop window until 1309, after that they displayed a sign of a bandaged, bloody arm.

Some were highly trained, in Europe some doctors were surgically trained alongside medicine. They learned from practical experience instead of books.

The Four Humours- Purging

It was believed that the humours were created from the foods eaten, a common treatment was therefore to remove any leftover food. This was done by giving the patients an emetic (to make them vomit) or a laxative to clear out anything left in the body. These were usually strong and bitter herbs, often they contained poisons such as hellebore. Laxatives were very common and included things like mallow leaves and linseed.

If more help was required an enema was given – a mixture of herbs and oils were squirted into a patient's anus using a greased pipe fixed to a pig's bladder.

Four Humours - Bleeding

Phlebotomy (bloodletting) was the most common treatment, bad humours could be removed by removing some of the blood. It was usually carried out by Barber Surgeons or Wise Women. It could be done in different ways

- Cutting a vein: a vein was cut open with a sharp instrument. Phlebotomy charts were used to show points in the body were bleeding was recommended for specific illness
- Leeches were collected for those were traditional bleeding was too dangerous
- Cupping: the skin was pierced until it bled, a heated cup was then placed over the cut to draw out the blood.

Herbal ingredients

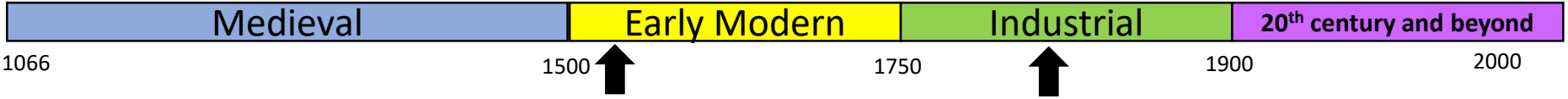
- honey and a mixture of plants.
- Books called 'herbals' recorded 'recipes' with ingredients, quantities and prayers sometimes these were kept as family secrets.
- Books like the Leech Book of Bald, a 10th century Anglo-Saxon physician provided remedies which worked e.g. lavender for headaches.

Common ingredients included mint, camomile, almonds, saffron, absinthe and turpentine. Some of these were expensive and difficult to find



Use of Leeches

It was believed in Medieval times that leeches only removed 'impure' blood from the body, leaving 'good' blood behind. The use of leeches continued well into the medieval period and as late as the 1800s. They are still used in modern alternative medicine



How effective were treatments in Medieval times?

Not effective

1) People accepted disease and poor health as part of everyday life and medicines and treatment and cures were basic and largely ineffective

2) Unlicensed traders or "quacks" travelled the country dispensing spurious cures;

3) Villages and towns were filthy, knowledge of hygiene non-existent and disease could become rampant as happened with the Black Death

4) People in medieval times did not understand the causes of illness and disease which made it difficult to develop effective treatments and cures

5) The work of physicians was based on poor knowledge of human anatomy and illness caused by **bad smells** would be cured by making the smell go away and illness caused by bad luck would need prayer and superstition

Partial success (mainly down to luck whether it worked)

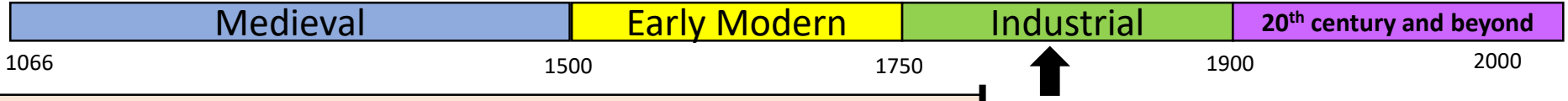
1) While most of the treatments were ineffective the **use of herbal medicines** containing natural ingredients sometimes helped recovery and the **use of leeches** helped in anaesthetising wounds.

2) Belief that the **four humours** would treat the imbalance by bleeding, sweating and vomiting and the examination of urine was used in diagnosing treatment and cure

3) **Barber surgeons** would carry out bloodletting and minor surgery and produce herbal remedies with varying degrees of effectiveness

EARLY MODERN Treatments. Everything from Medieval plus..

Different types of treatments in the Early Modern Period (1500 – 1750)	**Folk Remedies and magic**. Treatment for Malaria from The New London Dispensary: 'take the hair and nails of the patient, cut them small and either give them to birds in a roasted egg or put them in a hole in an oak tree or a plane tree. Stop up the hole with a peg of the same tree' (measures of desperate people.
Herbals. As a result of the printing press during the Early Modern period people could have a copy of Nicholas Culpepper's Complete Herbal which recommended simple herbal treatments (1652).	**The touch of the king**. People believed that the king was God's representative on earth, therefore if they were to receive a 'touch from the king' they would be cured. Between 1660 and 1692 92,000 people visited the court of King Charles II seeking healing.
'Ladies of the manor'- ladies began compiling recipe books of cures eg Lady Johanna St John **Quinine**. In the Renaissance period the bark of the cinchona tree was imported from South America because it treated fevers effectively. It became known as quinine and was used to treat malaria.	**Some physicians began writing in English rather than Latin to help more people.** **Herbs were continued to be used alongside astronomy.** **New ingredients- rhubarb was hailed as 'wonder drug'. Tobacco from N.America.**
Blood Transfusions. In 1665 Richard Lower made his first experimental blood transfusion by transfusing blood from a dog to a dog; later from sheep to a man.	**Blood Transfusions.** In 1665 Richard Lower made his first experimental blood transfusion by transfusing blood from a dog to a dog; later from sheep to a man.



Joseph Lister and use of Antiseptics in later 19th century

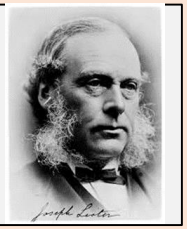
Joseph Lister, Professor of Surgery at several universities, believed Pasteur's 'germ theory' and began experiments to prevent patients from dying from blood poisoning after an operation.

- used **carbolic acid** to wash his hands and all his instruments before an operation,
- to **soak bandages** before applying them to wounds,
- to **soak silk threads** in it before tying up wounds. He reduced the infection rate from 46% to 15% in 3 years.

He invented a spray machine in 1871 so that carbolic acid could be sprayed over a patient's wound during an operation. He published his findings in 1867. Lister's methods marked a turning point in surgery. The discovery of the bacteria that caused septicaemia (blood poisoning) in 1878 helped the acceptance of Lister's ideas.

These included:

- **Thorough cleaning of hospitals and theatres**
- **steam-sterilization of all instruments**
- **use of sterilized rubber gloves.**



This led to creating a sterile operating environment – known as Aseptic Surgery

Aseptic sterile operating environment- Developed from the work of Robert Koch who discovered in 1878 that most disease was not spread by air but by infected surfaces. In 1881 Charles Chamberland invented a steam steriliser for medical instruments, which heated them to 140c for 20 mins and therefore completely sterilised them.
From the 1890s operating theatres were rigorously cleaned and this continues to be a key focus to reduce risks of infection and death. This made surgery much safer.

Protective clothing
American William Halsted started his team wearing surgical gloves and his idea was taken up by Berkeley Moyniham in Britain. Most surgeons did not take up these methods at first, but it is now standard practice.

Anaesthetics from Industrial times

Ether In 1846 Robert Liston used Ether as an anaesthetic when he amputated a leg. (interestingly, he amputated a man's leg in 2.5 minutes but accidentally cut off his testicles as well)Ether was being used by dentists in America.

- Wasn't fully effective- patients sometimes woke up during the operation.
- caused severe irritation to the eyes and lungs.

Nitrous Oxide (Laughing Gas) 1799 Sir Humphrey Davy was the first to use this in . He tried it on his friends getting them to inhale the gas from oiled silk bags. It was used during operations but it was difficult to control the dose and some surgeons had higher death rates when using anaesthetics.

Anaesthetics. 1930s
Helmut Wesse developed anaesthetics that could be injected into the bloodstream. This allows an accurate dose to be given.
Anaesthetics have continued to be refined and operations can be done under local anaesthetics.

Anaesthetic – Cocaine was used as a painkiller first in the 1850s when coco leaves were brought form South America. Initially, given as drops in the eye; later (1891) it was produced chemically after which use of cocaine as pain relief in operations became common practice.

Anaesthetic – Chloroform was first used in 1847 by **James Simpson** to reduce pain in childbirth. It has be to inhaled carefully as it causes dizziness, sleepiness and unconsciousness. There was widespread opposition to using chloroform until Queen Victorian used in 1853 whilst giving birth. In 1870s some surgeons stopped using chloroform due to increasing death rates. In 1848, John Snow devised an inhaler which helped control the dosage of chloroform.

Medieval | Early Modern | Industrial | 20th century and beyond

1066 — 1500 — 1750 — 1900 — 2000

Marie Curie and the development of radiation in 20th century

- **Marie Curie** and her husband Pierre were the first to discover and isolate **Radium** and **Polonium.**
- Radioactive elements play a key role in destroying tissue - this **breakthrough** has led to the **treatment** of some types of **Cancer**.
- She was a pioneer in **Radiography**
- By October 1914 she had developed 20 **portable X-Ray machine** to be used at the front line of fighting in **WWI**.
- By 1916 most casualty hospitals on the Western Front had X-Ray equipment. Made diagnosis and treatment much quicker.
- Became standard equipment in hospitals in 20th Century. Used to investigate problems especially with bones and teeth.
- Marie Curie was awarded two Nobel Prizes in 1903 and 1911
- She died in 1934 of Leukaemia - a result of too much exposure to radiation.

Modern advances in cancer treatment following the work of Curie

- Radiation therapy has been used to treat cancer in 20th century.
- This has been supplemented by chemotherapy- powerful drugs to kill cancerous cells. This has become more widespread since WW2.
- Encouraging results from radiation and chemotherapy.
- Cancer is still a major killer but more and more types of cancer are being cured or controlled by these treatments.
- Surgery also used to remove cancerous cells. Mastectomy (removal of woman's breast) or lung transplants are most common forms of surgery. With different scanning techniques it is easier to diagnose and treat.

Roles of Fleming, Florey and Chain in antibiotics in 20th century


Sir Alexander Fleming


Ernst Boris Chain


Sir Howard Walter Florey

How was penicillin developed?

War – the need to fight infection.

Chance – that penicillin came in through the window.

Individual Genius – Fleming, Florey and Chain were awarded the Nobel Prize in 1945.

Government – Gave money to fund research.

28

Alexander Fleming

The discovery of penicillin is a good example of a chance finding helping science.

Alexander Fleming was searching for a cure for infections.

In 1928 he went to clean up some culture dishes which had bacteria growing in them.

He noticed that not one the infectious bacteria grew near the penicillin.

He had found the first antibiotic.

Fleming was unable to take his work Further as he did not have enough money or government support.

Florey and Chain

- Florey and Chain, scientists from Oxford University, experimented on penicillin and developed a method to produce and test it.
- In February 1941, they tried it on a human patient. Although the patient's health improved, there wasn't enough penicillin to cure him, and he eventually died.
- This trial, however, demonstrated penicillin's potential if produced in large quantities.
- After America joined the war in December 1941, the American government invested $80 million to mass-produce penicillin.
- By 1943, it was used to treat wounded British soldiers, and by June 1944, there was enough penicillin to treat all casualties from D-Day.

Antibiotics. After 1948 the government funded NHS provided antibiotics free. By the 1950s and 60s Penicillin was commonly used to treat infections such as bronchitis, syphilis, meningitis, pneumonia etc.

Fleming, Florey and Chain received the **Nobel Prize for Medicine** in 1945. Other antibiotics developed included **tetracycline** in 1945 and **mitomycin** in 1956

Medieval	Early Modern	Industrial	20th century and beyond
1066	1500	1750	1900 2000

Different types of treatments in the 20th Century

Blood Transfusions. 1901
Karl Landsteiner discovered blood groups which meant transfusions could happen with patients who had the same blood group. Storing blood was still an issue until it was discovered that if sodium citrate was added to blood to prevent clotting during WWI and further developments by British surgeon Geoffrey Keynes led to first blood depot created before battle of Cambrai in France in 1917.

Keyhole and micro-surgery. Modern treatments allowing surgeons to cut into the body through a small hole and use tools inside an **endoscope** which is controlled by the surgeon using miniature cameras, fibre optic cables and computers.

Magic Bullets. In the 1930s Sulphonamide was the chemical in both Salvarsan 606 and Prontosil. It was an important scientific development and subsequently mass produced to treat patients suffering from pneumonia and scarlet fever.

Radiation Therapy.
Following on from the work done by Marie Curie, radiation therapy has been used throughout the 20th century to treat cancerous cells. As technology has developed it has become more refined and easier to target the diseased cells. This led to development of **Chemotherapy**

Scans. After 1945 the use of sound to see inside the body was developed – **Ultrasound.** Since 1970s this was used in baby scans. **MRI** scanning has been used in treatments since 1980s. **PET** and **CT** scanning are further developed methods.

Dialysis machines.
Crucial modern treatment for kidney patients – these machines keep patients alive by dialysing their blood until a kidney becomes available for transplant.

Transplants.
1954 – kidney transplant. 1963 liver transplant.
1967 the first heart transplant was carried out in South Africa by **Dr Christiaan Barnard.**
1980 first bone marrow transplant.
1982 first heart and lung transplant.
All a result of technical and scientific expertise.

*Transplant surgery - In December 1967, Christiaan Barnard performed the world's first human heart transplant on Louis Washkansky. He survived the operation but lived for only 18 days, dying of pneumonia. Barnard performed ten heart transplants between 1967 and 1973, but rejection of the transplanted organ remained a problem. Immunosuppressive drugs solved transplant rejection.

Gene therapy. Modern treatment for diseases caused by a single abnormal gene such as cystic fibrosis and Huntington's disease – Gene therapy takes normal genes from a donor and puts them into the DNA of someone suffering from these types of illnesses

Alternative treatments in the 20th Century

- **Homeopathy** – A system of treating people using alternative methods – especially using natural substances rather than chemical ones. Not everyone agrees- British Medical association describe homeopathy as 'witchcraft'.

- **Acupuncture** - A traditional Chinese method of sticking needles into various parts of the body to tap into the natural flows of energy around the body.

Aromatherapy
Aromatherapy is the practice of using essential oils for therapeutic benefit. Typically used via inhalation.

Hydrotherapy
Involves use of water for pain relief and treatment

Hypnotherapy
is a therapeutic practice that uses guided hypnosis to help a client reach a trance-like state of focus, concentration, diminished peripheral awareness, and heightened suggestibility.

Health food shops
Wide range of herbal remedies available to buy

Medieval | Early Modern | Industrial | 20th century and beyond

1066 1500 1750 1900 2000

Spotlight story- WW1

Vaccination

Typhus and **Tetanus** caused 32 out of every 1000 deaths in the first year of war

From **1915** all soldiers were routinely **vaccinated against Typhus and Tetanus.** Death rate from Tetanus dropped to 2 of every 1000 deaths.

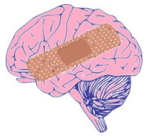
Amputation and artificial limbs

Limbs were **amputated** to stop the spread of **gangrene**

Period of development in artificial limbs and joints to help with mobility.

Brain surgery

Head and brain injuries were common



Developments in blood transfusions and X rays allowed for developments in brain surgery and dealing with head injuries.

Harvey Cushing, American surgeon invented a magnet which could be used to extract bullets from head wounds.

Plastic surgery

Shell and Shrapnel wounds especially to the face.

By the end of 1915 7 French hospitals had departments dealing with plastic surgery

British army surgeon **Harold Gillies** pioneered work in England.

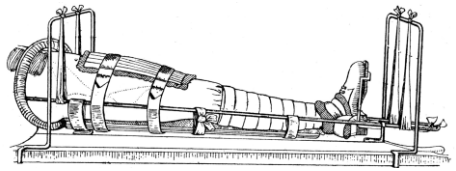
New techniques – rebuild noses with bits of bone from ribs. Skin grafts was a major development.

The Thomas Splint

Leg wounds were the most commonly recorded area of injury. Up to 1915 only 20% of soldiers who had their thigh bone (femur) broken by gunfire survived. The Thomas Splint, invented by Hugh Thomas and used from 1916, dramatically reduced these deaths.

The splint stretched the leg to stop the ends of the broken bone grinding against one another and reduced blood loss. It also kept the bone still, preventing further damage.

Frontline medics were trained to use the splint and deaths reduced to less than 20% of those injured in this way.

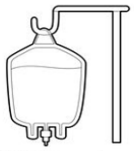


Mobile X-rays

X-rays were discovered in 1895 by a German scientist, Wilhelm Röntgen. He found that certain wavelengths of light could pass through wood, rubber and human tissue but could not pass through bone and metal. Röntgen's discovery was immediately popular and within six months X-ray machines had been installed in major hospitals. The First World War, however, showed how useful X-rays could be in improving surgery. The machines were installed in hospitals across the Western Front and were vital in helping surgeons locate the metal fragments that came from shells and bullets. Removing these particles meant that infections in deep tissues could be prevented.

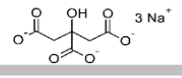
By 1916, The British army had 528 X-ray machine on the Western Front, including 14 mobile units that could be despatched quickly to areas with high casualties.

Blood Transfusions



In 1901, scientists discovered that there were different blood groups and blood could then be safely transferred directly from one person to another. if they had the same blood group. Using on-the-spot donors, however was not practical at the battlefield and blood could not be stored as it clotted shortly after leaving the body.

The First World War forced scientists to look for a solution. They discovered that the liquid part of the blood (plasma) could be separated form the tiny particles in the blood (corpuscles). The cells could be bottled, stored in ice until needed. They then needed to dilute the cells with warm saline solution and the blood could then be used. This meant that many soldiers could receive blood transfusions quickly and this saved many lives. Blood banks were used for the first time at Cambrai in 1917.



Antiseptics

On the Western Front it was difficult to carry out surgery in aseptic conditions. Infection was often carried deep into wounds by shrapnel and machine gun fire.

Doctors experimented with different techniques and found antiseptics, such as Carrel-Dakin Solution and saline, that could be used to flush or 'irrigate' wounds. . They used carbolic acid and hydrogen peroxide to kill bacteria in wounds.

They learned to not sew up wounds straight away so that they could use antiseptics.

Revision sheet

Key Words

Antiseptics –

Anaesthetics –

Aseptics –

Antibiotics -

Early Modern Treatments

What was Quinine used for?

List four ways people treated illness in this period.

•
•
•
•

Who operated on people and what were operating conditions like at this time?

What types of anaesthetic were used in this period?

Medieval Treatments

What was a ‘Zodiac Chart’?

In Medieval times cuts and wounds were treated with which two
items?

List four ways people treated illness in this period.

•
•
•
•

Who performed surgical operations on people and what were operating conditions like at this time?

What types of anaesthetic were used in Medieval times?

Revision sheet

19th Century Industrial Period Treatments

Ether was used as an anaesthetic by Robert Liston in 1846 but what was the problem with it?

What did **James Simpson** use as an effective anaesthetic?

Describe what **Joseph Lister** did which was quiet revolutionary in this period.

What was produced chemically after 1891 and used as an anaesthetic?(clue its origins are found in coco leaves)

20th Century –Treatments

Who, in 1901, made the discovery about blood groups which made blood transfusions possible?

What did Marie and Pierre Curies discover? What did this lead to?

Who discovered Penicillin?

Who was responsible for developing the manufacture of penicillin?

When penicillin provided as free treatment by the NHS?

20th Century –Treatments continued…

What does the phrase 'magic bullets' mean?

Explain the significance of Magic Bullets.

Who performed the first heart transplant and when?.

List the different types of scanning techniques and their uses

-
-
-
-

What is gene therapy?

How is modern day surgery different from 1500?

Describe 'alternative' treatments

Key Qu- 4

How much progress has been made in medical knowledge over time?

You need to know about:

Influence of alchemy, astrology and theory of four humours (p34-35)
Influence of Vesalius, Pare and Harvey in 16th and 17th centuries (p36)
19th century advances in medical knowledge (p37)
Improved knowledge of germ theory Pasteur and Koch (p38-39)
Development of scanning techniques X-rays, ultrasound and MRI scans (p40)
Discovery of DNA and genetic research in 20th century (p41)

KEY VOCAB: History

4 Humours
too much or too little of any of four bodily fluids in a person—known as humours—directly influences their health

Scanners
machine that examines the body through by using radiation, ultrasound, or imaging, as an aid to identifying diseases..

X - Rays
A photographic image of the body used to detect broken bones, disease and illness.

Indulgences
A payment to the catholic church for the forgiveness of sins

DNA
genetic material in all life forms which creates the distinctive characteristics of someone or something.

'Magic Bullets'
A type of anti-biotic which targets a specific disease

Cauterisation
a medical technique of burning a part of a body to remove or close off a part of it.

PET Scan
Positron emission tomography (PET) scans are used to produce detailed three-dimensional images of body

Ultrasound
A type of medical imaging which uses sound waves to penetrate the body

Ligatures
used for tying or binding part of the body tightly to cut off the blood supply during surgery

CT/CAT Scan
Uses computers and rotating X-ray machines to create cross-sectional images of the body

Medieval | Early Modern | Industrial | 20th century and beyond

1066 1500 1750 1900 2000

Medieval knowledge- The influence of Alchemy and Astrology, theory of Four Humours

Hippocrates, Galen and the 4 humours

- Hippocrates (born BCE460) 'father of modern medicine' with over 60 surviving documents on the topic
- Galen (born CE130) he built on Hippocrates' ideas but also believed in dissection (of animals) to learn about the human body
- Galen looked after gladiators, so had a good knowledge of anatomy, promoted using patient's pulse as a diagnostic tool (still used today)
- Galen's work survived due to Islamic medicine, the Catholic church promoted his ideas because he referred to everyone having a soul
- Both promoted the idea of the body as a mini-universe, having 4 elements (water, earth, wind and fire) but these were renamed and called **humours**
- Proportion of each humour different in everyone and changed as they aged. Everyone's health depended on keeping these in the correct balance
- The doctor's skill was in working out these proportions and rebalancing them when ill. This was done through diet, exercise and bleeding/purging.
- Hippocrates and Galen's ideas reined unchallenged until the Early Modern period and to some extent up to mid-C19th.

Blood	Diseases of the blood would include: Heart disease, angina, nosebleeds, anaemia, diabetes, skin disorders and acne.
Black Bile	Diseases of the black bile would include: Constipation, shaking and tics, stomach ulcers, will not eat.
Yellow Bile	Diseases of the yellow bile would include: jaundice, gall stones, migraines, joint pain and swellings (arthritis)
Phlegm	Diseases of the Phlegm would include: coughs, colds and asthma, bronchitis and diseases of the lungs.

Influence of alchemy and astronomy

- Alchemists were usually monks/priests and were best educated in medieval society
- Along side their study for turning lead into gold, many also sought to make the elixir of life-an end to death
- Alchemists had big impact on medical and scientific world-inventing new chemicals (nitric acid) and discovering new elements (antimony/arsenic)
- Medieval doctors believed in the influence of the stars on people's personality and health
- In 1500's doctors were required to study astronomy as part of their training.
- Doctors believed every part of the body was linked to a star sign, so medicines were thought to be at their best when the herbs were collected and administered at the right phase of the moon
- Many historians now believe that doctors sought to make medicine more complicated to stop unqualified 'quacks' from copying them and keep them at the top of the medical ladder.

Role of the Catholic church in developing medical knowledge

- The church reigned supreme in medieval society-so their opinion on medical progress and developments was crucial
- Most believed that sin could cause illness and many prayed or went on pilgrimages to seek forgiveness but the rich could buy forgiveness through indulgences
- The church helped to establish places of learning for physicians based on Hippocrates and Galen's principles.
- Many of Hippocrates and Galen's works survived thanks to Islamic translations which were then retranslated by monks in the medieval period
- The church supported Galen's (incorrect) teachings on anatomy/ dissection because he promoted the idea of a soul.
- The church discouraged anyone who challenged Galen which limited medical progress in the medieval era. Examples include the monk Roger Bacon, who was arrested in C13th for promoting scientific methods and observation.

Medieval | Early Modern | Industrial | 20th century and beyond

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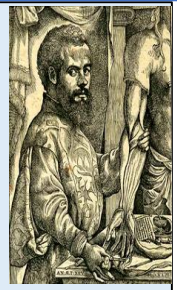
The Early Modern Period – breakthroughs!

Vesalius and Anatomy

Pare and Surgery

Harvey and blood circulation

Why were Vesalius, Pare and Harvey important in medicine ? What impact did their discoveries have?



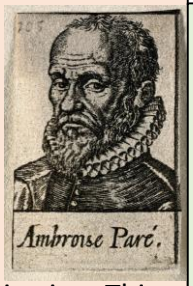
Vesalius was born in 1514 and studied medicine in Paris and Italy. He was allowed to perform dissections but couldn't look closely at the skeleton. He was so dedicated he stole the body of criminals

He became professor of surgery at Padua in Italy where he performed more dissections. He wrote books on his observations including *The Fabric of the Human Body* in 1543.

His illustrations were carefully labelled and he used his powers of observation to point out some of Galen's mistakes.

Galen thought that blood passed through the septum of the heart through little holes. Vesalius proved there were no holes in the Septum.

Galen believed that human jaw bones were made of two pieces. Vesalius proved it was one. It proved Galen could be wrong!



Pare was a barber surgeon born in 1510. He became an army surgeon.

At the time the wound left by amputation was sealed by burning the end with a red hot iron, known as cauterisation. This was very painful.

Pare invented the method of tying off vessels with thread, known as ligatures. This was less painful, but may have caused infection as they did not yet know about germs.

Gunshot wounds were, at the time, treated by pouring boiling oil into the wound. During one battle, Pare ran out of oil and resorted to an ointment of his own.

To his surprise, these patients recovered better than the ones scalded with oil. Other doctors opposed to his ideas. However, when he became surgeon to the King of France and gained the King's support, people started listening to his ideas.

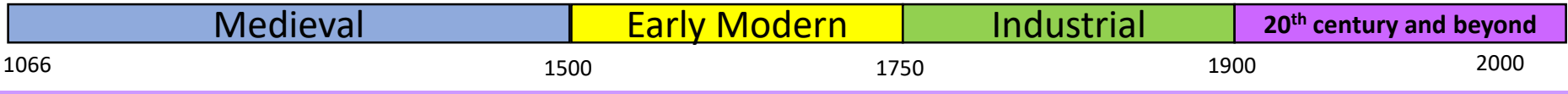
William Harvey's most famous work, **On the Motion of the Heart**, was published in 1628. More than any other work at the time challenged the work of Galen.

Whilst studying, Harvey had been taught that the veins in the human body had valves, and blood pumped just one way, but no one knew how or why. Later in his life, Harvey experimented on frogs and lizards.

His most famous experiment, showed convincingly that the heart worked as a pump, and that blood flowed in a one way system around the human body.

He was also able to show the Galen's theory that the liver was the centre of the human body, and created new blood was wrong.

Harvey also challenged the idea of 'Bleeding' as a cure, as he showed it was impossible to have too much blood! Those who supported Galen completely rejected Harvey's work.



In Summary: How much had changed in medical discoveries between Medieval and Early Modern period?

Changed

1. The discoveries made by Harvey and Vesalius were important as they proved to doctors that Galen was wrong and that careful dissection and experimentation were the way to new ideas about how the body worked.

2. Pare's use of bandaging wounds and using ointment instead of boiling oil helped patients survive as other surgeons could see it working. However his use of ligatures slowed down surgery, causing problems with bleeding, and also helped spread infection as these were not sterilised.

3. In 1492, America was discovered. This brought a wide range of new knowledge to Europe including many new herbal treatments. Trade and communication helped here.

4. The development of the printing press led to medical ideas being spread far and wide

5. Books from 'Ladies of the Manor' helped to contribute to new ideas

Stayed the same

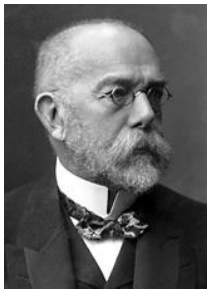
- The discoveries of Harvey and Vesalius did not make anyone healthier at the time.
- Life expectancy did not increase much.
- They hadn't discovered new and better ways of treating illnesses.
- Treatments: Herbal remedies were still widely used.
- Surgery only improved a little.
- Treatments from the Four Humours were still widely used; this had not yet been disproved.
- Superstitious treatments were still widely used, including charms and the famous 'King's Evil', this included the king touching someone with the skin-disease, Scrofula, in order to cure them.
- Trained doctors and surgeons could still treat those who could pay. The poor had to rely on family, wise women and travelling quacks.

Nineteenth century medical knowledge advances: improved knowledge of germ theory: Pasteur and Koch

18th century science involved detailed observation, helped by the invention of the microscope after 1590. Doctors learned from dissections and used microscopes to gather further information. Medical books of previous writers were proved incorrect due to the new scientific discoveries.

Louis Pasteur

- **Louis Pasteur** was a French Scientis
- He discovered the presence of **good and bad bacteria** in **wine** but if you **heated** it up it **got rid of the bad bacteria**. This is now how milk is made safe to drink – it is pasteurised (heated up so the bad bacteria is killed)
- He further developed the idea that bad **bacteria and germs are all around us (Germ Theory)** and were the cause of many disease and illnesses
- Pasteur then went on to **develop vaccinations** to target disease - he knew that the body could learn to fight bad bacteria. A small dose of a disease encourages the bodies immune system to fight the disease.
- He was only allowed to test vaccines on animals. Developed a vaccine against **chicken cholera**
- Developed first vaccine against anthrax 1881 and **Rabies in 1885**



Robert Koch

- **Robert Koch** was German Scientist who took the work of Pasteur a step further. He discovered that **certain bacteria caused certain illness**
  In **1882 identified the bacteria which caused TB**
- In **1883/4 identified the bacteria which caused Cholera** and confirmed the findings of John Snow
- He allowed the science of **bacteriology** to develop
- He knew that antibodies work specifically on only one bacteria was significant in preventing disease
- **He and his students subsequently isolated the causes of Diphtheria, Typhoid, Pneumonia, Tetanus, plague, Whooping cough and therefore allowing the development of vaccinations**.
- They also developed a technique to identify types of bacteria using dyes to stain them and make them easier to detect under microscopes.
  He was awarded the Nobel Prize in 1905 for his work/discoveries.

Paul Ehrlich

Paul Ehrlich (Germany: 1890s a student of Koch) reasoned that, if certain dyes could stain bacteria, perhaps certain chemicals could kill them. He set up a private laboratory and a team of scientists. By 1914 they had discovered several **'magic bullets'** - compounds that would have a specific attraction to disease-causing microorganisms in the body, and that would target and kill them. The most significant was **Salvarsan 606**(for syphilis)

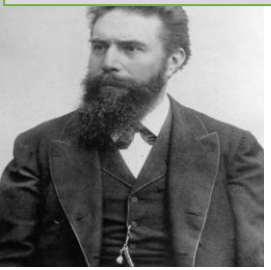
G Domagk

In 1932 scientist **Gerard Domagk** discovered a bright red dye called **Prontosil**, killed bacterial infections. One day his daughter chased her guinea pig into his lab and in doing so cut herself, developing blood poisoning. Domagk was forced to try the untested drug on his daughter – it worked!

It was the used to cut maternity deaths at a hospital in London and reduced them from 20% to less than 5%. It was discovered the Prontosil prevented the bacteria from multiplying and made it possible for the body's own immune system to kill the bacteria.

Development of scanning techniques in the 20th century

Wilhelm Röntgen - X Rays



1895 first x-ray

In 1895, Wilhelm Röntgen, Professor of Physics at the University of Würzburg in Germany, discovered X-rays.

He realised they would pass through paper, wood, rubber and human flesh but not through bone or metal. Surgeons could see inside the patient without surgery.

X-rays really became important during the First World War, enabling doctors to locate deeply lodged bullets and shrapnel inside the bodies of soldiers

Marie Curie and Radiation

- She was pioneer in **Radiography** - continuing the work of Rontgen
- By October 1914 she had developed 20 **portable X-Ray machine** to be used at the front line of fighting in **WWI**.
- By 1916 most casualty hospitals on the Western Front had X-Ray equipment.
- Standard equipment in hospitals in 20th Century. Used to investigate problems especially with bones and teeth.

Scanning

In the 20th Century**, scanning** addressed the major problem of identifying disease early. Scanning allowed doctors to look inside the body.

X-Rays used radiation to photograph bones to identify fractures.

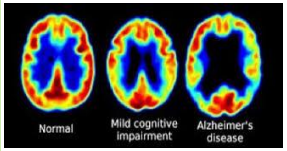
Ultrasound used sound waves to look inside the human body. It avoided the use of radiation and could create a 3D image of organs like the heart, liver and muscles. Ultrasound is used to scan unborn babies.

MRI uses radio waves to create a high quality, 3D picture of the human body.

PET and **CT scans**. PET works by injecting into the body so that it colours pats of the body doctors want to look at. CT takes many X-Rays at different angles to build up a detailed view of part of the body.

Ultrasound

MRI Scan



PET Scan

CT Scan

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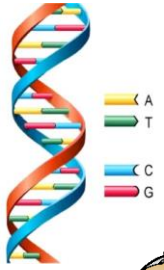
Discovery of DNA and genetic research in later 20th century



DNA

By 1900 it was clear not all diseases were caused by microbes.
In 1953 the structure of DNA was discovered by
Crick, Watson and Franklin. DNA carries genetic information about all living things from one generation to the next.
DNA explains how people and other life forms reproduce themselves.
In humans, DNA was present in every human cell, and that they pass information on from parents to children.
This was the launch pad for several controversial genetic developments.

Cloning

In 1996 DNA technology allowed for the cloning of cells (creating an exact replica of a person or animal by copying cells). The first cloned animal was Dolly the sheep.

Getting rid of genetic diseases

DNA technology allows to eradicate some genetic diseases (diseases passed down through families over several generations eg some cancers, hereditary blindness).

'Designer' babies- If not controlled some scientists have warned of the danger of parents being able through changing DNA to 'design' preferred features or gender in children, eg blue eyes, boy rather than girl etc. They highlight the danger of some DNA characteristics being seen as having less value than others.

Human Genome Project

The Human Genome Project was set up in 1990 to identify the role of each of the 100,000 genes in a human DNA molecule. It was completed in 2003 and provided the complete genetic blueprint of a human being.

As a result of the work on DNA, scientists identified that the causes of some illnesses are genetic. Genetic screening and testing has been used for preventing disease. Work continues on gene therapy, using genes from healthy people to cure the sick.

Once it was mapped then scientists could start looking for mistakes in the DNA of people suffering from hereditary diseases e.g. a gene that is sometimes present in breast cancer. Angelina Jolie has this gene and underwent a double **mastectomy** as she has an over 80% chance of developing the disease. Her risk is now less than 5%.

Three parent babies- Mitochondrial donation is an IVF technique that gives families affected by mitochondrial disease the chance of having healthy children.
It involves taking the DNA out of a woman's egg that has faulty mitochondria (the 'batteries' that give all our cells their energy), and transferring it to a donor egg with healthy mitochondria.

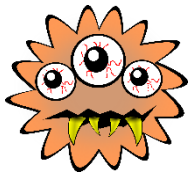
Medical knowledge improvements from Industrial period

Industrial…

Increased knowledge of inoculation vaccination, anaesthetics and antiseptics and the contribution of Simpson and Lister

Discovery of the microscope, stethoscope and the kymograph (a cylindrical drum used to record muscular motion, changes in blood pressure, and other physiological phenomena)

Identification of the link of poor health and cholera

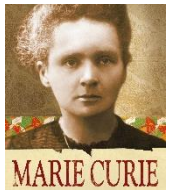


The work of Pasteur and Koch and improved knowledge of germ theory

Improvements

20th century…

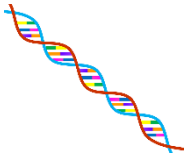
The work of Fleming, Florey and Chain and the discovery of antibiotics which altered the way that people thought of disease



Curie and the discovery of radiation

Advancements in transplant surgery;

Advances in cancer treatment and surgery; the development of scanning techniques which revolutionised the identification of illness and disease;



Discovery of DNA and advances in genetic research which furthered understanding.

KEY QUESTION 4 - How much progress has been made in medical knowledge over time?

Name	Period	What was their **Breakthrough** in medical knowledge?	To what extent was it a breakthrough 1 - 5
Hippocrates		**'Father of Modern Medicine'…Hippocratic Oath**	
Galen 			
Alchemy & Astrology	Medieval & Early Modern		
The Church	Medieval & Early Modern		
Andreas **Vesalius**	Early Modern		
Amboise **Paré**	Early Modern		
William **Harvey**	Early Modern		

KEY QUESTION 4 - How much progress has been made in medical knowledge over time?

Name	**Period**	What was their **Breakthrough** in medical knowledge?	To what extent was it a breakthrough 1 - 5
Louis **Pasteur**	Nineteenth Century (Industrial period)		
Robert **Koch**	Nineteenth Century (Industrial period)		
Paul **Ehrlich**	Nineteenth Century (Industrial period)		
X-Rays	20th Century		
Ultrasound & MRI	20th Century		
Scanning	20th Century		
DNA	20th Century		

Key Qu- 5

How has the care of patients changed over time?

You need to know about:

- Role of church and monasteries in Medieval times (p45)
- Roles of voluntary charities (p46)
- Science and endowed hospitals (p46-48)
- Florence Nightingale and the professionalisation of nursing (p49-50)
- Impact of 20th century liberal reforms (p51-53)
- Beveridge report 1944 and setting up of the NHS (p54)
- Provision of NHS after 1948 (p55)

KEY VOCAB: History

Almshouses
Houses for the poor provided by charities and churches in the medieval period

Welfare State
Idea that people don't cause their own poverty. Government has responsibility to provide systems of support and care

Endowed hospitals
Hospitals set up on land given or endowed by a rich patron

Dispensaries
An early form of chemists which dispensed medicines and herbal extracts

National Insurance
payments to help sick, unemployed, or retired people. Cost is shared between workers and companies.

Cottage hospitals
Hospitals set up in mainly rural areas with a small number of beds

Leper hospitals
Hospitals set up to treat people suffering from the very contagious, disfiguring disease called Leprosy

Beveridge Report
Report into social conditions in Britain written in 1942 by William Beveridge. It helped set up the welfare state after 1945

Self Help
The idea that individuals / families should take care of themselves and not rely on state financial support.

Royal hospitals
Hospitals set up on land given or endowed by a monarch

National Health Service
National healthcare system paid for by taxes. Provides free / low-cost healthcare to all British citizens

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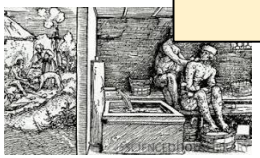
What types of hospital existed in Medieval Times?



All hospitals controlled by the church

Leper Hospitals

The earliest known example is thought to be St Mary Magdalen in Winchester, between 960 and 1030 AD. At least 320 religious houses and hospitals for the care of lepers (known as leper or 'lazar' houses) were set up in England between the end of the 11th century and 1350. The houses were usually built on the edge of towns and cities.

To survive Lepers needed to beg , trade items, and offer services such as praying in return for money. There was high demand for places in leper hospitals.

The emphasis was on cleanliness and wholesome food - clothes were washed twice a week and a varied diet was supplied if possible, often from the house's own fields and livestock. Many leper houses had their own fragrant gardens of flowers and healing herbs, and residents took part in their upkeep. Many lepers stayed in touch with their family and friends and were allowed to make visits home and receive visitors.

Almshouses

Almshouses were built to provide long-term shelter for the disabled and elderly who could not look after themselves or had no family to look after them.

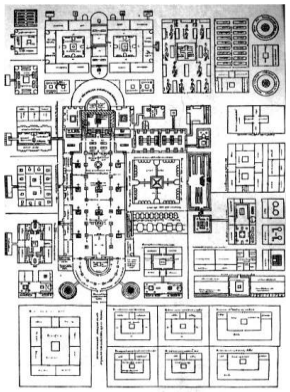
Most were very small, sometimes just a priest and upto 12 inmates. Most were eldery but some were widows, pregnant women. Basic nursing. No medical treatment.

They were founded and supported with donations from kings, the church, nobles and merchants, all keen to get to heaven by doing good works.

Some trade guilds built almshouses for their members who could no longer manage life in their own homes. Rules were strict, and prayer was expected, but the almshouses, food and surroundings were generally good, they often with gardens. There were gifts and feasts on special days.

Places were in demand as the almshouse offered an escape from the poverty and danger of life outside to travellers for a night or two.

Monastery Hospitals



St John's Hospital in Canterbury, Kent was the first hospital to take on the long-term care of people who were too ill or disabled to function in mainstream society, it gave 24-hour care to men and women 'oppressed by various kinds of infirmities'. The basic layout of larger, purpose-built monastery hospitals included a large 'infirmary hall' with rows of beds on each side housed the sick and the infirm. The chapel was in full view - the care of the soul was just as important as the care of the body.

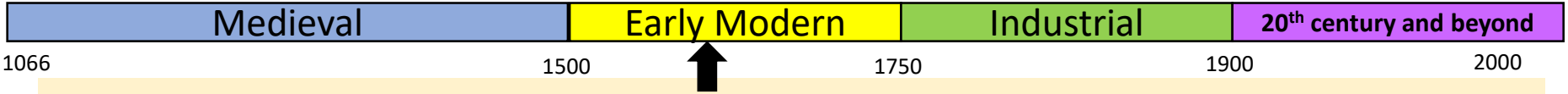
Men and women were kept separate.

In medieval religious houses, the passing poor were only expected to stay for one night. Gradually however, the rules changed and the sick were allowed to stay until they recovered, creating an early version of the hospital as we understand it today.

Christian hospitals

Set up, paid for and run by church. Looked after poor and sick.

Basic nursing, clean and quiet conditions, regular meals and warmth. Very few doctors. 'House of God'. Patients expected to pray/confess most of the day. Believed they were sick because they have sinned.



Roles of voluntary charities in the 16th century (Early Modern)

What impact did the closure of the monasteries by Henry VIII have on patient care?

In 1536, in an attempt to control the threat of the Catholic Church and gain a much need source of new income, **Henry VIII closed down monasteries** throughout England and Wales and took the profits from the land previously rented out by the church.

This had a **huge impact on patient care** because monasteries had been one of the main providers of patient care in the Medieval period. The effects included:

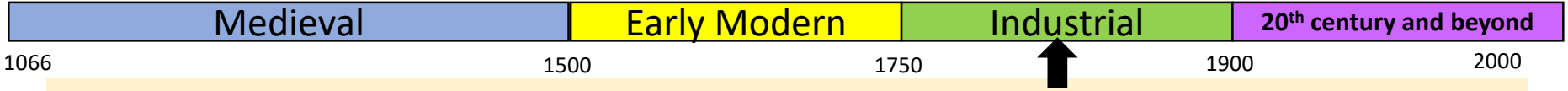
1. Many monastery hospitals were closed.
2. The role of the church in patient care was taken over by **voluntary charities and guilds**.
3. **Almshouses** were taken over by **town councils** in most towns

In London, the authorities asked for royal assistance in providing funds for hospitals helping different types of patients. These were called **'Royal (endowed) Hospitals'**

These **'Royal Hospitals'** are important because this was the first time that hospitals were created and supported which were secular, in other words, not linked to the church. They represented the first stage of hospitals. In London, 5 major hospitals were endowed with royal funds to care for the sick and poor.

Royal Hospital	When Founded	Monarch / Founder	Patients
St Bartholomew's (Bart's)	1546	Henry VIII / Corporation of London	Poor of West Smithfield London
St Mary Bethlehem (Bethlem)	1546	Henry VIII / Sir John Gresham Lord Mayor	Mentally Insane
St Thomas'	1551	Edward VI / City of London	Sick poor and those with Syphilis
Christ's	1553	Edward VI / Bishop of London	Fatherless children
Bridewell Hospital (and prison)	1553	Edward VI	Homeless children /disorderly poor

Outside of London, voluntary hospitals were created by local councils who asked for endowments to keep their hospitals open. Eg. In Norwich.



Science and the development of endowed hospitals in the 18th century (late Early Modern)

Growth in scientific enquiry- founding of the royal society in 1662 led to growth in discussing medical ideas/experiments/trials in this period. The development of scientific enquiry led to endowed hospitals becoming places to treat illnesses, administer medicines and provide surgical procedures.

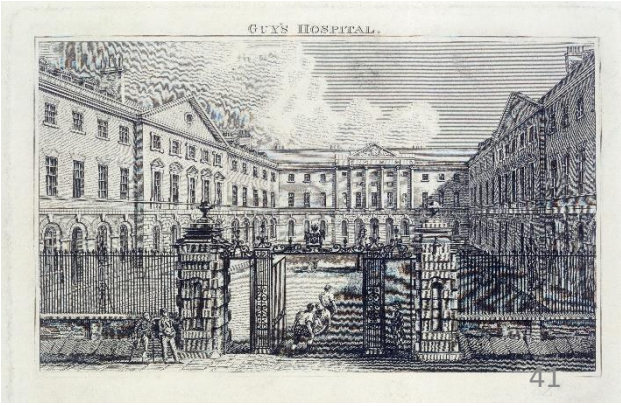
Endowed hospitals in the 18th century – Population growth during industrial revolution increased demand for hospitals. Wealthy industrialists paid for them believing that god had given them the responsibility to improve the lives of the poor and sick. e.g. Thomas Guy, a wealthy printer and bookseller who financed the establishment of Guys Hospital in 1724. During the 18th century many new endowed or voluntary hospitals were paid for by individuals, local charities or town councils.

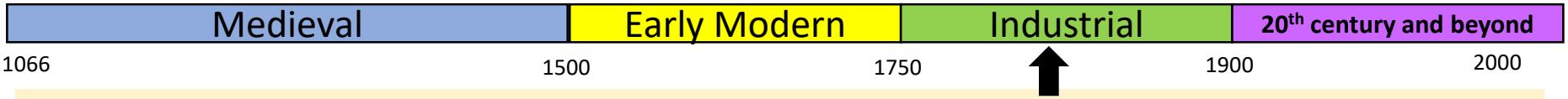
11 new hospitals were founded in London and a further 46 across the country in the growing industrial towns and cities, including Westminster Hospital in London, Addenbrooke's Hospital in Cambridge and the Royal Infirmary Hospitals in Edinburgh and Manchester. The Bluecoat Hospital in Chester opened in 1717.

How did the role and function of endowed hospitals change in the 18th Century?

The old function of hospitals was to provide basic care and comfort for the sick. For the FIRST TIME hospitals:

- became places where illness was treated
- simple surgery was carried out eg setting broken bones
- Physicians treated people with support of nursing sisters and nursing helpers
- Nursing sisters treated patients with herbal remedies
- Treatment was usually free
- Hospitals became pharmacies issued medicines – these were called **Dispensaries**





Development of specialist hospitals in the 1800s (Industrial Period)

General, cottage and specialist hospitals in the 1800s

In 1800 there were about 3,000 patients in hospitals in different parts of the country. By 1851, this figure had increased to 7,619. (the overall population of Britain in 1825 was 20 million people)

General Hospitals appeared in towns around the country where there had been little or no hospital provision before eg **Truro Royal Infirmary** was set up in 1799

Cottage Hospitals began in the 1860s in an attempt to widen access to hospitals to rural areas, they were often set up by general practitioners or GPs. Eg **Epsom Cottage Hospital was founded in 1873 with 8 beds.**

Specialist Hospitals were hospitals which specialised in a particular area of patient care **eg maternity care**, treatment of children, eyes/nose and throat

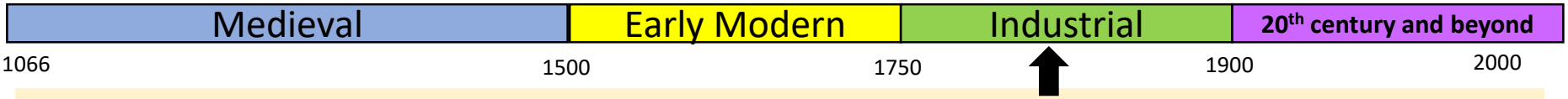
Specialist Hospital	When Founded
Royal College of Surgeons opened	1800
London Chest Hospital	1814
Royal Marsden Cancer Hospital	1851
Great Ormond Street Children's Hospital	1852
Nightingale School of Nursing	1860

Conditions in the new hospitals

- Cramped
- Stuffy wards which helped infection spread quickly
- Wards were rarely cleaned
- Quality of nursing was poor
- Untrained nurses
- Little training
- Common complaints were the wards were dirty or the nurses were drunk
- Poor sanitation, toilet facilities and sewage disposal
- Death rates from infection high

ENTER

Florence Nightingale- She went to the **Crimean War** to nurse wounded soldiers. She became known as **'The Lady with the Lamp'**.
She is remembered for showing people that nursing was a very **important** job.



Spotlight story- Florence Nightingale and the professionalism of nursing

The Crimean War broke out between Britain and Russia in 1854. It was important in changing the way injured soldiers were treated and the way nursing was viewed as a profession. It made Florence Nightingale famous. It was one of the first conflicts to be widely reported and readers at home soon got to hear about the terrible conditions for injured soldiers in military hospitals.

Florence Nightingale transformed the Crimean hospitals in six months. She insisted on good food for her patients, clean airy wards, boiled sheets and taught her team of nurses professional nursing practise.

When the army refused to pay for what she said she needed, she bought it herself. She paid 200 builders to rebuild a hospital. After her improvements she had reduced the death rate amongst her injured soldiers from 50% to 3%. She gained the nickname '**Lady with the Lamp**'.

Impact of Nightingale

1859- Published ***Notes on Nursing*** which set out the training nurses should receive.

- Nurses could only go out in pairs
- Live at the hospital
- Keep a diary of their work
- Taught to be clean, change dressings, be assistants to doctors

By 1900 **nursing schools** opened around the country & world **(USA, Japan, Australia and Africa)** – all following similar training programmes and ideas established by Florence Nightingale at St Thomas' hospital.

Hospital Conditions **before** the Crimean War

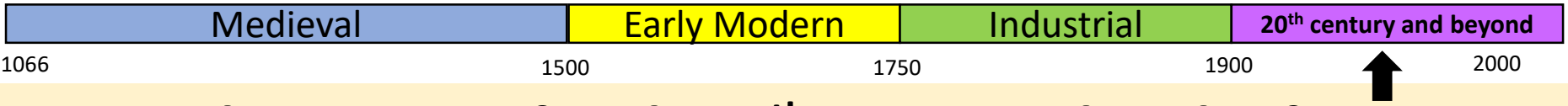
- Untrained nurses
- Lack of respect for nurses
- Cramped, stuffy wards
- Poor sanitation, toilet facilities and sewage disposal
- Lack of cleanliness
- Death rates from infection high

Hospital Conditions **after** the Crimean War

- Trained nurses
- Nursing seen as a respected job
- Spacious light and well ventilated wards
- Good sanitation, connected to main drains and piped water supplies
- Death rates down from 42/100 to 2/100
- Aseptic surgery and dressings
- Bedding regularly changed

Design of Hospitals

- **1863 Notes on Hospitals** Nightingale set out plans for what hospitals should look like – new designs
- **Nightingale Wards** developed following the **Environmental Theory –** *beds well spaced apart, good ventilation, light, warm, good drainage systems. 30 beds. Sister's room with a window looking out on to the ward. Two 'isolation' rooms close to the nursing station.*
- **'Pavilion Principle' –** 6/7 rectangular wards set a right angles off a corridor (much like today's hospitals look)
- By the end of the 19th Century (Industrial period) many towns and cities had hospitals built using Nightingale's designs.



The impact of early 20th century Liberal reforms

Before 1900, people were expected to take care of themselves with any help being mainly provided by charities. This assumed that if people were poor it was their own fault. This idea was called **Laissez Faire**. n 1906, a new Liberal government was elected. They changed the way people thought about attitudes to poverty and the reasons that people were poor. Their ideas were based on research carried out by social reformers such as Seebohm Rowntree. Using these assumptions they created laws in a wide number of areas of people's lives. This was the start of the **Welfare State.**

	Laissez - Faire	Welfare state
Date ?	Before 1900	**After 1900**
Who provides care ?	Individuals and charities	**The government**
How is care paid for ?	People must save and pay for themselves	**Care paid by taxes paid on ability to pay**
Who is to blame for poverty ?	People are responsible for their own poverty	**It is not always the fault of the poor that they are poor**
How do people avoid poverty?	Individuals and families must work hard enough to escape poverty	**It was the role of government to support the poor when they needed it most.**
How should patient care be provided?	Provided by charities or local councils	**Central Government make laws made to provide for the welfare state**
What areas of people's life should the Welfare State cover?		**Patient care, education, legal protection for children, workers rights and conditions, sickness, old age , unemployment.**

Reforms by the Liberal government from 1906-1911

Year	Act / Law Passed	Effect of the Act / Law
1906	Workman's Compensation Act	Gave **compensation** for injury at work
1906	Education (Provision of Meals) Act	Introduced **free school meals**
1907	Education Act	Set up **school medical inspections**
1907	Matrimonial Causes Act	**Maintenance payments** to be given to divorced women
1908	Children and Young Persons Act	**Illegal to sell alcohol, tobacco or fireworks to children**
1908	Old Age Pensions Act	**Over 70s received 5 shillings a week** (25p), 7 shillings and 6 pence (37p) for married couples
1909	Labour Exchanges Act	Set up **Labour Exchanges** (bit like a job centre) to help get unemployed back to work
1909	Housing and Town Planning Act	Made it **illegal to build back to back houses**
1911	National Insurance Act	**Sick and unemployment pay** introduced if contributions were paid

1911- National Insurance Act- really important! There were two parts:

Sick pay

The first part of the Act dealt with HEALTH INSURANCE. All men and women in lower-paid manual and clerical jobs earning under £160 per year had to join. In return, the worker received up to 26 weeks of sick pay at 10 shillings a week. There was also free medical care for the insured. The families of workers were not entitled to free treatment and widows did not receive pensions.

BUT

Unemployment benefit

The second part of the Act dealt with UNEMPLOYMENT. To cover this, the Act required a further contribution of 2½d per week from the worker, 2½d from the employer and 1¾d from the government. During times of unemployment, a worker would receive seven shillings per week for up to 15 weeks. It was not much money, certainly not enough to support a working man and his family.

This scheme was only open to certain trades and did NOT cover wives and children. Did NOT cover unemployed, elderly, mentally ill or chronically ill.

The impact of early 20th century Liberal reforms

Welfare and Care in the 1920s and 1930s

- ❑ After WW1 Lloyd George promised a 'land fit for heroes'
- ❑ Building programme of >200,000 new houses built by 1922 to replace slums
- ❑ 1920s extended National Insurance Scheme to include more of the workforce.
- ❑ Unemployment benefit became known as 'the Dole'
- ❑ 1930s economic depression meant health and medical insurance was cut back

Beveridge Report 1943 and provision for the NHS 1946

Origins of the National Health Service: The Beveridge Report

In 1942 William Beveridge, a civil servant, advised the government about setting up a new welfare state, including a free national health service, which was to give benefits "**from the cradle to the grave**" for all. He identified '**Five Evil Giants**' which needed to be tackled in a post war world. The plans were finally passed by the new Labour government in 1946. These acts established the 'welfare state'. A key part of this was the ***National Health Service (NHS)*** under Aneuran Bevan.

The NHS was free to everyone in the nation and would cover every aspect of health care. ***Hospitals were nationalised***, ***health centres*** were set up and doctors and services were more evenly distributed across the country. The effect of the National Health Service on people's health was dramatic.

The National Health Service after 1946 Main Aims:

- Every British citizen could have access to free medical treatment
- The first time hospitals, doctors, pharmacists, opticians and dentists came under the control of one organisation.
- All hospitals were taken under government control (Nationalisation)
- A national system of GPs was set up
- Health centres were set up – local councils and authorities given money to pay for vaccinations, maternity care, district nurses, health visitors etc
- ***For the first time ever, everyone had the right to free health care.***
- Before the NHS many could not afford to visit the doctor, let alone buy medicines or have regular treatment.

The 'Five Evil Giants' of the Beveridge Report

Battle against 'want' = National Insurance Act 1946 (women and children now included)

Battle against 'squalor' = Housing Act & New Towns Act 1946 (aid to local authorities to rebuild towns, council housing)

Battle against 'idleness' = Employment & Training Act 1948 (training for school leavers and de-mobbed soldiers)

Battle against 'ignorance' = Education Act 1944 (free education)

Battle against 'disease' = National Health Service Act 1946

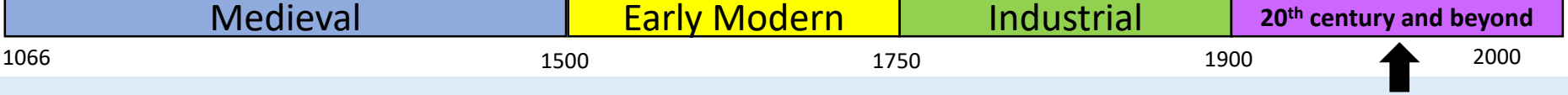
Opposition to the NHS:

The British Medical Association (BMA) said doctors did not want to be told what to do by the NHS.

Local authorities objected to the nationalisation of their hospitals.

MPs claimed it would all cost too much money and it would encourage people to expect 'something for nothing'.

However, Bevan was able to win the arguments by agreeing to let doctors take on fee-paying patients as long as they treated NHS as well. By 1948 when the NHS was officially launched 90% of doctors had enrolled.



Provision of NHS after 1948

From 28 July 1948, the NHS offered a range of services. The demand for health care under the new NHS went well beyond original predictions.

In 1947, doctors issued 7 million prescriptions per month; by 1951 the figure was 19 million per month.

By 1949, 8.5 million people had received **free dental treatment.**

Poorer people now had free access to medical treatment which previously they could no

The NHS has played an important part in prevention as well as cure; it has launched health campaigns to warn of the dangers of smoking, drinking alcohol and the lack of a healthy diet.

Services provided by the NHS - **GP services, ambulances and Accident & Emergency Departments, hospital care (tests, treatment, operations), pharmacies, mental health services, social care (children, the disabled, the elderly), dentists, opticians.**

Huge demand for **prescriptions**, glasses and dental treatment led to the introduction of charges in the 1950s.

The NHS prolongs the lives of people, but older patients are more likely to need treatment. New scanning techniques and drugs have also increased the cost of running the NHS.

Reforms and developments in the National Health Service after 1948

1951 –	a completely free NHS ended with charges introduced for prescriptions and dental treatment
1960s -	a new programme of hospital building was started building both new hospitals and replacing old ones
1979 – 90 –	Margaret Thatcher attempted to reform the NHS by cutting costs and encouraging people to take out private provision
1990s –	Hospitals could become 'Trusts' and GPs 'fund holders' this meant they could buy services from hospitals.
1998 –	NHS Direct was launched to provide 24 hour health advice over the phone
2002 –	Primary care trusts were introduced to support the administration of the health service at local level
2004 –	Foundation trusts were set up to make the NHS more accountable to its customers

Reforms since 1948 have attempted to introduce more market forces into the NHS and cut waste and inefficiency

Revision sheet 1

List 3 types of hospital in the Medieval Period and what they did.

1.

2
.
3.

Define
Alms-houses –

Dispensaries –

Leper hospitals –

Endowed hospitals –

Describe the 3 stages of hospital growth from 1500 – 1850

1.

2.

3.

Describe
1. Florence Nightingale –

2. Scutari hospital before Nightingale

3. Scutari hospital after Nightingale

Describe how patient care changed from the Medieval period to the Industrial (19th century) period

1
.
2.

3.

What has changed & continued?

What connects the closing of the monasteries with the setting up of Royal hospitals ?

What connects the Crimean War with professional nursing?

Revision sheet 2

List 3 Laws passed by the Liberal Government between 1906 and 1911 and explain what they did.

1.

2
.
3.

Describe 3 features of the National Health Service .

1.

2.

3.

Describe the main features of the National Insurance Act 1911.

1
.
2.

3.

Define

Laissez Faire –

Welfare State –

Labour Exchanges–

Nationalisation–

Who were..

1. Seebohm Rowntree –

2. William Beveridge –

Write down one success of the NHS as a success and one criticism

+

-

Describe 3 important reforms that were made to the National Health Service between 1948 and 2004.

1.

2.

3.

Key Qu- 6

How effective were attempts to improve public health and welfare over time?

You need to know about:

- Public health and hygiene in medieval times (p59)
- Public health and hygiene in 16th and 17th centuries (p59)
- Impact of industrialisation on public health (p59-61)
- Work of Edwin Chadwick (p60)
- Efforts to improve housing and pollution in 20th century (p61-62)
- Local and national attempts to improve public health in 21st century (p63)

KEY VOCAB: History

Laissez faire
Government policy of leaving things to take their own course

Smog
A mixture of coal smoke and fog in cities which could kill people or cause breathing problems

Dirty Party
MPs in the House of Commons **against** using taxes to pay for improvements in public health, due to the cost

Saltaire
A model town created by Titus Salt a factory owner interested in improving the lives of his workers

New Towns
Planned towns designed to improve people's quality of life by taking overcrowding from cities eg London Birmingham & Glasgow

Gas and Water Socialism
Taking over by government/councils providing gas/water supplies. It improved service and cut costs

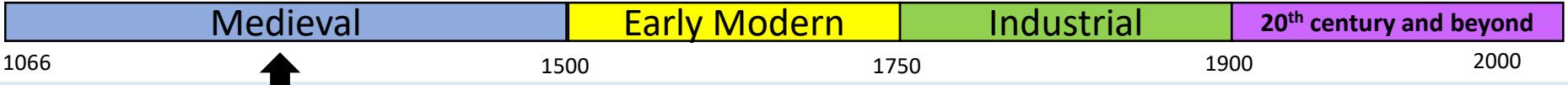
Clean Party
MPs in the House of Commons who **supported** using taxes to pay for improvements in public health

5 – a day Campaign
Campaign started in 2003 to encourage people to eat 5 portions of fruit or vegetables a day

Public Health
Type of health where the population as a whole aims to be protected usually by government regulation/ support

Philanthropist
a person who seeks to promote the welfare of others

Environmental Protection
Laws and methods used by government and others to protect the natural environment



Public health and hygiene in Medieval times

In Medieval times**, mortality rates were higher** in the towns than in the countryside as people lived closer together, alongside their animals and their filth. Medieval towns:

- were filthy and unhealthy.
- Had a **lack of building regulations** and restrictions meant that **houses were crowded** together
- A lack of hygiene provided breeding grounds for vermin.
- **Waste disposal was primitive** and drinking water often contaminated.
- As a result disease and, on a larger scale, plague was rife and mortality rates were high especially among children.
- Civic responsibility for public health varied. Most towns led by corporations were reluctant to spend money though some such as Shrewsbury and Coventry recognised the problems and made efforts to clean up their streets

BUT THERE WERE SOME IMPROVEMENTS…

- Monasteries like Tintern Abbey followed strict rules of cleanl
- Towns began to build provided public latrines (toilets) often placed on bridges. By the 15th century, London had over a dozen.
- London produced about 50 tons of excrement per day, so muck-rakers were hired to clean the streets. They were paid much better than the average working man. There were also gong farmers who cleared out cesspits.
- Towns had bath houses, eg Southwark, in London, had 18 hot baths. Even smaller towns would have bathhouses, often connected to bakeries.
- Towns introduced quarantine laws to combat plague, boarding up houses of infected people. People with leprosy, likewise, were confined to lazar houses.
- Crusaders brought back soap from the Middle East to Europe

Coventry in 1421 legislation made to try to clean up the town:

- Every man had to clean in front of his house or pay a fine
- Waste collection services set up
- Designated waste disposal places outside the town
- Between 1421 – 1475 the council banned people from getting rid of their waste in the river 9 times.
- Latrines running across a stream were removed
- Butchers and stables were banned from tipping waste into the river

Medieval | Early Modern | Industrial | 20th century and beyond

1066 — 1500 — 1750 — 1900 — 2000

Public health and hygiene in the 16th and 17th centuries (Early Modern)

Towns and cities still very dirty!

1532 Henry VIII made a law that gave towns permission to collect taxes for building sewers – few did!
1547 it was forbidden to pee in the courtyards of Royal Palaces
People were making a connection between dirt and disease and some started bathing – a least monthly!
1665 villagers in Eyam took precautions to contain the Great Plague (see p13)
1666 The Great Fire forced the rebuilding of London and the roads made wider and by insisting houses were built of stone with tile or slate roofs
1690 onwards several Acts of Parliament made about cleaning and paving streets, clearing away dung from communal areas and stopping people keeping pigs in their homes.

Clearly central and local government were recognising the link between filth and disease

Impact of industrialisation on public health 19th century

- Industrialisation meant people moved to cities where there were more jobs, e.g: - Bradford –wool, Manchester – cotton, Birmingham – metal, Stoke on Trent – pottery.
- Caused overcrowding, poor living conditions- caused spread of diseases like typhus
- Lack of building regulations- led to little space and lack of light, back to back housing
- Smoke from factories/homes- caused respiratory diseases
- Industrialisation- led to dangerous working conditions eg burns from molten iron or poisoning from chemicals
- Life expectancy was lower in the cities
- Water and gas supplies left to private companies
- Poor people worst off
- **Government followed a policy of 'Laissez – Faire' and did not believe in interfering with working/living conditions**
- Many lived in slums

Local and central government were not interested in public health. Serious outbreaks of cholera in 1832 and 1849 forced the government to investigate living conditions in the rapidly expanding industrial towns.

Individuals who made improvements…

Titus Salt

- Successful wool mill owner (Yorkshire)
- Mayor of Bradford – tried to persuaded council to improve living and working conditions in Bradford FAILED!!
- Moved his business and built a model village SALTAIRE for his workers – houses, library, school, alms-houses, Church,
- NO PUB!

How did the city of Birmingham lead the way in 19th Century Public Health?

- **Joseph Chamberlain-'gas and water socialism'**
- ***Council took over gas and water companies* with aim to improve supplies and use profits to make city a better place to live.**
- **By 1879 council had made a profit of £165,000**
- **1884 gas prices reduced by 30%**
- **1876 Birmingham Improvement Act cleared 40 acres of slum housing and built new streets, parks, library and council house.**

Medieval | Early Modern | Industrial | 20th century and beyond

1066 1500 1750 1900 2000

The work of Edwin Chadwick 19th century

- He believed in the "miasma theory" but recognised the link between living conditions and poor health
- Carried out report in 1842 "*The Sanitary Conditions of the Labouring Population"* he recommended that parliament should pass legislation to make local authorities responsible for improving drainage and sanitation, the cost of which would be borne by local rates.
- *Government IGNORED the report*
- He was a member of the Poor Law Commission
- Instrumental in setting up the Health of Towns Commission in 1844 which led to the first Public Health Act in 1848
- Influential member of the **'Clean Party'** who wanted to bring about change in public health. There were opposed by MPs known as the **'Dirty Party'** because it was largely down to taxation of rich to pay for changes.

Public Health Act 1848

1. Allowed councils to improve conditions in their towns if they wanted to and if they paid for it
2. Towns with a high death rate could be forced to make improvements
3. Central Board of Health set up (dissolved after 10 years)
4. **Encouraged** towns to set up their won local health boards, set up sewers and inspect lodging houses.

However ….

By 1872 only 50 councils had a medical officer. Some towns had made changes but many had not.

Public Health Act 1875

POWERFUL – legislation about sewerage, water supplies, housing and disease

Councils were FORCED to provide

- clean water
- Medical officers of health
- Sanitary inspectors to check slaughterhouses to avoid food contamination

Councils had to

- Cover and maintain sewers
- Provide clean water for people
- Street lighting
- Collect rubbish

Other Acts…

1866- Sanitary Act- local authorities had to take action to build sewers

1875- Artisan Dwellings Act- gave authorities permission to buy and rebuild slum areas

This marked the end of Laissez-Faire!

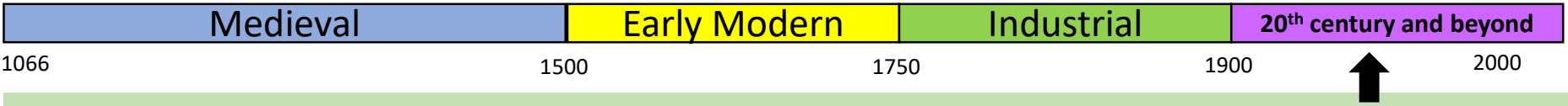
1858 London started building new sewers. Bazalgette the Victorian engineer who masterminded London's modern sewer system. He saw to it that the flow of foul water from old sewers and underground rivers was intercepted, and diverted along new, low-level sewers, built behind embankments on the riverfront and taken to new treatment works.

Housing Act of 1875- councils could knock down poor housing and replace it.

Flushing toilets in better off homes

'Pears' soap became and was cheap for people to buy.

Public Health began to improve!



Efforts to improve housing in the 20th century

Why did the government start to intervene in 20th century?

1899 Boar War – 40% of male recruits found to be too unfit to serve
1889 Charles Booth identified 35% of population living in abject poverty in London
1897 Seebohm Rowntree – identified almost half of working class in York living in poverty
1913 Maud Pember Reeves set out to prove that working class wasted money on drink and ended up showing how many were in poverty and how many women went without to ensure their husbands and children were fed.

Liberal Government began to make changes at start of 20th century

REFORMS for sick, unemployed, elderly and children (see slide 51)

Progress with housing after WW1

- **1919** – Lloyd George promises **'Homes fit for Heroes'** and clear away slums
- Housing Act of 1919 gave grants to local councils to build homes, so estates of council houses were built all over the country
- Mass demolition of back-to-back housing began in the 1920s
- **1920s-30**s subsidies for building council housing to rent to workers. New towns built. East End Londoners moved out to new town like **Milton Keynes**. Houses now featured bathrooms, running water, gardens! Some houses still had outdoor toilets into the 1930s.
- **Beveridge Report of 1942** identified '**squalor**' as one of the 'Five Evil Giants' to be tackled by building 'more and better homes'.
- **After WW2** there was a housing shortage so grants were given to build new homes and charge low rents; 1.25 million new homes were built by 1951.
- **1950s** slum clearance became the focus
- **In the 1960s**, many inner-city slums were replaced by **high-rise blocks of flats**.

Medieval | Early Modern | Industrial | 20th century and beyond

1066 1500 1750 1900 2000

New Towns: Designing the 'towns of the future'

Problems of 'old' towns:
Overcrowding, slum housing, poor infrastructure and sewerage and dirty streets.

Aims of 'new' towns:
Create 'greener' setting, attractive and spacious housing with indoor plumbing , gardens, public parks, cycle routes, planned towns and people separated from traffic. Solve problems of overcrowding or 'overspill' in the major cities

Examples of 'new' towns:
Letchworth 1903 – first new town
Milton Keynes 1967 for London overspill
Telford 1963 and Chelmsley Wood 1965 for Birmingham overspill
Cumbernauld 1956 for Glasgow overspill

Problems of 'new' towns:
Large housing estates with inadequate facilities, isolation from traditional communities, cheap tower blocks built – poorly designed and constructed, poor maintenance,
anti-social behaviour.

Case Study- Cumbernauld New Town

52,000 houses divided into 11 regional areas
Started in 1956 to deal with overcrowding in Glasgow
8th largest town in Scotland
Social problems linked to new towns
In 2005, Cumbernauld Shopping Centre voted 'the worst building in Britain!'

Efforts to improve pollution in the 20th century

Air Pollution - air quality in towns and cities was heavily polluted. London experienced frequent smog. In December **1952 the 'Great Smog'** (mix of coal, smoke and fog) fell over London, so thick it stopped trains, cars and public events. 4,000 people died of respiratory illness.

The **Clean Air Act of 1956** encouraged the use of cleaner coal, electricity and gas for heating. It also tried to relocate power stations away from cities. This only temporarily solved the problem of air pollution as a huge increase in car ownership created a new source of pollution – exhaust fumes.

Government passed legislation –**Clean Air Act in 1956 and 1968**

Government continue to pass laws to protect the population from air pollution – e.g.: car emissions & smoking.

Environmental Protection Act 1990
Clean Air Act 1993

Both acts aimed at cutting 'Greenhouse gases'

- In **2003** London introduced the congestion charge to persuade drivers not to go into central London and other towns and cities introduced "park and ride" schemes.
- In **2018** the United Nations warned that there were dangerous levels of air pollution in UK.

Local and national efforts to improve public health in the 21st century

Local and national government health campaigns in the 21st century - Government realised it is better to spend money on prevention than having to spend money on curing diseases that could be prevented, e.g. if people stopped smoking this would save the NHS millions of pounds each year.

'Walking for health' is a fitness drive to encourage people to take more exercise, to walk 10,000 steps a day, at a moderate to fast pace

'Be Active' is Birmingham City Council's scheme to provide free leisure services

Fruit and vegetables reduces your risk of heart disease and cancer – the 'Five A Day' and the Eatwell Guide tried to get people to eat a balanced diet

"Hands – Face – Space" and other campaigns to reduce the spread of COVID 19 during the Coronavirus pandemic.

Unhealthy lifestyles ? – According to doctors, in the late 20th Century – present British people:
Eat too much
Eat the wrong foods
Drink too much alcohol
Do not take enough exercise
Smoke too much (although the numbers of smokers is falling)
Work by sitting down and using screens for long periods of time

Unhealthy lifestyles ? United Kingdom health in numbers
20% of children in primary school obese
68% of men & 58% of women overweight or obese – highest in Europe
15% regularly smoke & 400% increase in alcohol related liver disease
20 million British people take no regular exercise at all.
Overall cost to the NHS £1.2 billion a year

Who is responsible for Public Health?

Revision sheet

List 3 ways that towns tried to improve public health in the Medieval Period.

1.

2
.
3.

Define

Clean Party –

Dirty Party-

Gas and Water Socialsim-

Describe 3 problems caused by Industrialisation in towns and cities in the 19th Century

1.

2.

3.

Who were..

1. Edwin Chadwick –

2. Titus Salt –

3. Joseph Chamberlain -

Describe how the Public Health Acts of 1848 and 1875 attempted to improve public health changed from the Medieval period to the Industrial (19th C) period

Public Health Act 1848

Public Health Act 1875

What were the main differences between the two acts?

What connects the city of Birmingham with 19th Century public health?

Revision sheet

List 3 problems connected with 'old' towns in the early 20th Century.

1.

2

.

3.

Define

Smog –

New towns –

Environmental Health-

5 - a – day campaign

What effect did Smog have on London in the 1950s?

Describe 3 problems connected with 'new towns' from the 1950s onward.

1

2.

3.

Describe 3 changes in Ancoats, Manchester to improve its public health.

1

.

2.

3.

What problems have doctors identified with health and lifestyle in the later part of the 20th Century?

Explain 3 ways that have been put forward to address these problems.

Exam technique and model answers

How do I answer Question 1 on the Medicine paper?

QUESTION 1

Look at Sources A, B and C, which show treating and curing illness and disease over time, and answer the question which follows.

Source A

[Attempting to treat and cure illness and disease in the 17th century]

Source B

[Attempting to treat and cure illness and disease in the 20th century]

Source C

[Attempting to treat and cure illness and disease in the 21st century]

Use Sources A, B and C to identify **one** similarity and **one** difference in treating and curing illness and disease over time. [4]

You need to refer to all 3 sources once

Identify a similarity between two sources and say how it is shown in the source
Identify a difference between two sources, one of which hasn't been mentioned so far and say how it is shown in the source

One similarity between source a and c is that it is someone treating the illness on their own. Source a shows the use of leeches by the person which I know was used to get rid of 'impure' blood from the body. However, source C shows the monitoring of blood sugar levels using a phone by themselves. This shows treatment can be done by yourself.

One difference between Source B shows people helping next to someone with illness and disease. They are using an anaesthetic to allow the illness to be treat and cured. I know that anaesthetic can be hard to give the correct dosage so must be monitored and done by another person so therefore this is why it is different.

4/4

How do I answer Question 2 on the Medicine paper?

Study Sources D and E below and answer the question which follows.

Source D

> Care must be taken that neither men nor goods come from any places suspected of having plague without a certificate of health. If not, they should be isolated in the Pesthouse for forty days until they can claim soundness of body.

[Adapted from *Certain necessary directions, as well for the cure of the plague, as for preventing the infection*, a book published in 1665. It was published by the Royal College of Physicians on the request of the Privy Council (advisers to the king).]

Source E

> The factory chimneys pour out smoke and soot upon the inhabitants of the towns... such is the inefficiency of the local councils and their contempt of the law for the protection of the public against nuisances.

[Adapted from *The Sanitary Conditions of the Labouring Population*, a report written by Edwin Chadwick in 1842. Chadwick was a lawyer, social reformer and campaigner for sanitary reform.]

Which of the two sources is the more reliable to an historian studying public health over time? [6]

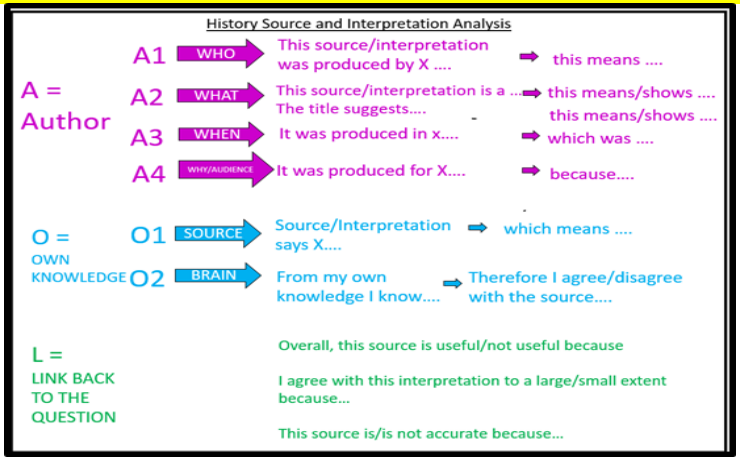
[In your answer you should refer to the content and authorship of the sources and use your own knowledge and understanding of the wider historical context.]

You need to write 3 paragraphs:

One paragraph- Source D- author/own knowledge

One paragraph- Source E- author/own knowledge

Judgement- which source is more reliable?



Source D states it is from the early modern period and states that people should be isolated to improve public health. The author of this source will be biased as they are writing on request of the Privy Council who are very influential. The source was written by physicians so will have proper understanding so may be reliable. The source states 'should isolated in a persons house'. I know that during this time, public health was a major issue with many living in poor conditions. The government didn't do much to help except improving towns after the fire of London. So the source isn't very reliable.

Source E was written by Edwin Chadwick and states that public health must be improved. The author will understand what is going on as he is a social reformer so will have seen poverty but may be slightly biased. The source is a report so should be very reliable. The source states 'inefficiency of local councils'. I know that during the Industrial period the government believed in laissez-faire. This was the belief that the government shouldn't help the people and they should not interfere in public health. I know that the source is reliable as it wasn't until 1848 the first Public health act came out.

Overall, I think source E is much more reliable as it is a report, meaning research has been done, as well it describes what the government was like during the time and their beliefs of leading the people and not improving public health.

4/6

Next steps- emphasis on Royal College Physicians- not biased, instructed by King- adds kudos, specifics on Chadwick

How do I answer Question 3 on the Medicine paper?

Other questions asked…

	Q1- 4 marks	Q2- 6 marks	Q3- 5 marks
2018	KQ2- Identify one similarity and one difference in Preventions	KQ6- Which source more reliable about public health	KQ1- Describe main causes of illness and disease in medieval period
2019	KQ3-Identify one similarity and one difference in Treatments	KQ2- Which source more reliable about preventions	KQ5- Describe the development endowed hospitals 18th century
2020	KQ5-Identify one similarity and one difference in patient care	KQ1-Which source more reliable about causes	KQ6- Describe attempts to improve public health in 19th century
2021	KQ6-Identify one similarity and one difference in public health	KQ2-Which source more reliable about preventions	KQ4- Describe the advances made in medical knowledge by Vesalius and Pare 16th
2022	KQ2-Identify one similarity and one difference in Preventions	KQ3-Which source more reliable about treatments	KQ1- Describe causes of illness in the medieval era
2023	KQ3-Identify one similarity and one difference in Treatments	KQ6- Which source more reliable about public health	KQ5- Describe the care of the sick by the Church and monasteries in medieval period
2024	KQ4- Identify one similarity and one difference in medical knowledge	KQ3-Which source more reliable about treatments	KQ2- Describe development of vaccination in 18th and 19th centuries

QUESTION 3

Describe the care of the sick by the Church and monasteries in the medieval period. [5]

You need to write 2/3 paragraphs or an outline of 5 key detailed points

Christian hospitals in the medieval period were owned and paid for and run by the church. They gave basic care and comfort to the patients and separated men and women. These hospitals did not properly treat patients but only cared for them. They were often used by the poor and an example of a Christian hospital was Christ's hospital.

Monasteries also took care for the sick by setting up monastery hospitals. These focused on the care of the soul as being as important as the care of the body. Men and women were expected to pray as it was believed they were ill as a punishment from God for their sins. Again, these hospitals only provided care through food and housing but didn't properly treat patients. An example of a monastery hospital is St John's hospital.

4/5 marks

Next steps- leper hospitals, almhouses

How do I answer Question 4 on the Medicine paper?

QUESTION 4

Explain why medical knowledge advanced in the 16th and 17th centuries. [9]

You need to write 3 paragraphs and a judgement

Paragraphs should be purely focussed on the question

Use the wording the question to explain your points

Other questions asked…

2018	KQ5- Explain why patient care improved in Britain in the 20th century.
2019	KQ4- Explain why medical knowledge improved in the 16th century
2020	KQ3- Explain why attempts to treat and cure disease in medieval period were mostly ineffective
2021	KQ5- Explain why patient care improved in the second half of 19th century
2022	KQ6- Explain why public health and hygiene improved in the 19th
2023	KQ4- Explain why medical knowledge advanced in the 16th and 17th centuries.
2024	KQ6- Explain why industrialisation affected public health in the nineteenth century.

One reason why medical knowledge advanced at this time was Vesalius. He was a professor from Italy who studied anatomy. He was allowed to perform dissections but not allowed to study the body closely. He was so dedicated to his work that he stole the bodies of criminals to dissect. He was influential as he proved Galen could be wrong. Galen thought the blood travelled through holes in the septum, but Vesalius proved him wrong. Galen also thought the jaw bone was two bones but Vesalius proved it was one. These discoveries helped show that Galen may not be correct about everything.

Another reason why medical knowledge advanced was Paré. He was a French army surgeon and he created alternative treatments for wounds. Firstly, he invented a method of tying vessels called ligatures, at a time where the method mainly used was a hot iron sealing them shut (cauterisation). He also invented his own mixture of rose oil, turpentine and egg whites to treat bullet wounds, rather than hot oil. This showed that others could act on their initiative and create new methods to treat illness and wounds.

Finally, Harvey also helped to prove Galen wrong. Harvey studied circulation, and proved how the heart worked as a pump. He also showed how the heart is the centre of the body, not the liver, and challenged the idea of bleeding by proving you couldn't' have too much blood. This helped to again show that Galen wasn't always right, and advanced medical knowledge as well as encouraging others to experiment.

9/9

How do I answer Question 5 on the Medicine paper?

QUESTION 5

Outline how attempts to prevent illness and disease changed from c.500 to the present day. [16]

[In your answer you should provide a written narrative discussing how attempts to prevent illness and disease changed across three historical eras.]

Marks for spelling, punctuation and the accurate use of grammar and specialist terms are allocated to this question. [4]

You need to write 4 paragraphs and a judgement

You should write this answer in chronological order and write about the Medieval, Early Modern, Industrial and Modern/20th century periods

You need to show:
What happened in the time period in relation to the question
The extend of change in medicine
Why those changes did/did not happen

Other questions asked…

2018	KQ4- Outline medical knowledge developments from c.500- present day
2019	KQ6-Outline public health developments from c.500- present day
2020	KQ2-Outline preventions c.500- present day
2021	KQ3- Outline treatments developments from c.500- present day
2022	KQ4-Outline medical knowledge developments from c.500- present day
2023	KQ2- Outline preventions c.500 to present day
2024	KQ1- Outline causes c.500 to present day

During Medieval times, there were a few methods used to prevent illness and disease. The church was still very influential, so encouraged praying and not sinning, as it was believed that illness was a punishment for sin. Also, there were beliefs such as avoiding to eat and drink too much, and avoid too much sex, as this was believed to prevent illness and disease.

There were some changes between the medieval and early modern times because during this time, activities became fashionable that had some traces of medical accuracy. Firstly, there was the ancient Greek and roman beliefs about fresh air, exercise and diet. This became fashionable as it was believed that this would help prevent illness and disease. Another thing that became fashionable during this period was bathing. Many more (especially rich) people started bathing, with a famous bath town being Bath. It was believed that bathing prevented illness. There were also some things that prevented illness that occurred by accident e.g. King Edward ordered the streets of London to be cleared of the filth.

There was significant change in the Industrial period as this was the beginning of vaccinations. Edward Jenner hypothesised that if a person was infected by cow pox, it would then protect them from the far deadlier smallpox. He inoculated 8 yr old James Phipps with cowpox taken from Sarah Newes. Six weeks later Jenner inoculated Phipps with smallpox, and he survived. He did this with 23 other people, which helped prove that it worked and was then given funding by the British government in the early 1800s to open and run a vaccination clinic in London. In 1852, the smallpox vaccination was mandatory in England. There was also Louis Pasteur who was significant in preventing disease. He came up with the idea that there are good and bad bacteria, and the bad bacteria cause illness and disease. This was the germ theory. He then went on to create the first vaccine against rabies in 1880. Robert Koch took this further by identifying certain bacteria caused different diseases, and from this was able to identify the bacteria that caused cholera in 1883-4 among others.

In the 20th century, there were also changes to prevent illness. The discovery of the human genome by Crick, Franklin and Watson was followed by the mapping of the genome in 1990-2003/. This was important as it allowed scientists to study the human genome and find genes that caused genetic disorders. There was also the continuation of vaccinations such as the MMR vaccine in 1985 and the Hepatitis B vaccine in 1994 which amongst others have helped to eradicate some deadly diseases e.g. whooping cough. However, people still turned to ideas such as lucky charms and prayer to prevent illness and these have been used throughout all time periods.

Overall, the attempts to prevent illness and disease have dramatically changed, but it was between the early Modern and industrial period that saw the biggest change as this saw a greater scientific emphasis happen and created methods we still use today.

16/16
4/4 spag

How do I answer Question 6a on the Medicine paper?

6a and 6b are case study questions and these change every two years.

2024-5 Case study- Ancoats in Manchester

Example answer below is from a different case study

QUESTION 6

(a) Describe **two** factors that led to high death rates in Scutari Hospital during the Crimean War. [8]

You need to write 2 paragraphs

Write down everything you know with as many facts as possible on the chosen topic in the question

One factor which led to high death rates in Scutari was the conditions of the hospital. They were built on an overflowing sewer, had 6,000 crammed in 4 miles of space, was very dirty and dark. This led to high death rates as dirtiness such as faeces led to preventable diseases such as cholera and typhoid being more common and 60% died when they had cholera. As well due to overcrowding and beds spaced 30cm apart, many diseases spread between the solders through touch and coughing.

Another factor which led to high death rates was the nursing. Nursing was not a respected profession and was left to the drunken, too old and too stupid nurses. They had no understanding of cleanliness on how to treat patients so many died. As well, doctors were very limited so many weren't seen by doctors especially if they were just ordinary soldiers. Because of the poor nursing, disease was spread very quickly killing thousands. The nurses didn't clean hospitals so disease spread and a simple amputation saw 28% chance of death.

8/8

How do I answer Question 6b on the Medicine paper?

6a and 6b are case study questions and these change every two years.

2024-5 Case study- Ancoats in Manchester

Example answer below is from a different case study

(b) Explain why the work of Florence Nightingale at Scutari Hospital was important in improving patient care over time. [12]

You need to write 3/4 paragraphs

This question is looking at you being able to show developments over a period of time, show strong contextual knowledge of the site mentioned in the case study.

Each paragraph should give a new point showing a key development which took place and the impact this had linked to the question

One reason why the work of Florence Nightingale at Scutari was important in improving patient care was due to it improving sanitary conditions. Before Nightingale in Scutari, beds were spaced 30cm apart, overcrowding of 6,000 in 4 miles of space, rotten floors with sewage due to overflowing sewer. As well, the patients lived in dark conditions and dirt, this was due to people not linking disease and cleanliness. After Florence Nightingale arrived she segregated patients on illness and made hospitals light and well ventilated, provided soap, got sanitary commission to fix the sewer and cleared the wards. This led to 2/100 dying instead of 43/100 so patient care was improved.

Another reason why patient care improved was due to nursing. Before nightingale, nursing was not a respected profession, was left to the old and stupid and they didn't understand cleanliness. After nightingale, arrived she brought a team of nurses who she trained in cleanliness and made nursing a respected profession and taught her ways. This led to long term improvements of her writing notes on nursing and setting up the first nightingale school of nursing. This improved patient care of those who cared for them were better trained.

A third reason why patient care improved was due to the new classification and statistics. Before nightingale, many died of preventable diseases, 4 x more died from disease than battle wounds during the Crimean War. Nightingale helped the sanitary commission create the Rose diagram using army statistics. This allowed them to identify that 60% died of cholera, 16,000 of 18,000 died from preventable diseases and 25,000 British soldiers died of illness. This improved patient care as it meant patients were segregated to prevent getting diseases and hospitals were kept clean.

Finally, patient care was also improved due to hospitals. Before nightingale hospitals were overcrowded, dirty and dark. After nightingale used the environmental theory (ventilation, lights and space) as well as cleaning hospitals. This reduced deaths from disease from 50% to 3%. Long term she wrote notes on nursing and introduced the pavilion principle in hospitals their wards were at right angles to another. This improved patient care as disease spread less.

10/12

How do I answer the Questions on the Medicine paper?

Changes in Health and Medicine in Britain- Writing frame

It will ask: "Use Sources A, B and C from the previous page to identify one similarity and one difference in X..."

You should write: -

- One **similarity** is that sources (add source letters) both show…
- One **difference** is that source (add source letter)...

It will ask: Which of the two sources is the **more reliable** to an historian studying...

You should write:

- Paragraph on **Source D**-

A. Who is the author? Why did they write it? Is it reliable? Look at the date. **O-** Use own knowledge to agree/disagree.

- Paragraph on **Source E**-

A. Who is the author? Why did they write it? Is it reliable? Look at the date. **O-** Use own knowledge to agree/disagree.

- **L-** Your opinion- choose which source is more reliable and why

It will ask: "Describe X"

You should write:

– X was… (2 developed paragraphs)

It will ask: **"**Explain why X was important in..."

You should write:

– 3 reasons explains why X was important

– Firstly,

– It further developed…

– Also,…

– Overall, X was important because…

It will ask: **"**Outline how X has changed from c.500 to the present day."

You should write:

– In the Medieval period…

– There was very little/some/major changes in….during the Early Modern period

– The most significant change happened in the….period when….

– Major advance occurred in…as a consequence of…

– Overall,…

6a + b (medicine only) The focus study will assess what you have studied;	**It will ask:**. Describe two main features of … in X **You need to:** identify two features and provide a detailed and accurate description of the features putting them into the 'big picture'. **You should write:** – One feature of …X in X was… – A second feature of … in X was…	**It will ask:**. Explain why the ? of ? was important in... **You need to:** explain how the historic site shows **change** over time in a particular theme and period in history. **You should write:** – The ? during the Crimea demonstrates change over time in relation to X because… – **REPEAT** the above. At least 3 reasons in total. – …. is important in showing this change because…