

AQA GCSE History

Britain: Health and People 1000 – Present

Medieval	Renaissance	19 th Century	Modern	Factors
<ul style="list-style-type: none">○ What did a medieval doctor know?○ Christian medicine○ Islamic medicine○ Medieval surgery○ Public health in the medieval period○ The Black Death	<ul style="list-style-type: none">○ The Renaissance○ Andreas Vesalius○ Ambroise Pare○ William Harvey○ 17 and 18th Century medicine○ The Great Plague○ John Hunter○ 18th Century hospitals○ Edward Jenner	<ul style="list-style-type: none">○ Anaesthetics○ Louis Pasteur and Germ Theory○ Robert Koch○ Public health in 19th Century Britain	<ul style="list-style-type: none">○ Penicillin and antibiotics○ WWI and WWII○ Improvements to surgery○ Liberal social reforms○ Welfare state	<ul style="list-style-type: none">○ Religion○ War○ Communication○ Science and Technology○ The role of the individual○ Government○ Chance

Medicine Stands Still: The Medieval Period 1000 - 1450

Even before the Medieval period people had tried to cure illness in the ancient world. The Medieval period can be divided into the Dark Ages, the early Middle Ages and the later Middle Ages. This revision guide starts at the early Middle Ages. Medical ideas from the ancient world were lost in the Dark Ages because of wars, but by the early Middle Ages Europe became more peaceful and stable and knowledge found its way back to Europe.

What did Medieval doctors know?

The ideas of famous Greek doctors like Hippocrates and Galen had been passed on and became an essential part of treatments used by a medieval doctor.

What could a Medieval doctor do?

- If you were ill in Medieval England there were many people you could go to for treatment: The local **wise women**, the **barber-surgeon** and if you could afford it, a **university-trained doctor**.
- Medieval doctors followed the ancient Greek method of 'clinical observation' to produce a diagnosis. They noted the symptoms; took the pulse; noted the smell, colour and taste of the urine.
- A doctor might then prescribe natural medicines made from plants, animal products, herbs and spices.
- A common treatment was **bloodletting**; however, this cure often didn't work. You might be forced to vomit or go to the toilet. Remedies often combined natural with supernatural approaches like astrology.



How did Christianity affect Medieval Medicine?

1. The Christian church controlled the universities and consequently the training of doctors.
2. They were taught the medical ideas of the ancient Greek and Romans.
3. The training was to make the old knowledge clear and understandable, **it was not to discover new ideas**.
4. The Christian Church approved of Galen's book because he believed in a single God. However, this meant it was difficult to challenge anything that Galen wrote.
5. The Church saw the role of the church not as a healer but as someone who could predict the symptoms and duration of an illness.

How did Islam affect Medieval Medicine?

1. The Islamic Empire was a single state ruled over by a Caliph. Caliphs provided peace and order needed for medical progress.
2. Books were translated in Arabic and the Caliph's library preserved hundreds of ancient Greek medical books by Hippocrates and Galen.
3. Islamic religion encouraged medical learning. They sought to find cures for diseases.
4. The Islamic Empire set up the first hospitals for mental illness.
5. In 805, the Caliph set up a major new hospital in Baghdad with a medical school. This hospital was intended to treat patients and not just care for them.
6. Two Muslim doctors in particular **Al-Razi and Ibn Sina** influenced medicine in western Europe.
7. **Al-Razi (Rhazes)** wrote over 150 books and he stressed the need for careful observation of a patient.
8. **Ibn-Sina (Avicenna)** his encyclopaedia of medicine known as the *Canon of Medicine* became the standard European medical textbook used to teach doctors until the 17th Century.

How was a Medieval doctor trained?

- It took seven years of study at a university.
- They listened to lectures and debated what they read in books.
- They studied the work of Hippocrates and Galen alongside the knowledge from the Muslim, Indian and Chinese worlds.
- They studied British medical textbooks such as **Gilbert Eagle's *Compendium Medicine* (c1230)**

Who could ordinary people turn to?

- Barber-surgeons – they would cut hair, pull teeth and complete minor external surgical procedures.
- Wise women or men offered traditional herbal remedies, first aid and supernatural cures.

Did religion help or hinder medicine in Medieval Britain?

FACTOR: Religion

<u>Religion Helped medicine in Britain</u>	<u>Religion Hindered Medicine in Britain</u>
<ul style="list-style-type: none">• In Europe, the training of doctors began after 1200. The Christian Church controlled the universities because that was where religion was studied and church leaders were trained. In Britain, the church controlled the training of doctors in universities of Oxford and Cambridge. They taught the medical ideas of the ancient Greeks and Romans. The training was to make the old knowledge clear and understandable, not to discover new ideas.• The church saw the role of the doctor not as a healer, but as someone could predict the symptoms and duration of the illness, and provide the reasons for why God might inflict the illness on the person. This gave people comfort, and allowed patients and families to put their affairs in order and die in peace.• Two Muslim doctors Al-Razi and Ibn Sina had great influence on medicine in western Europe. Their discoveries along with the old medical knowledge of the ancient Greeks found their way to Western Europe in the Middle Ages.	<ul style="list-style-type: none">• There was a strong belief that illness came from God and curing illness would be a challenge from God. Illness was sent as a punishment or a test of faith.• The church respected traditional medical knowledge of the Ancient World because it thought Hippocratic and Galenic ideas were correct. Monks preserved and studied these ideas; they copied the books out by hand, as well as other traditional medical books such as Pliny's Natural History.• Hospitals depended on charity for money and were mainly financed by the Christian Church or financed by a wealthy patron. There were many types of hospitals: Asylums for the mental ill; monasteries had infirmaries that could provide free treatment for the poor; 'Lazar Houses' for people with leprosy set up outside town.• Both Christian and Islamic religion did not allow human dissection. However, Islamic doctor Ibn al-Nafis did conclude that Galen was wrong about how the heart worked and blood circulated. But unfortunately his books were not read in the West, and Europeans continued to accept Galen's mistake until the 17th century.

Over all, the Christian Church played a big part in medical stagnation in the Middle Ages. It discouraged progress by:

- forbidding dissection of human corpses
- insisting that people agree with the writings of Galen
- encouraging people to rely on prayers to the saints and superstition to cure them of disease
- encouraging the belief that disease was a punishment from God - this led to fatalism and prevented investigation into cures

However, the Church did encourage people to go on Crusades, meaning that people travelled to the Middle East. Here they came into contact with Muslim doctors, who were significantly more skilled than their counterparts in Britain.



Potential exam questions:

- Q2: Explain the significance of Hippocratic and Galenic medicine after 1000Ad. (8)
- Q3: Compare the work of Hippocrates and Galen. In what ways were they similar? (8)
- Q3: Compare the impact of Christianity and Islam on medicine in the Middle Ages. In what ways were they similar? (8)
- Q3: Compare doctors in the Middle Ages to doctors in the 19th century. In what ways were they similar? (8)
- Q4: Has the role of religion been the main factor in the development of medicine in Britain since Medieval times? Explain your answer with reference to individuals and other factors. (16+4)

How good was Medieval Surgery?

Surgery made some surprising leaps forward in Medieval times. This was thanks partly to ingenious barber-surgeons on the battlefield, and partly to the discovery of some natural anaesthetics and antiseptics. During the Middle Ages, surgery was left to barber-surgeons, not to trained doctors. It was a time of frequent warfare, and the constant fighting meant that surgeons' skills were much in demand. Perhaps as a result, surgery actually progressed in Medieval times.

Surgery in the Medieval period was a risky business. Surgeons had no idea that dirt carried disease. Some believed pus was good for the wound. Operations were done without effective painkillers. **Patients could die of blood loss, infection or shock.**



Who Practiced surgery?

Most Medieval surgeons were barbers who combined hair cutting with small surgical operations such as bloodletting and tooth extraction. Compared with doctors, barber-surgeons were lower class medical tradesmen. They learnt their skills by being apprenticed to another surgeon, watched and copying them; or they learned on the battlefield.

What could a Medieval surgeon do?

Bloodletting

– making small incisions in the arm to allow blood to run out.

Amputation

– cutting off a painful or damaged part of the body.

Trepanning – trying to cure an epileptic patient by drilling a hole into the skull to let the demons out.



Who made progress in surgery during the Medieval period?

Abulcasis

A Muslim surgeon, considered the 'father of modern surgery'. He invented 26 new surgical instruments and described many new procedures such as using ligatures.

Hugh of Lucca and his son Theodoric

They used wine on wounds to reduce the chances of infection. Their ideas went against Hippocratic advice and did not become popular.

De Chauliac

Wrote a famous textbook – *Great Surgery* (1363) this dominated English and French surgical knowledge for 200 years.

FACTOR: The Role of the Individual

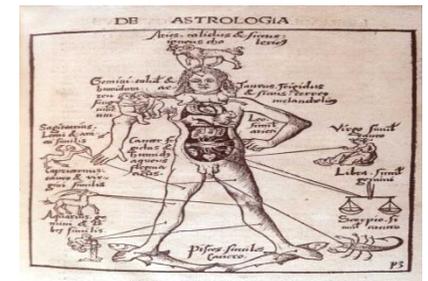
How did surgery advance in Britain during the Medieval period?

The science of surgery in Western Europe and in the Islamic Empire was advanced by surgical pioneers who tried new methods. Their books were read in Latin by educated religious men in Europe; in England they translated into English. By the end of the 14th century, English doctors and surgeons could read about the ideas of many surgeons.

John of Arderne – He was one of the most famous surgeons in Medieval England. His surgical manual, *Practica* (1376), contained illustrations of his operations and instruments. It was based on Greek and Arabic knowledge and his experience in the **Hundred Years War**. He used opium and henbane to dull pain. In 1368, he tried to separate the surgeons from the lower-class barbers by forming a work association called the **Guild of Surgeons with the City of London**.

Potential exam questions:

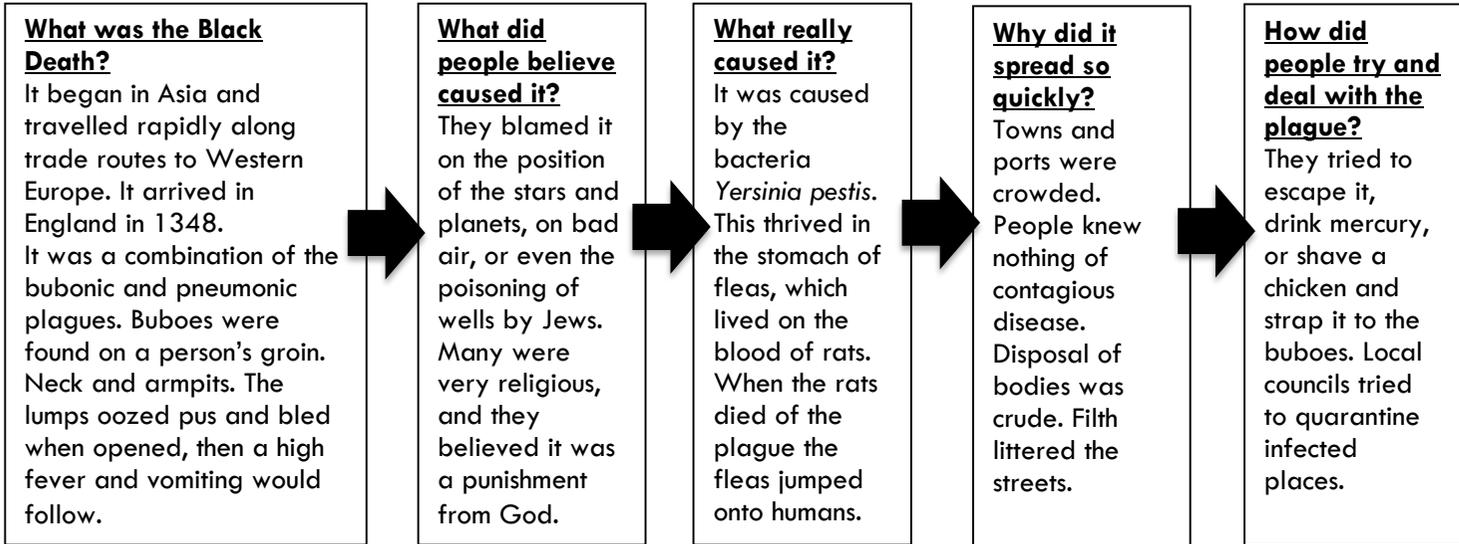
- Q2: Explain the significance of John of Arderne in the development of surgery. (8)
- Q3: Compare surgery in the Middle Ages with surgery at the time of Vesalius. In what ways were they similar? (8)
- Q1: How useful is Source A to a historian studying surgery in the Middle Ages? (8 marks)



Source A This chart gave details about when each part of the body was affected by the planets and stars.

Public health in Medieval town	Public health in a Medieval monastery
<ul style="list-style-type: none"> • Most people got their water from springs, wells or rivers. • Some towns had elaborate systems built by the Romans to supply water, which still worked well. • As towns grew, the existing systems could not cope with the increased demand for water. • Many town dwellers also used rivers and streams to remove their sewage. Sometimes sewage was just thrown into the streets along with other household rubbish. • Most towns had privies with cesspits underneath where sewage was collected. Cesspits would be dug out by gong farmers. • Towns were generally dirty places. The streets would become muddy if it rained. The streets were often littered with waste. • People had no knowledge of germs and their link to disease and infection. They believed disease was spread by 'bad air' so they were keen to remove unpleasant smells. • Town councils tried to pass various laws to keep the environment clean. For example, in 1371 the London mayors prohibited the killing of large animals within the city walls. 	<ul style="list-style-type: none"> • They were often isolated, out of the way, but still near rivers. They would redirect rivers for a reliable supply. • Monasteries had an elaborate system of pipes to deliver water to wash basins. Filtering systems were installed to remove impurities. • Most monasteries had excellent facilities for washing. This was done in the lavatorium, where waste water could be emptied into a river. • They had toilets, or privies. The toilets were emptied into a pit, from which the waste could be dug out and carted away as manure. • Monks had religious routines of cleanliness. • Monasteries had bathhouses, which connected to the drainage systems. • The Benedictine monks washed their clothes regularly, as well as their heads, faces and feet. • Monasteries and abbeys were wealthy, this wealth allowed monks to build good sanitation facilities. • The isolation helped to protect the monks from the worst of the epidemics such as the Plague.

Consequences of poor public health - The Black Death



What impact did the Black Death have on Britain?

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The Black Death had a huge impact on society. **It killed at least a third of the population** between 1338 and 1350. Older age groups were more easily affected and experienced a higher number of deaths.

- Food was left unharvested and it rotted in the fields; village farm animals were unattended and escaped into forests.
- Whole villages were wiped out by the plague, but those who survived often faced starvation.
- Towns and cities too faced food shortages, as nearby villages could not provide them enough food.
- Medieval lords who lost their farmer peasants to the disease chaged to sheep farmin, since this required less workers.
- Food prices went up which created more hardship.
- Peasants demanded higher wages, moved villages and this upset the feudal system. To curb the peasants roaming the countryside looking for better pay, the government introduced the Statute of Labourers in 1351 which kept wages at prices paid before the Black Death. This caused anger among the peasants.
- Opinion on the Catholic Church changed: Churchmen were criticised for cowardice for desertng their villages. The reputation of the church was damaged.

Potential Exam Questions:

- Q1: How useful is Source A to a historian studying the impact of the Black Death on Britain? Use Source A and your own contextual knowledge (8 marks).
- Q2: Explain the significance of the Black Death for public health in Britain. (8)
- **Q3: Compare the Great Plague of 1665 and the Black Death of 1348. How were they similar? (8)**
- Q3: Compare public health in a monastery with public health in a Medieval town. How were they similar? (8)

Source A - From the Statute of Labourers, 1351

No peasants could be paid more than the wages paid in 1346. No lord or master should offer more wages than paid in 1346. No peasants could leave the village they belonged to.

Compare the Great Plague of 1665 and the Black Death of 1348. How were they similar? (8)

- Doctors and people were clueless about what caused both. They were believed to be a punishment from God; bad air or the position of the stars and planets.
- Treatments and remedies were guess work and had no effect. Doctors had no cure for the disease.
Black Death - They tried to escape it, drink mercury, or shave a chicken and strap it to the buboes. Local councils tried to quarantine infected places.
The Great Plague – bled with leeches, sniffed a sponge soaking in vinegar. Frogs, snakes and scorpions were used to draw out the poison.
- Bodies of the victims were buried in mass plague pits.
- Local councils tried to quarantine infected places. This was used more effectively during the Great plague – plague victims were locked away; watchmen stood on guard to make sure they did not leave and spread the disease.



The beginnings of change: The Renaissance 1450-1800

What was the Renaissance?

The Renaissance began in Italy, wealthy businessmen and traders were interested in the world of the ancient Greeks and Romans. They paid educated scholars and artists to investigate and translate the works for them. Those who studied the ancient books were inspired and delighted by them. However, they also became critical of the many versions of the old texts. **People began to ask questions, find evidence for themselves and experiment with new ideas.**

Many said the experience of the Renaissance was like a 'rebirth' of learning. The word Renaissance means 'rebirth' in Italian. The Renaissance changed the way people viewed their lives. People started to believe that being educated in art, music and literature could make life better for everyone.

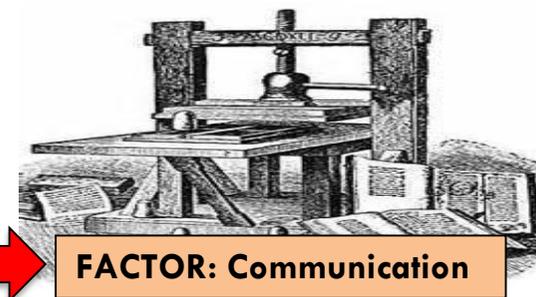


The Renaissance was a cultural movement where people questioned accepted truths, searched for evidence, and experimented with new ideas.

For centuries, people accepted that the church had all the answers to their questions. Now, many educated people wanted to find out for themselves and work out what the right answers were.

Scientists experimented; traders explored new lands and made more accurate maps; doctors tried different treatments; and artists began using new methods to make their paintings more lifelike than ever.

Before the Renaissance, books were rare and expensive because they had to be copied out slowly by hand. This meant that knowledge was restricted to a few people who could afford or had access to books. A new invention made in 1451, the printing press, allowed books to be reproduced far more quickly and accurately, more people could read the ancient books as well as books about new discoveries.



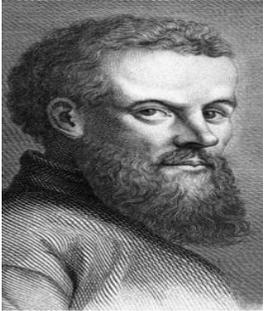
FACTOR: Communication

Impact of the Renaissance on Britain

FACTOR: Science and Technology

New lands	New inventions	New ideas spread quickly	New style of art	New learning
The discovery of the Americas in the late 1400s showed the value of finding new things and making discoveries. New medicines and foods were brought back.	New technology such as gunpowder meant injured soldiers got new types of wounds. Scientific methods of learning were used to find better ways to treat patients.	The printing press allowed new ideas to spread quickly around Europe.	A new desire to show the human form in more realistic detail led artists to study the body more carefully.	A scientific method of learning began. This involved observation and experimentation. Soon scholars began to question established beliefs.

Andreas Vesalius



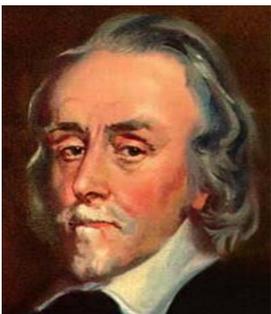
Andreas Vesalius was born in Brussels, to a medical family. He is often referred to as The Founder of Human Anatomy. Vesalius went to work in Padua at the university. Here he carried out dissections, which was very dangerous, especially as it was so close to the Pope. The university made his work easier as it encouraged thinking and new ideas, rather than just the regurgitation of Galen's old theories. During his time at Padua he made detailed notes and drawings and encouraged his student to learn by showing them dissections. The technological advancement of the printing press helped Vesalius to make his work well known. His book "The Fabrication of the Human Body" was a major breakthrough in medical history. It contained highly - skilled drawings of all parts of the human body and offer up new suggestions on how to treat disease. It also highlighted many errors in previous theories, such as Galen's that had been in place in Europe for hundreds of years. Even though his book was ground-breaking and very clearly correct as his theories were backed up by detailed drawings, many chose to dispute or even discard his theories. They were still convinced Galen was right.

Ambroise Pare



Ambroise Paré was a French surgeon, the official royal surgeon for kings Henry II, Francis II, Charles IX and Henry III, is considered by some as one of the fathers of surgery. He was a leader in surgical techniques, especially the treatment of wounds. Paré was born in Bourg-Hersent, France. Pare was a major figure of surgery in the 16th century. After his apprenticeship at the Hôtel-Dieu in Paris between 1533 and 1536, he soon became a military surgeon during the campaigns in Italy. In this occasion, he discovered a remedy against the pain of the wounded by firearms. Much of Paré's experience with wounds was acquired on the battlefield. Ambroise Paré substituted egg yolk, oil of roses, and turpentine for boiling oil after a twist of fate where all the boiling oil ran out. He then used the ancient roman turpentine remedy and discovered that it was far more efficient at healing the wounds than the boiling oil. He also introduced the ligature of arteries instead of cauterisation during amputation. Although ligatures often spread infection it cannot be denied that this was an important breakthrough in surgical practice.

William Harvey



William Harvey was one of the most important doctors of the Renaissance period, it was him that discovered how the heart pumps blood round the body. Harvey showed that blood flows around the body and that it is carried away from the heart in the arteries and returns to the heart and veins. He proved that blood is not burnt up and replaced as previously believed, but the heart pumps blood round and round the body. However, before Harvey discovered this, many doctors still believed in Galen's idea that blood was constantly being made in the liver to replace blood that was burnt up in the body, in the same way that a fire burnt up wood. Some doctors thought that this idea was wrong but no one else had been able to find out how exactly how the blood did move around the body. Also, Harvey published two ground breaking books: 'An Anatomically Study of the motion of the Heart and of the Blood in animals' explaining how blood was pumped from the heart round the body and 'Essays on the Generation of Animals' which is considered the basis for modern embryology.

Vesalius

Vesalius' wrote a textbook *The Fabric of the Human Body* which became popular all over Europe. Vesalius' work was also used in a book called *Compendiosa* which became the main textbook for trainee surgeons in London. **Vesalius' work inspired many English surgeons.** Vesalius' work overturned centuries of belief that Galen's ideas on the human body had been correct.

Although, his work did not lead directly to any cures, it helped create better treatments in the future as others followed his ideas on the body to find out more about specific parts of the human body such as the heart or liver.

Pare

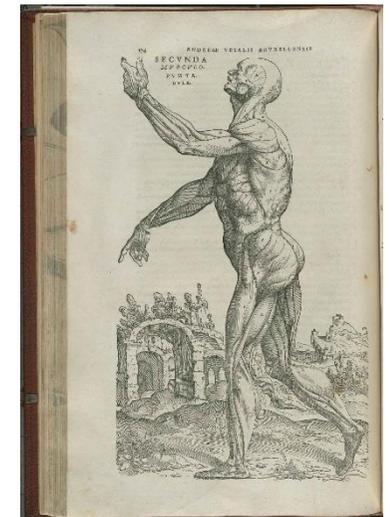
Pare admired Vesalius and in his famous book *Works on Surgery* he included lots of Vesalius's illustrations on anatomy. Pare translated Vesalius' work from Latin into French and meant that more people could read this information. **Paré's work was translated into English and in 1591 his book was given to the Barber-Surgeon's library.** It was not printed in English until 1634. Pare promoted the use of ligatures after amputation to stop blood loss and used a new method of healing gunshot wounds (rose oil, egg whites and turpentine). **The most famous English surgeon of the 16th century, William Clowes, followed Paré's new ideas.** Clowes often referred to Pare as the 'famous surgeon master'. Clowes also gained much of his experience on the battlefield and in 1558 Clowes published his own work called *Proved Practice* in which he praised Paré's influence on him.

Harvey

Discovered that blood circulated around the body When Harvey published his book *De Motu Cordis* in 1628 his critics claimed he was mad to suggest that blood circulated around the body and many ignored him. Others disliked the fact that he went against Galen. Despite much criticism many did follow his ideas, but it took 50 years before it was taught in university. **Harvey's discovery was not immediately useful as more had to be discovered before his theories could be put to use.** For example, doctors could not replace or give blood transfusions until 1901 when they understood blood groups. However, **it was a vital stage in the development of surgery and the diagnosis of illness as many modern treatments would not work unless blood circulation was understood.** For example, blood tests and heart transplants couldn't happen without this knowledge.

Potential exam questions:

- Q2: Explain the significance of the work of Vesalius/Harvey in the development of medicine (8)
- Q2: Explain the significance of Pare in the development of surgery (8)
- Q1: How useful is Source A to a historian studying understanding of surgery and anatomy in the Renaissance? (8)
- Q3: Compare medieval anatomy with Renaissance anatomy. How were they similar? (8)
- Q4: Has the role of the individual been the main factor in the development of medicine in Britain since Medieval times? Explain your answer with reference to individuals and other factors. (16+4)



Source A: An image from the book published by Vesalius in the Renaissance

How scientific was 17th and 18th Century medicine in Britain?

Many doctors in Britain didn't follow the new Renaissance ideas of science and rigorous testing. **Ancient unscientific beliefs such as the four humours were still used to treat everyone from ordinary people to the king.** Bloodletting continued to be a common treatment. Herbal remedies remained popular. The printing press helped ordinary people to collect books on herbal remedies.

Medical treatment for ordinary people still depended on what someone could afford. They could get medical advice from different people.

- Barber-surgeons – poorly trained who could perform small operations.
- Apothecaries – sold medicine and potions but had no medical training.
- Wise women – their treatments relied on superstition, plants and herbs.
- Quacks – travelling salesmen who sold all sorts of medicine and cure-alls.

The new lands brought new medicines such as: Opium from Turkey was used as an anaesthetic and Tobacco from North America was wrongly used to cure many conditions from toothache to plague.



How did doctors deal with the Great Plague?

The Plague returned in 1665 and killed around 100,000 people in London. It also killed thousands in the rest of the country.

Beliefs about its cause remained the same: a punishment from God; the movement of the stars and planets; bad air.

Remedies and treatments had no effect: some patients bled with leeches. People smoked to keep away the bad air. Frog, snakes and scorpions were used to draw out the poison.

Doctors still had no cure: there was some evidence people were beginning to make a strong connection between dirt and disease. As a result, there was a more organised approach to dealing with the plague. Plague victims were quarantined. Watchmen stood on guard to make sure they didn't leave and spread the disease. Red crosses were painted on their doors. Trade between towns stopped and homeowners were ordered to sweep the streets.

It has often been written that the Great Fire of London in 1666 ended the plague: This was not true. The plague declined because the rats gained greater resistance to the disease, so the fleas did not need to find human hosts.



How did hospitals change in the 18th Century?

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FACTOR: Religion

In the 1530s Henry VIII turned England from a Catholic country to a Protestant one. As part of this religious conflict Henry VIII seized the wealth of the rich Catholic monasteries and closed them down. As this is where most of the hospitals were. The king gave money to start hospitals such as St Bartholomew's and St Thomas' in London.

Up to the 17th century hospitals were still places for the sick to rest and to pray. **However, in the 18th century the idea of the modern hospital using modern methods to cure patients began.**

These hospitals were founded and supported by charitable gifts or private people. E.g. Guy's Hospital (1724) was founded by a merchant called Thomas Guy.

In the new hospitals the sick were cared for but also doctors of the future were trained as medical schools were attached to the hospitals.

How were doctors trained in these new hospitals?

Doctors continued to learn through mainly lectures and reading medical texts. New charity hospitals like the one in Edinburgh gave final year students the opportunity to gain experience by following the medical professor through the wards.



Doctors liked to gain an official post at a hospital because it gave them a better reputation and attracted wealthy private patients. The doctor attended the ordinary people for free, it was the fees paid by private patients which were the doctor's main source of income.

The treatments given in hospitals were still primarily based on the four humours approach of bleeding and purging.

The 18th Century saw not only the growth of general hospitals but also specialist types: St Luke's became the second largest hospital for the mentally ill, after Bethlem. Hospitals for sexually transmitted diseases and maternity hospitals were set up.

In 1741, a hospital was founded by Thomas Coram for sickly and poor children. It cared for orphaned children by giving them a clean environment and some simple education.

Between 1720 and 1750, five new general hospitals were added to London's two ancient hospitals and nine more throughout the country.

London's hospitals alone were handling 20,000 patients a year. Compared to 1400, when each of the 470 hospitals in the whole of England had room for only ten patients at most. Attitudes to illness were changing. Illness was no longer seen as a punishment from God.

How much change occurred in Britain due to the Renaissance ideas?

Although the Renaissance had revolutionised ideas and attitudes towards medicine, this had yet to filter down to ordinary everyday medicine and treatments. Treatments remained largely the same as they had been.

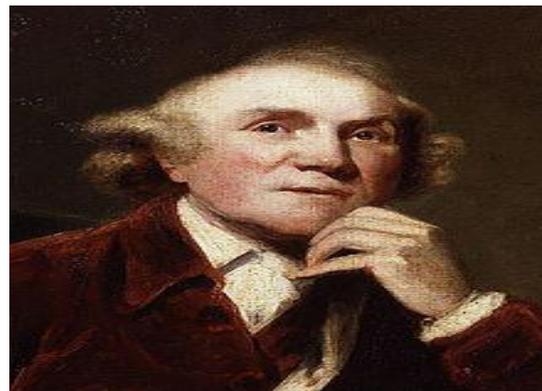
Two Key 18th Century Individuals: John Hunter and Edward Jenner

FACTOR: The Role of the Individual

Name	John Hunter	Edward Jenner	FACTOR: Science and Technology
Biography	<p>Born in Glasgow. In 1728, at the age of 20, he joined his elder brother William in London, who had started an anatomy school. Hunter became an army surgeon in 1760. In 1768, he went to work in St George's Hospital. He spent all of his money on research and his specimen collection. He died of debt and poverty in 1793.</p>	<p>Jenner started as an apprentice to a country surgeon age 13-19. He then went on to study under John Hunter who encouraged him to conduct experiments and test theories. He returned to Gloucestershire in 1772 to become a country doctor. In 1798, he published a book on vaccination.</p>	
Key contributions to medical progress	<p>Hunter was admitted to the Company of Surgeons in 1768 (this was formed in 1745 to separate the skills of barbers and surgeons) he trained hundreds of other surgeons in the scientific method. Edward Jenner was trained by Hunter and became a firm friend.</p> <p>Hunter's writings on his scientific research were widely read and were a major contribution to surgical knowledge. His books showed theoretical knowledge about anatomy that every surgeon needed. His experience in the army contributed to his book <i>Blood inflammation and gunshot wounds</i>: although it was published after his death it finally put to rest the idea that gunshot wounds were poisoned.</p> <p>Hunter collected a huge number of anatomical specimens. In his collection he preserved 3000 stuffed or dried animals, plants, fossils, diseased organs and other body parts.</p> <p>Hunter promoted careful observation and the use of scientific method. He even experimented on himself in 1767 and gave himself gonorrhoea. Unknown to himself the patient also had syphilis. It took him 3 years of the mercury treatment to recover.</p>	<p>Prior to Jenner, doctors attempted to prevent a major killer called Smallpox by the use of inoculation – however, inoculation didn't always work. Inoculation worked by giving people repeated small doses of a disease which allowed them to build up resistance to attacks. Inoculation for small pox was opposed and often people died from the dose they were given, they were also still able to pass the disease on to others.</p> <p>Jenner theorised that cowpox a milder version of smallpox could protect people from smallpox. He decided to test his theory out. In 1796 he conducted an experiment. He inserted cowpox in an 8-year-old boy. Six weeks later he gave the boy a smallpox inoculation: no disease followed. He called this technique vaccination. Jenner tested this theory 16 times over several weeks. None of the patient reacted to the smallpox inoculation which allowed Jenner to conclude that cowpox protected humans from smallpox.</p> <p>Parliament gave Jenner £10,000 to conduct his research in 1802 and by 1853, the British government made smallpox vaccination compulsory.</p>	
Opposition			<p>Jenner published his findings in 1798, but he could not explain how vaccination worked. This made it difficult for others to accept. Many doctors profited from inoculation so didn't like the findings. In the London Smallpox Hospital, William Woodville and George Pearson carried out tests using cowpox, but their equipment was contaminated and one of their patients died so they concluded Jenner was wrong.</p>

Impact of Hunter and Jenner's work on Britain:

- Hunter trained many surgeons including Edward Jenner.
- Hunter was able to make discoveries about the natures of disease, infections, cancer and the circulation of the blood.
- Jenner may not have discovered vaccination, but he made others notice it. Vaccination became an important method of disease prevention.



Possible exam questions:

- Q2: Explain the significance of Jenner's work on vaccination. (8)
- Q3: Compare Medieval anatomy with Renaissance anatomy. How were they similar? (8)
- Q3: Compare the opposition to Lister's antiseptic methods with opposition to Harvey's discovery of the circulation of blood. How are they similar? (8)
- **Q3: Compare the work of Andreas Vesalius and John Hunter. In what ways were they similar? (8)**
- Q1: How useful is Source A to a historian studying vaccination? (8 marks)

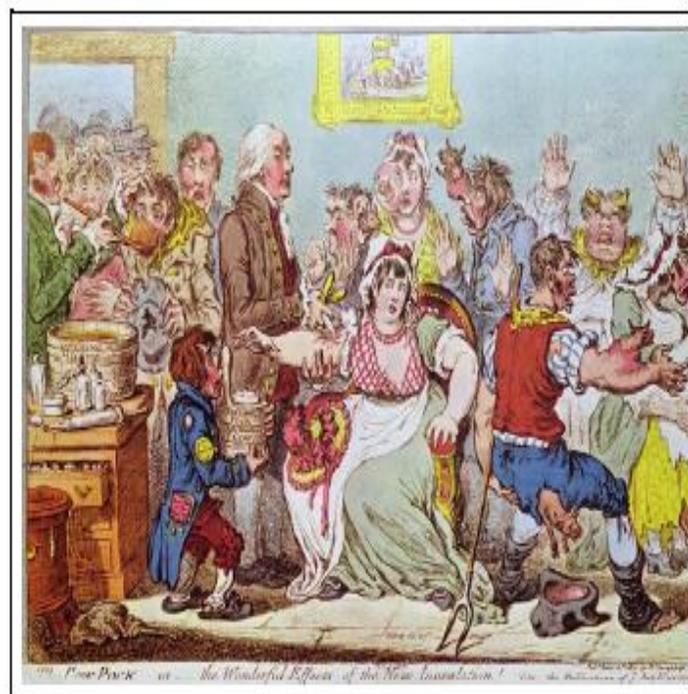


Compare the work of Andreas Vesalius and John Hunter. In what ways were they similar? (8)

- Both used careful observation to know about the anatomy of the human body. Galen used dissection to show that Galen was wrong. Hunter experimented on himself.
- Both produced books that would be widely used to train doctors and surgeons. Vesalius – *The Fabric of the Human Body* (1543). Hunter – *On Venereal Disease* (1786).
- Both inspired English surgeons. Vesalius's books made their way to England and inspired English surgeons. Hunter – admitted to the Company of Surgeons and trained many young surgeons.

Source A A cartoon drawn in 1802 by James Gillray.

It is generally thought to show Edward Jenner giving his patients 'the new inoculation' at St Pancras Hospital in London. However, historians have suggested that the patients are Dr. William Woodville's, who ran the hospital. He was in dispute with Jenner after some of his patients died from Smallpox when he used Jenner's technique.



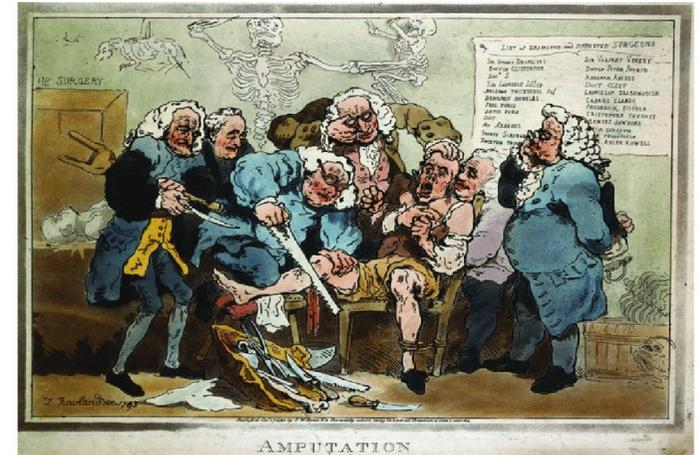
The Age of Revolution: The 19th Century (1800s)

During the 19th century significant developments were made to medical understanding, surgery and public health. Key developments in this century paved the way for modern medicine.

How was pain conquered?

By 1800, the status of surgeons had improved. However, the experience of surgery for a patient was still terrifying. Surgeons still had no effective way of controlling and stopping pain during an operation. Surgeons managed to solve this in the 19th century.

Pain relief was not new: pain-deadening substances were used in the Medieval period. The most important were hashish, mandrake, and opium: while these plant-based chemicals did numb the pain, it was difficult to judge an effective dose from a lethal one. Alcohol made the heart beat faster and bleeding more difficult to stop. Therefore, operations had to be carried out quickly, and they could not carry out complicated internal surgery.



Pain relief:

FACTOR: Science and Technology

FACTOR: The Role of the Individual

FACTOR: Chance

Nitrous Oxide

The first new anaesthetic substance discovered by chemists. In 1795, physician Thomas Beddoes and his young assistant, experimented with inhaling the substance. It made them laugh, but they did not see the medical value. It was not until 1844, that an American dentist, Horace Wells used it to remove one of his own teeth. However, he failed to convince other doctors.

Ether

Around the same time as Nitrous Oxide, William Clark, another American Dentist, experimented with a different chemical. In 1842, he used it for a tooth extraction. This time doctors took notice. British surgeon Robert Liston was keen to first try ether, he used it effectively to amputate a leg in 1846. However, it was difficult to inhale, caused vomiting and was highly flammable.

Chloroform

A safe and effective anaesthetic was still needed. The breakthrough came in 1847 when a Scottish doctor James Simpson, discovered Chloroform. The story goes that Simpson and friends had been testing a number of different substances when somebody knocked over a bottle of Chloroform. Simpson's wife brought them dinner and found them all sleeping peacefully.

Possible Exam Questions:

- Q2: Explain the significance of anaesthetics in the development of surgery in Britain. (8)
- Q3: Compare surgery in the Renaissance with surgery in the 19th century. In what ways were they similar? (8)

Opposition to anaesthetics:

Some surgeons were just not used to using anaesthetics. In the early days of using Chloroform, some patients died due to incorrect doses. However, any objections were overcome by a royal example. John Snow used Chloroform to deliver Queen Victoria's baby in 1853.

How did doctors in Britain find out that germs caused diseases?

FACTOR: The Role of the Individual

FACTOR: Science and Technology

Before the 1860s

Surgeons mistook infections for chemical reactions. They were puzzled why some deep wounds healed quickly but small surface cuts could prove fatal. In the 18th century, scientists believed in spontaneous generation, the idea that microbes could appear as if by magic. They believed the disease caused the microbes.

1861

French chemist Louis Pasteur published his Germ Theory. He was investigating why wine went sour. Through a series of clever experiments involving keeping air out of a swan neck flask he was able to identify the specific microbe responsible for souring the wine. He proved that microbes could be found anywhere, and that bacteria or germs were the real cause of infection.

1864

The first British surgeon to suggest a non-chemical cause of infection was Thomas Wells in 1864. He referred to Louis Pasteur's recent discoveries, and to the idea of using antiseptic substances to destroy microbes.

1870

Doctors in Britain were still reluctant to accept Germ Theory in the late 1860s. Charlton Bastian continued to write many articles that supported spontaneous generation despite evidence of contagious diseases such as the Cattle Plague in 1866. However, in 1870 Bastian came up against John Tyndall. Tyndall publicly defended Pasteur and lectured on both dust and disease using a light to show the microbes.

1865

After realising that operation went well as long as the wound was kept free from infection and reading the work of Pasteur, Joseph Lister pioneered the use of antiseptic surgery. Lister used Carbolic Acid kill bacteria. Lister would use the substance to clean instruments and soak dressings. He even used a Carbolic spray in an attempt to clean the environment. Using this method, Lister reduced mortality rates to 15% from 45. Lister argued that infection came from outside the body. However, he did face opposition from influential men such as Charlton Bastian who championed spontaneous generation.

FACTOR: Communication

1874

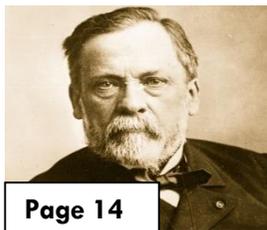
Many British doctors' views changed due to a public health debate about typhoid fever. In 1874, scientist Emanuel Klein announced that he had identified the typhoid microbe. Tyndall immediately criticised spontaneous generation and said that Germ Theory explained typhoid. However, Klein was mistaken.

1876

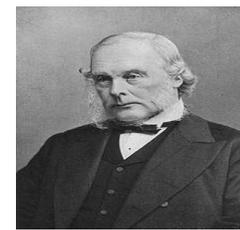
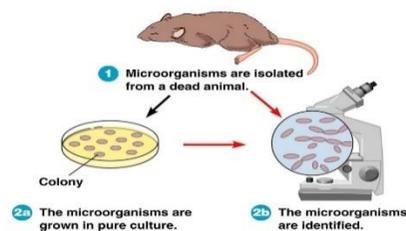
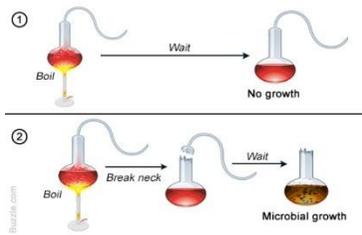
The work of Robert Koch and others after him prove to doctors that Germ Theory could explain human diseases such as typhoid fever. Koch found ways of staining and growing the particular germ he thought was responsible for the disease anthrax. He injected the bacteria responsible into mice making them ill. For the first time, he was able to apply Pasteur's theory to prove that germs caused disease in humans. Koch was also able to eventually able to identify the germs that caused cholera and TB.

1879

William Cheyne, Lister's deputy translated Koch's work into English. He wrote a paper based on Koch's work and explained that some microbes present in healthy tissue and wounds were harmless and did not always produce disease. By the 1880s British doctors accepted Germ Theory.

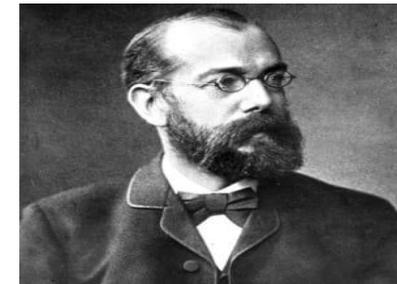
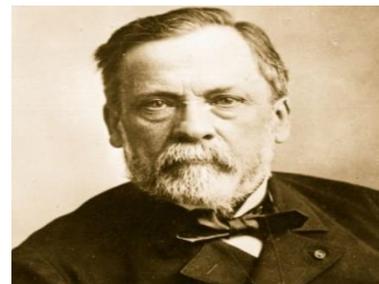


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What impact did the work of Pasteur and Koch have on Britain?

Between them, Pasteur and Koch encouraged a whole new generation of scientists to study deadly diseases and to find ways to prevent them. Many of these discoveries soon spread to Britain. **For example, Joseph Lister introduced the French serum for diphtheria to Britain, and it was widely used after 1895. Within 10 years, the mortality rate in England dropped to less than half.**



Vaccines:

FACTOR: Science and Technology

As more specific disease-causing germs were identified Pasteur and Koch battled to produce vaccines and make the next breakthrough. Alongside teams of chemists both developed a series of new vaccinations:

- 1871 the Franco-Prussia war increased rivalry between Pasteur and Koch. At this time, nations were also keen to defeat diseases to keep their soldiers healthy.
- 1876-81 after Koch's success in identifying the anthrax germ, Pasteur and his team quickly develop vaccines for animal diseases anthrax and cholera.
- 1879 while investigating chicken cholera, by accident Charles Chamberland one of Pasteur's assistants used an old and weakened sample of the disease microbes. The chickens were injected and survived. This proved showed that the weakened microbes built up the chicken's immunity against the stronger ones. This was how vaccines worked.
- 1880-84 Pasteur and his team developed a vaccine for rabies but were reluctant to test it on a person.
- 1882 Koch identified the Tuberculosis germ.
- 1883 Koch identified the cholera germ.
- 1885 Pasteur proved that vaccines worked on humans, as well as animal diseases.
- 1888-90 In France, one of Pasteur's scientists showed that diphtheria produced a toxin. In 1890, in Germany Emil Behring one of Koch's students, showed that weakened diphtheria could be used to produce an antitoxin.



Scientists also tried to fine chemical that would attack germs and cure them. In 1909, Paul Ehrlich (a German doctor part of Koch's team) developed the first chemical cure for a disease. He found that the chemical Salvarsan 606 cured syphilis. He described it as a magic bullet because it targeted the harmful germ and destroyed it without harming the body.

Source A – a cartoon from the 1880s, it shows Koch conquering the bacteria responsible for tuberculosis (TB).

Possible Exam Questions:



- Q1: How useful is Source A to a historian studying the work of Robert Koch? (8 marks)
- Q2: Explain the significance of Germ Theory in the development of medicine (8)
- Q4: Has chance been the main factor in understanding the causes of disease in Britain? Explain with reference chance and other factors (16+4).

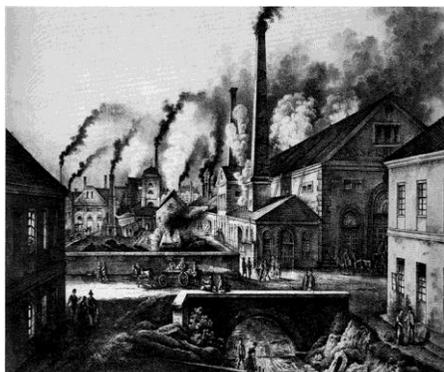
How did public health in Britain improve during the 19th Century?

FACTOR: Government

Public health – the health and wellbeing of ordinary men, women and children. In Britain in the 1800s, this was poor. The average age of death for a working man was about 30. In some places such as Liverpool this was 15. In Manchester, 1/5 children died before their first birthday and 1/3 died before they were five. Despite improved medical knowledge, people's health in general was worse than previous centuries.



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Britain's towns and cities grew very quickly in the first 50 years of the 1800s, and the wealth of the people living in them grew steadily worse. People flocked to the cities to get jobs in the new factories and the promise of a new life. Many new factories were built in the north and midlands of England in the 1800s and needed thousands of workers to operate the machinery that made cloth, pottery, iron and steel. Rows of houses were built quickly, 'back to back' to squeeze as many workers in as possible in each street. The houses were crowded, often with five or more people in one room. In 1847, 40 people were found sharing one room in Liverpool. Few houses had toilets. The best families could manage as a bucket in the corner of the room. Sometimes there was a street toilet and a street water pump – this water would come from the local river or pond and was filthy. There were no rubbish collections or sewers and diseases were common such as **cholera**, typhoid and TB. **In the early 1800s, no one knew how people caught diseases or how to avoid catching them. The government had no clear strategy on how to deal with it.**

Fighting Cholera:

In 1831, a new and frightening disease arrived in Britain: Cholera. In 1831 alone, cholera killed 50,000 people.

Symptoms

Victims were violently sick and suffered from painful diarrhoea; the skin and nails turned black just before the victim fell into a coma and died.

Disposal of the bodies

So many people were dying that cemeteries had to be closed because they were too full. Bodies started to poke through and cause a stench.

What did people think caused it?

Many people believed it was spread by miasma: an infectious mist given off by rotten animals and human waste. The importance of clean water still wasn't understood. The cholera epidemic passed after a few months and life was getting back to normal. **However, more outbreaks occurred in 1837 and 1838. The government decided to act.**

FACTOR: The Role of the Individual

Cholera returns

The government didn't do anything immediately. In the 1800s, many people though politicians had no right to meddle in people's private lives. This was known as **laissez-faire**. Cholera changed their minds. News of another cholera epidemic sweeping across Britain in 1848 and the government decided to act by passing **the Public Health Act 1848**.

The Chadwick Report

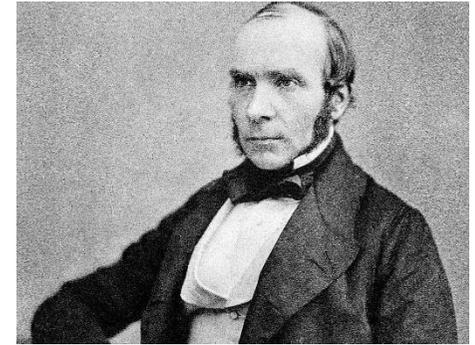
In 1839, an enquiry led by Edwin Chadwick was set up to find out what the living conditions were like all over Britain. The report shocked Britain. It highlighted the need for cleaner streets and a clean water supply. It also showed that the poor weren't responsible for the conditions they were in and the government had to act.

Action at last:

FACTOR: Government

In 1848, 60,000 people died of cholera; 20,000 died of it in 1854. During the 1854 epidemic, a doctor named John Snow made a breakthrough in providing there was a link between cholera and water.

John Snow discovered that cholera was a water-borne disease. This was a remarkable discovery. The government now had a growing batch of evidence about the state of the nation's health within the dirty, overcrowded towns. They even had medical evidence that made a link between Cholera and the water supply. **But the government didn't do much about it, until the 'Great Stink' spurred them into action.**



The Great Stink:

In the summer of 1858, a heatwave caused the filthy River Thames to smell worse than ever. The smell was so bad that the Politicians in the Houses of Parliament demanded to meet somewhere else. Some called it the summer of the 'Great Stink'. The stench from the Thames combined with Dr Snow's evidence about cholera caused such alarm that they turned to a man called Joseph Bazalgette to save the city.

The new sewer system:

Three years earlier Bazalgette had been asked to draw up plans for a network of underground tunnels - or sewers - to intercept all the waste from nearly 1 million houses before it had a chance to flow into the Thames. Bazalgette used gravity and the slope of the river to get the sewers to flow downstream towards the sea.

At Crossness he built a pumping station, where pumps pumped the sewage up to the level of the Thames; at high tide, it was released into the river and taken out to sea.

He built 83 miles of sewers, that removed 420 million gallons of sewage a day. The sewers were started in 1858, finished in 1866 and cholera never returned to London.



Timeline of Public Health Reforms:

- 1842 Chadwick Report
- 1848 First Public Health Act
- 1853 Compulsory vaccination
- 1858 Work on the sewer system begins
- 1866 Sanitary Act – Local councils were now responsible for sewer and street cleaning.
- 1875 Artisans Dwelling Act - Homeowners now responsible for the upkeep of their houses. Local councils also gained the power to buy and demolish slum housing if the housing was not improved.
- 1875 – Second Public Health Act – Councils ordered to cover sewers, supply fresh water and collect rubbish.
- 1875 – Sale of Food and Drugs Act – Introduced guidelines for the sale of food and medicines.

The death of Laissez-Faire:

Parliament went into a flurry of action to improve public health. In 1867, working class men living in towns were given the vote. It was the same people who had been suffering the most from poor living conditions. Political parties realised if they promised to improve conditions in towns, working-class people would vote for them. When the Conservative Party won the general election in 1874 it was largely due to working-class votes. Soon after many new public health reforms were introduced.

What impact did these new public health measures have on Britain?

FACTOR: Government

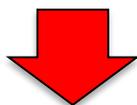
The death rate fell significantly due to these measures. The average age of death rose from 30 to 50, and the total population of the country rose from about 10 million in 1801 to 38 million in 1901. The population increased nearly four times because people were living longer.

Possible Exam Questions:

- Q1: How useful is Source A to a historian studying the development of public health in Britain? (8)
- Q2: Explain the significance of the London Sewer system on public health. (8)
- Q4: Has government been the main factor in improving public health in Britain in the 19th Century? Explain with reference government and other factors (16+4).
- **Q3: Compare a medieval town with early nineteenth-century London. In what ways were they similar? (8)**
- **Q3: Compare cholera with the Black Death. In what ways were they similar? (8)**



Source A – A punch cartoon commenting on the state of the River Thames in 1858: ‘Father Thames’ introduces his children, Diphtheria, Scrofula and Cholera, to London.



Compare a medieval town with early nineteenth-century London. In what ways were they similar? (8)

- The conditions of both allowed for the spread of disease – medieval towns allowed the Black Death to spread quickly. The condition in London were so bad that Cholera came back time and time again.
- Councils and government were not keen on taking responsibility for the condition of towns – medieval councillors knew that improvements would be expensive and did not want to become unpopular by increasing taxes to fund these improvements. In London, parliament followed a policy of laissez-faire which meant they did not believe it was their responsibility to keep people clean. Plus, some MPs made vast fortunes from rents in the slums.

Compare cholera with the Black Death. In what ways were they similar? (8)

- In both cases the causes of the disease were misunderstood – people in medieval Britain believed the Black death was caused by the position of the stars and the planets; Jews; a punishment from God or bad air. People in 19th Century London believed Cholera was caused by miasma: an infectious mist given off by rotting animals, rubbish and human waste.
- Both diseases caused a high death toll – the Black Death led to 1.5 million people dying in Britain which led to food shortages and starvation. Cholera killed 50,000 people in its first outbreak in 1831, it returned in subsequent years and killed 80,000 more.

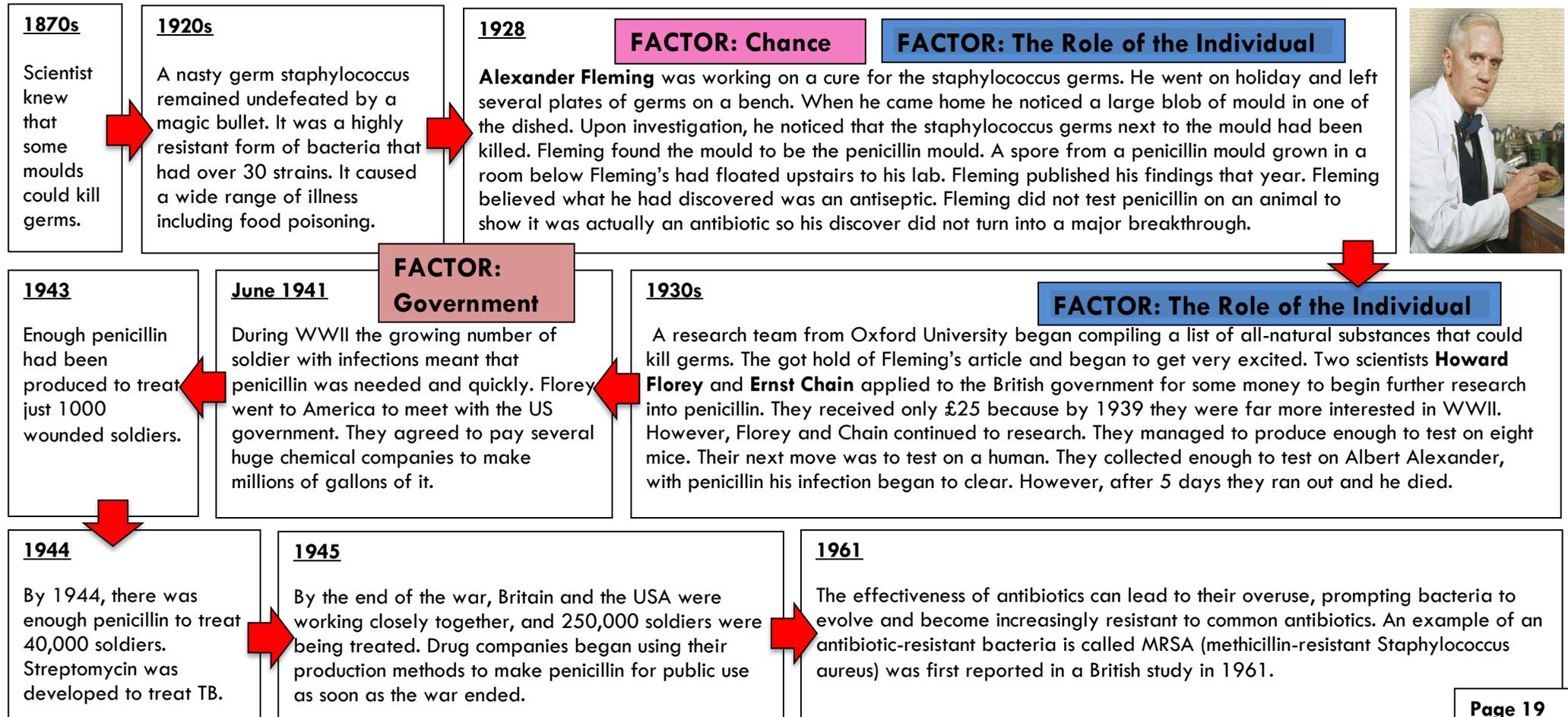
Modern 1900- Present Day

The birth of Antibiotics

If you have had an infection, you probably would have been given a drug called penicillin, which was the world's first antibiotic. This led to the development of the pharmaceutical industry. An antiseptic is a chemical that is mostly used outside the body, on the skin and on objects to kill germs. An antibiotic is a medicine that can be digested or injected into the body and kills certain germs as it travels around the body. **Penicillin is an antibiotic.**

Prevention vs Cure: Knowledge of disease had increased greatly. Doctors and scientists had started to identify which bacteria caused which disease, so a search began to find ways of preventing diseases by using vaccination or curing diseases with chemicals. These chemicals were called magic bullets because they targeted the disease without harming the body. Paul Ehrlich discovered a chemical cure for syphilis in 1909.

The discovery of penicillin:



The impact of Penicillin on Britain:

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It has been estimated that, during the Second World War, around 15 percent of wounded British and American soldiers would have died without being given penicillin to fight their infections. Also, thousands of injured soldiers returned to service much quicker than they would have done without penicillin treatment. After the war penicillin became available for doctors to use as a means of prevention and cure for their patients. It was classified as an antibiotic and has gone on to save the lives of millions of people.



What key development to drugs and treatments have been made after 1945?

FACTOR: Science and Technology

Body and disease detection	Surgery	Treatment
<p>1951 – development of a human made hormone that prevents women ovulating. This leads to the first contraceptive pill.</p> <p>1953 – American Leroy Stevens discovers stem cells.</p> <p>1953 – Scientists Francis Crick and James Watson discover DNA; the understanding of DNA leads to developments such as gene therapy. Genetic screening and genetic engineering.</p> <p>1973 – British scientist Geoff Hounsfield invents the CAT scanner which used X-ray images to build up a 3D image.</p> <p>1975 – Endoscopes developed.</p> <p>1987 – MRI scanning is used to monitor brain activity.</p> <p>1990 – Human Genome Project aimed to decode all the genes in the human body.</p>	<p>1950 – Canadian surgeon William Bigelow preforms the first open heart surgery.</p> <p>1952 – First miniature hearing aid is produced. First kidney transplant is carried out. The first in the UK is 1960.</p> <p>1960 – First pacemaker is fitted in the UK. A mechanical device that maintains a regular heartbeat.</p> <p>1968 – First British heart transplant.</p> <p>1986 – British woman becomes the first heart, lung and liver transplant patient.</p> <p>2008 – First full-face transplant.</p>	<p>1948 – Free vaccine for TB.</p> <p>1954 – Free vaccine for diphtheria, whooping cough and tetanus.</p> <p>1955 – Free vaccine for polio.</p> <p>1970 – British scientist Roy Calne develops a drug to prevent the body from rejecting transplanted organs.</p> <p>1978 – Doctors use IVF fertility treatment to help childless women become pregnant.</p> <p>2006 – First HPV -anti cancer vaccine approved.</p>

Why did drugs and treatments develop greatly in the late 20th Century?

<p>Technology</p> <p>New techniques such as keyhole surgery and MRI scanning help to identify illness. DNA helps to identify specific genes involved in diseases.</p>	<p>War</p> <p>Two world wars meant the government spent a fortune on testing the latest surgical techniques and drugs.</p>	<p>Government</p> <p>Governments spend far more money on research and care than ever before. E.g. The British government has a huge breast and cervical cancer screening programme.</p>	<p>Communication</p> <p>New ideas spread rapidly due to the use of TV and the internet. Advertisements is used to make people aware of health risks associated with smoking etc.</p>	<p>Individual character</p> <p>The 20th Century saw some geniuses in action: Crick and Watson, and Geoff Hounsfield in Britain.</p>	<p>Change in attitude</p> <p>Modern politicians have realised that one of their main priorities is to help and protect the people they serve. The British government has introduced 'Healthy Eating Standards'.</p>
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What impact did war have on surgery and health?

FACTOR: War

Blood transfusions

Karl Landsteiner discovered blood groups, this helped doctors to work out that transfusions only worked with the same blood type. 1914, Albert Hustin discovered that sodium and glucose stopped blood clotting on contact with air. This meant that blood could be bottled.

Shell Shock

War took a mental strain on many soldiers. Some soldiers had panic attacks or were unable to speak. By the end of the war, shell shock was recognised as a disorder instead of cowardice. Today the condition is known as PTSD.

Blood transfusions

Advances in storing blood now meant that it could be fresh and stored for longer. This led to the British National Blood Transfusion Service opening 1938. Large blood banks were developed in the USA and Britain.

Heart Surgery

Heart surgery progressed during WWII. American army surgeon Dwight Harken, stationed in London cut into beating hearts and used his hands to remove shrapnel.

Diet

Food shortages meant that the government encourages people to grow their own food. This improved people's diets.

X-rays

X-rays were discovered in 1895. During WWI mobile x-ray machines were used near battlefields to find bullets and pieces of shrapnel inside the soldier's body without cutting them open.



Plastic Surgery

New drugs such as penicillin were used to prevent infection when treating pilots with horrific facial injuries. Archibald McIndoe's work on reconstructing damaged faces and hands was respected all over the world.

Plastic Surgery

During WWI Harold Gillies a British London-based army doctor developed plastic surgery. He transplanted skin and treated men suffering from facial wounds. Gillies and his colleagues treated over 5,000 servicemen between 1917 and 1921.

Infection

Battlefields were dirty, and gangrene was a common infection. Through trial and error surgeons worked out that the best way to prevent gangrene was to cut away the flesh and soak with a salty solution.

Broken bones

New techniques to set broken bones were developed. The Army Leg Splint elevated and extended the broken leg. This helped the bones knit together more securely.

The National Health Service

The government increased its involvement in medical care. After the war people started to think about how best to organise health care. In 1942, William Beveridge proposed a free National Health Service the NHS.

Hygiene and Disease

A national immunisation programme against diphtheria was launched. People were warned against the dangers of poor hygiene.

Drug Development

Penicillin the first antibiotic was developed. By 1944, enough penicillin was produced to treat all the Allied forces in Europe.

Possible Exam Questions:

- Q4: Has war been the main factor leading to improvements in surgery? (16+4)
- Q2: Explain the significance of WWI in the development of surgery? (8)

Improved anaesthetics meant that patients were unconscious for longer so complicated operations could be carried out.

- Better antiseptics increased the success rate of difficult operations because they cut down the chances of a deadly infection.
- When transplant surgery became more common, new drugs helped prevent a patient's body from rejecting the new organ.
- **Keyhole surgery**, using small fibre optic cameras linked to computers, meant surgeons could perform operations through very small cuts.
- **Microsurgery** allowed surgeons to magnify the areas they were working on, so they could re-join nerves and blood vessels – allowing feeling to be returned to damaged limbs.
- **Radiation therapy (radiotherapy)** has been used to treat cancer and other diseases for over 100 years. Radiation therapy involves the use of high-energy radiation to shrink tumors and kill cancer cells.
- **Lasers**, using lasers instead of a scalpel became popular. The laser was first used in an eye operation in 1987. Lasers are used to unblock arteries, remove tumors and ulcers and control bleeding.



Alternative Medicine

Doctors are still not able to cure some diseases such as viruses like AIDS and the common cold, cancer although treatable depending on the type – is still a major killer. As a result, some people turn to alternative therapies to find ways of improving their health and treating their illnesses.

<p>Aromatherapy</p> <p>Using essential oils from flowers, fruits, roots and leaves. These are inhaled or massaged into the skin. The scents stimulate parts of the brain which promote healing. When massaged it passes into the blood stream.</p>	<p>Hypnotherapy</p> <p>A therapist hypnotises a patient. When totally relaxed the patient can be relieved of stress, allergies or even addiction.</p>
<p>Homeopathy</p> <p>Patients take a medicine such as a plant, animal or mineral soaked in alcohol which causes similar symptoms to the illness they suffer from.</p>	<p>Acupuncture</p> <p>Fine needles are placed at key points around the body. The needles are said to release blocked energy and allow energy to flow again.</p>

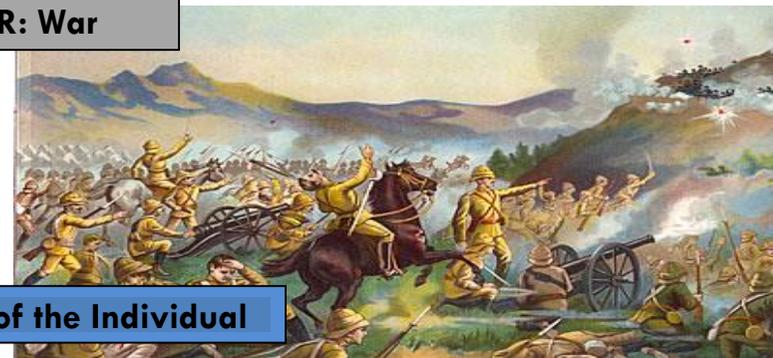
In recent years, there has been a greater emphasis placed on prevention rather than cure. People are learning that regular exercise is very important for health; and that a good diet which avoids sugary, fatty foods can help prevent some 21st Century's biggest killers, such as obesity and heart disease. There is now a lot of emphasis on making lifestyle choices and publicising the dangers of tobacco and misuse of alcohol and drugs.



Why did the government try to improve the nation's health after 1900?

FACTOR: War

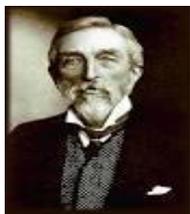
Before WWII and II Britain fought a war in southern Africa called the Boer War (1899-1902). Army chiefs were alarmed that 40 out of every 100 men who volunteered were unfit to be soldiers. The government was shocked, so it set up a special committee. This committee found that people were failing to get into the army because they were leading such unhealthy lives.



Why were reforms introduced to help children and the old?

FACTOR: The Role of the Individual

Name: Charles Booth
Title and date of Study/Report: Life and Labour of the People of London (1890)
Area of Study: London
Key findings: 30% of Londoners live below the 'poverty line'. Living below the 'poverty line' meant that people could not afford to buy food, clothes and shelter.



Name: Seebohm Rowntree
Title and date of Study/Report: Poverty: A study of Town Life (1901)
Area of Study: York
Key findings: 28% of the population did not have the minimum amount of money to live on at some time in their life.



In 1900, despite the wealth of Britain, there were huge numbers of poor people. The extent of the problem of poverty was highlighted in the reports of Charles Booth and Seebohm Rowntree.

These reports combined with the Boer War highlighted the fact poverty and poor health had become one of the big issues of the time. Some politicians, including many from the Liberal Party believed that direct action from the government was the way to improve the public health, welfare and productivity of the nation.

In 1906, the Liberal Party won the general election and set to work introducing reforms.

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The Liberal Social Reforms:

FACTOR: Government

The School Meals Act (1906) Allowed local councils to provide school meals, with poor children getting a free meal. By 1914, over 158,000 children were having a free school meal every day.	The Children's and Young Person's Act (1908) Made children into protected persons, which meant that parents were breaking the law if they neglected their children.	The National Insurance Act (1911) Introduced unemployment benefit, free medical treatment and sickness pay.
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Other social reforms:

- The first job centres were built.
- The building of overcrowding back to back housing was banned.
- In 1918, local councils had to provide healthcare visitors, clinics for pregnant women and day nurseries.
- 1919, councils began to build new houses for poorer families.
- 1930, a huge slum clearance programme began. This cleared away the breeding ground for disease.

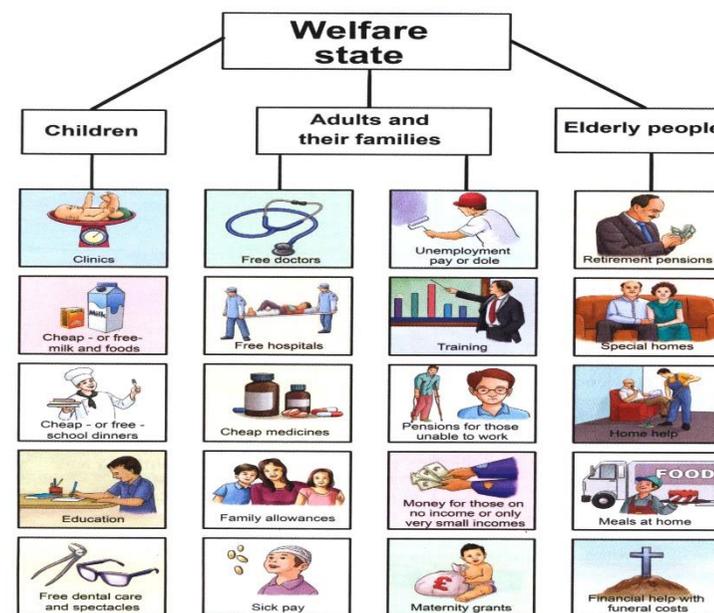
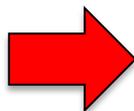
The birth of the Welfare State:

FACTOR: Government

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The welfare state is a system by the government that aims to help those in need. Mainly, the old, the sick, the unemployed and children.

Today we take the things in this diagram for granted. However, they haven't always existed. Before the 20th Century the most vulnerable people in society survived on help from charities and organisations such as the Salvation Army. Those in absolute poverty ended up in the workhouse. The death and destruction of the two world wars had a major impact on attitudes. The people of Britain wanted a better future.



Sir William Beveridge:

In 1942 Sir William Beveridge wrote the Beveridge Report. This reported on the state of health of people in Britain. He said that everyone in Britain had the right to be free of the five giants:

Disease, want (need), ignorance, idleness, squalor (poor living conditions)

This report made suggestions on ways to improve the quality of life. It said that the government should take charge of social security from 'the cradle to the grave.'



The Labour government promised to follow this report and was swiftly voted into power against the Conservative government led by Winston Churchill.

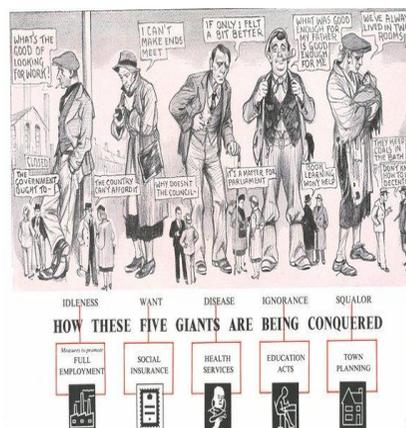
FACTOR: The Role of the Individual

The NHS

The Labour government led by Clement Atlee keep their promise. Within a few years they put many of the Beveridge reforms in place. These included the establishment of the **National Health Service (NHS) in 1948**.

Opposition to the NHS

Many doctors did not want to become employees of the government and hospital consultants wanted to continue to charge private patients for treatment. A survey of GPs showed that 64% were against the NHS as they wanted the freedom to treat patients privately. The British Medical Association organised a fierce campaign of resistance against Bevan. The Health Minister, Aneurin Bevan, finally got the cooperation of doctors when he promised new hospitals and equipment which was badly needed. He also agreed to allow doctors to treat private as well as NHS patients. For their work for the NHS Doctors would get a salary rather than be paid per patient or treatment.



NHS Fact File



When was the NHS set up?	1948
Who was the minister of health appointed to set up the NHS?	Aneurin Bevan
What did the NHS allow all people to do?	Everyone could get free medical treatment and medicines.
How was the NHS paid for?	All workers had to pay for the NHS through taxation.
What parts of the NHS did not remain free of charge?	Prescriptions and dental treatment

1. The demand for the types of care provided by the NHS.

As soon as it started there were 30 million people who registered with a doctor. The poor could go to a doctor, get treatment and not worry about the cost. Millions of prescriptions were written each year. The rich also used the NHS. There were few private patients who still wanted to pay for treatment or hospital care: though there are still some areas in which people do opt, in relatively large numbers, to pay for private health care. The types of services offered by the NHS is vast, covering all manner of health issues from pregnancy through to death.

2. The treatment that the NHS gives patients.

Open to everyone. More surgery is done. There are better anaesthetics so there is more complicated surgery. There are heart transplants. Patients are treated for cancer with surgery or chemotherapy. There are hip replacements. Childless couples can get fertility treatment. Accident and emergency departments treat millions of patients. Children are vaccinated against diseases like TB and measles. A criticism of the treatment that the NHS gives is that in some cases the waiting time for the treatment is too long.

3. Health education.

There are campaigns about the risks from smoking. Fewer people smoke now than in the past. People are warned about alcohol abuse. The government uses the NHS to spread ideas about the importance of a healthy diet and regular exercise. As a result of these people are living longer. Life expectancy is around 80 years. This type of education includes health visitors, education packs for schools and for use in surgeries and public information films.

4. Women's health.

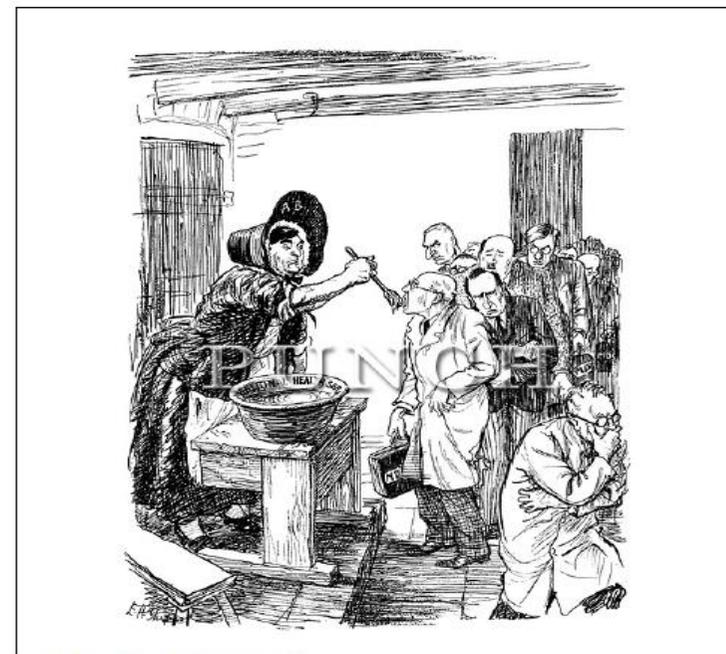
Women now visit the doctor more often. They visit the doctor more than men do. Before the NHS they did not go as often as men (they did not have health insurance). There are screening programmes for breast cancer and cervical cancer.

Possible Exam Questions:

- Q1: How useful is Source A to a historian studying the creation of the NHS? (8)
- Q2: Explain the significance of the reforms implemented by the Liberal government in the 20th century. (8)
- Q3: Compare the impact of the Liberal reforms 1906-18 to the creation of the NHS 1948. In what ways were they similar? (8)



Source A A cartoon from the satirical* magazine 'Punch', 1948. It shows the Minister for Health, Aneurin Bevan giving doctors their NHS medicine. The title of the cartoon was, 'It still tastes awful'.



*Satirical = critical and humorous