

Chapter 8 Health and the people: c1000 to the present day

8.1A Key features of British medicine in the Middle Ages

The cause of illness was unknown

- Doctors (at that time called **physicians**) lacked the scientific knowledge required to understand the causes of disease.
- Medical training was to read Church-approved texts such as Galen.

Supernatural beliefs dominated treatments

- The **Doctrine of Signatures** was followed. It taught that God had the power to create illness and guided doctors on treatments.
- Doctors used **zodiac charts** to decide treatment and when to operate.

Some natural treatments were used

- Doctors and women healers had a good knowledge of how to use herbs to treat illnesses. For example with balms made of herbs and honey.
- Breathing problems or eye **infections** were treated with such balms.
- Doctors used **urine charts** to diagnose illness.

8.1B Main influences on British medicine in the Middle Ages

Hippocrates greatly influenced diagnosis and treatment of illness

- Hippocrates (460–370BC) taught that **clinical observation** (examining and observing your patient and keeping detailed records) was very important. It still underpins medicine today.
- His **Theory of Four Humours** said that the body consisted of four humours (blood, phlegm, black bile and yellow bile) that had to be balanced for good health.
- Many doctors followed this theory. It influenced medicine until the 1800s.
- Bleeding** was used to prevent or treat illness. It involved opening a vein or applying leeches to draw blood. It was used to balance humours. Monks were bled up to eight times a year.
- The Hippocratic collection of books was used to train doctors for hundreds of years. They were significant as they provided the first detailed account of symptoms and treatments.

Galen's ideas dominated medical training and treatments through to the 1800s

- Galen (AD130–c.210) built on the Theory of the Four Humours.
- To learn about human **anatomy**, Galen **dissected** animals. As a result he made errors. His errors were accepted because the Church banned people questioning his work.
- The Church liked Galen's work because it supported the **design theory** (that God designed humans). Galen called God 'the creator'.

REVISED

Key point

Lack of scientific knowledge and the influence of the Roman Catholic Church during the Middle Ages meant that religious ideas dominated British medicine.

TIP

You will find that events in this course are sometimes more significant in later periods than they were at the time. Galen influenced treatments in Britain right up to the 1800s. Hippocratic methods still influence medical ideas today.



Test yourself

- Provide three examples of lack of scientific knowledge limiting progress.
- Describe one difference between Islamic and British medicine.
- List three influences on British medicine.

The Church played a significant role in medicine

- Christianity taught that God sent illness as punishment for sinful behaviour. To treat illness, people had to repent their sins. As a result, prayer was a popular treatment.
- The Church controlled the universities where doctors trained. Teaching was based on ancient texts written by Hippocrates (c129–c210) and Galen (c460–c370BCE).
- The Church banned medical research and human dissection. Roger Bacon was sent to prison by Church leaders for advocating scientific observation.

Medieval hospitals were small and mainly a place for people to rest and recover from illness

- Hospitals were linked to monasteries or nunneries.
- There were no doctors. Monks and nuns provided nursing care and mainly relied on prayer and herbal treatments.
- Hospital wards had altars where prayers were said regularly.

Islamic medicine and training was significantly more advanced than the Christian West

- Islamic doctors wrote medical encyclopaedias. Their ideas were spread to Britain by crusaders.
- Islamic philosopher and doctor, Avicenna, wrote the *Canon of Medicine*. It remained an important text for medical students until the 1700s.
- Islamic hospitals treated patients and also trained doctors.

Warfare helped surgeons improve their skills

- Improved skill in sealing wounds. Quicker **amputations**.
- New tools, including the arrow cup (designed to remove an arrow-head from the body without causing further damage).
- Improved ointments (for example, John Arderne's painkiller).
- Sharing through manuals or diagrams such as the 'wound man'.



Support or challenge?

Question 4 of your exam will ask you to explain the role of factors. Read this statement about the role of religion.

The Church prevented medical progress in the Middle Ages.

Decide whether each piece of evidence below supports or challenges the statement. The first has been done for you.

Task: add at least one extra piece of evidence for each side.

Evidence	Support	Challenge
The Church established universities that trained doctors		X
Church supported the work of Galen		
Christianity taught followers to care for the sick		
Church leaders imprisoned those who advocated dissection		



Eliminate irrelevance

Question 2 of your exam will focus on significance. For example:

Explain the significance of the work of Hippocrates on the development of medicine. (8 marks)

In the paragraph below cross out sentences or phrases that do not help explain significance. Having deleted irrelevant elements, justify your deletions with Post-it notes.

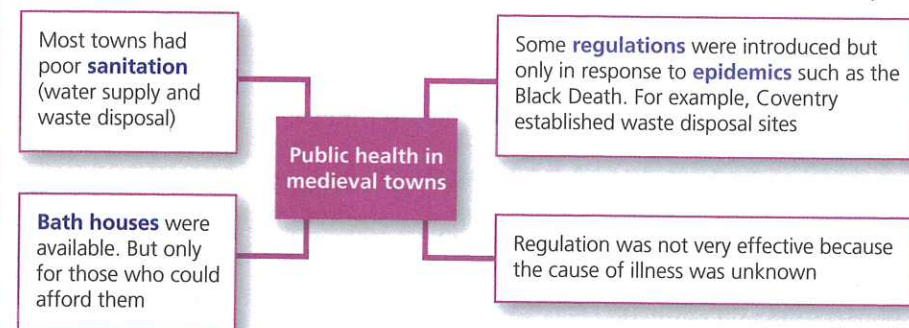
He taught medicine and influenced many people. His work is significant because he developed medicine based on nature, observation and logic. Through careful observation and records he made the important step away from supernatural based medicine. The Theory of Four Humours is an example. It was developed using the theory of four elements. Greeks believed that everything was made from the four elements: fire, air, water and earth. Elements were then linked to seasons: winter, spring, summer and autumn. Doctors noted how patients' illnesses changed with seasons and linked humours to them: phlegm, yellow bile, blood and black bile. This created a method of diagnosis. For example, water to winter and the humour of phlegm. Galen developed the theory further. The Theory of Four Humours led to the treatment of bleeding which was very popular. The theory lasted over 1000 years. But more importantly the process of observation and record keeping has continued to this day.

8.2 Public health in the Middle Ages

REVISED

Towns did little to improve public health

- At a local level: most people believed it was not their role to ensure good hygiene for others.
- At a national level: the King's role was to protect people from invasion not prevent disease.

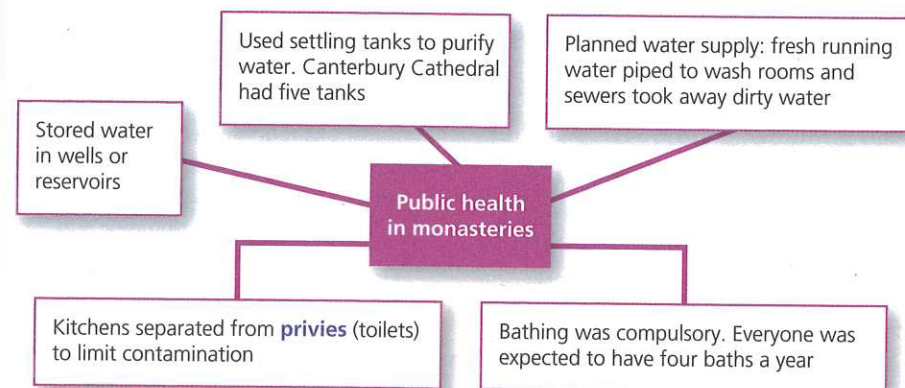


Key point

There was no organised system for ensuring public health in medieval England. Some towns brought in regulations but only in response to epidemics. The best sanitation systems were in monasteries.

Monasteries had superior public health systems to towns

- Monks were literate (they could read) so they were more informed about **public health** than most people.
- Monks regarded a fresh water supply as a priority when designing monasteries.
- However, the link between germs and illness was unknown which limited their efforts.



Supernatural ideas dominated explanations of the causes of the Black Death

- People believed every aspect of their lives was controlled by God. This led them to believe God must have sent the Black Death as a punishment for sinful acts.
- Others explained it by **astrology** (study of the movement and position of planets). The alignment of the Sun and the planets Saturn, Jupiter and Mars was identified as a cause.
- Minority groups were blamed for the Black Death. For example, Jews were accused of poisoning water supplies.
- Some people blamed bad smells because they believed in **miasma theory** (that bad smells caused illness). This was based on observation and logic but it was mistaken.

TIP

All the key terms in **purple** are defined in the glossary at the end of each chapter.

Make sure that you can spell the key terms, know what they mean and aim to use them in your written work.

Methods of prevention and treatment for the Black Death were mainly based on superstition

The most popular explanation was sin, so:

The King and bishops ordered churches to organise special services and processions asking for God's forgiveness

Ordinary people prayed to God for forgiveness

Flagellants tried to avoid catching the Black Death by travelling from Flanders to London whipping themselves to show that they had repented their sins

Other remedies included:

People had noticed a link between disease and bad smells. This resulted in orders to clean streets of dirt and waste

Bleeding was used to treat victims as recommended by Hippocrates to balance the humours

Natural potions were advised as forms of prevention and treatment. Smelling posies of flowers were used to avoid bad smells

- All methods had limited success because the cause of the Black Death was unknown and methods were not based on scientific knowledge.

Consider usefulness

Question 1 in your exam will ask you to assess the usefulness (utility) of a source for a given purpose. For example:

How useful is Source A to a historian studying the Black Death? (8 marks)

You will need to consider both content and provenance. Draw lines to link the inferences below to specific details in the source or provenance.

SOURCE A *Franciscan monks treating victims of the plague, c1474.*



A People believed God sent the Black Death as a punishment.

B The Church was important and influenced lives, especially death.

C Natural explanations for the Black Death were limited.

D Praying for forgiveness was important.

Test yourself

- Give two examples of the Church's influence on people's responses to the Black Death.
- Name an ancient treatment used to treat the Black Death.

TIP

When evaluating a source always read the provenance. It will include important information about who wrote it and when.

8.3 Impact of the Renaissance on medicine in Britain

REVISED

The development of new ideas during the Renaissance led to some medical progress

Development	Impact
The Reformation challenged the religious <i>status quo</i>	... led individuals to question important aspects of their life such as the role of God and science
Invention of the microscope	... helped scientists and doctors to make and explain discoveries
Creation of Caxton's printing press	... allowed ideas to spread quickly across Britain and Europe
English people had become wealthier since the Black Death and spent more on education	... improved literacy rates increased the number of people accessing new scientific ideas

Key point

During the Renaissance, knowledge of the human body advanced through the work of key individuals and scientific advancements. However, progress was limited as the cause of disease remained unknown.

- However, it took a long time for these new scientific ideas to affect everyday treatments.

Vesalius greatly improved understanding of human anatomy

- Vesalius (1514–64) dissected humans rather than animals. This gave him accurate knowledge of human anatomy and allowed him to prove that Galen was wrong in a number of ways.
- Vesalius worked with skilled artists to ensure that his findings on human anatomy were accurately documented and easy for others to learn from.
- In 1543, Vesalius published anatomical drawings in his book *De Humani Corporis Fabrica* (*On the fabric of the human body*).
- His book proved the value of human dissection and the need to question the work of the **ancients**.
- Vesalius' work had limited impact on treatments. Doctors still did not know about the cause of illness or learn new effective treatments.

Paré used scientific method to improve treatments and surgery

- Paré (1510–90) was a French army surgeon for twenty years. By experimenting on wounded soldiers he discovered better ways to prevent bleeding.
- Hot oil had long been used for sealing wounds. On one occasion, Paré ran out of oil so instead he used his own mixture of egg yolk, turpentine and oil of roses, an old Roman technique. It worked.
- To prevent bleeding after an amputation, Paré used **ligatures** to tie wounds instead of **cauterising** them with a hot iron. His method had a higher success rate.
- He spread these ideas through his 1575 book *Les Oeuvres* (*Works*).
- Paré's work became famous among British doctors and surgeons who studied in Europe where his ideas were popular.
- However, Paré's impact on British medicine was limited. Only the rich could afford to pay for medical care and only trained doctors knew about it.
- Paré's work was not accepted by everyone in Britain. New ideas were often met with scepticism.

TIP

The key to success in 'Health and the people' is an overview knowledge of the role of factors and being able to explain how they caused continuity and change. Paré is a good example of the factor of 'war' improving medicine. Throughout your revision use the table on pages 184–85 to record, memorise and analyse good examples for your essays.

The chart will also help you compare periods (the focus for question 3).

Harvey discovered the circulation of blood which challenged previously accepted ideas

- Harvey (1578–1657) worked as a doctor in England and held important posts including being doctor to King James I and King Charles I. He was in a strong position to influence medical ideas in Britain.
- Harvey discovered and proved that veins in the body had valves and that blood was pumped round the body by the heart beating constantly.
- Harvey's theory challenged Galen who taught that the liver produced blood. Harvey proved that the liver did not produce blood. This discovery questioned the value of the popular treatment of bleeding.
- Harvey published his work in *On the Motion of the Heart*, 1628. Afterwards, some of his patients refused to be treated by him, as they no longer trusted him.
- Harvey's work was rejected by conservatives who supported Galen. They refused to accept the use of experiments in medicine.
- Some people rejected Harvey's work because they were unable to see capillaries. It was another 60 years before they could.

Develop the explanation

The statements below describe Vesalius', Paré's or Harvey's work. On a separate piece of paper, for each one, add one or two more sentences to turn it from a description into an explanation of how they influenced medicine in Britain. The first one has been done for you.

Description	Explanation
<ul style="list-style-type: none"> • Paré's ideas and work were taught in European universities • Vesalius, Paré and Harvey recorded their findings and published them • Vesalius used skilled artists to record his work on anatomy • Harvey was personal doctor to two kings 	<p>← This influenced medicine in Britain because many British doctors trained in Europe and as a result were taught about Paré's ideas and work. When they returned to Britain they used them in their own work</p>

Role of factors

Use the information on these two pages to add examples to your chart on pages 184–85. You should be able to add examples for War, Role of individuals, Science and technology and Communication. For example:

Communication	The invention of the printing press allowed new ideas to be shared quickly and accurately
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Practice question

Compare surgery in the Renaissance with surgery in the Middle Ages. In what ways were they similar? Explain your answer with reference to both times. (8 marks)

Test yourself

- 1 Give two examples of inventions that helped advance British medicine.
- 2 Provide two reasons why Harvey's work was not accepted in Britain.

8.4 Dealing with disease

REVISED

Treatments evolved in the Renaissance but were limited by a lack of knowledge about germs

- Improved travel and communication advanced medicine in Britain. New herbs and ideas were introduced that improved treatments.
- Individuals such as Lady Grace Mildmay quickly incorporated new herbs and remedies into their treatments.
- New ideas focused on specific parts of medicine. Robert Burton studied mental illness and Jane Sharp argued for women-led midwifery.
- The working classes often bought their treatments from **quacks**, people who falsely claimed that they held a medical qualification. Quacks travelled around Britain making profits from false treatments.
- A few quacks gained knowledge of treatments through experience.
- Most people continued to be treated by female family members or local wise women. Both groups used herbal remedies and traditional treatments.

Key point

In the Renaissance, treatments started to improve for the wealthy through improved scientific knowledge and limited training for doctors. However, all advancements were limited by a lack of knowledge about germs.

The Great Plague of 1665: prevention and treatments combined traditional and new ideas

Traditional ideas and methods	Combination of traditional and new	New ideas and methods
Prayer: commonly used to ask God for forgiveness for sinful behaviour	Plague doctors were hired by towns: <ul style="list-style-type: none"> they wore special clothing that covered all parts of their body to prevent them from catching the disease they also carried amulets showing people still believed in supernatural causes 	Scientific approach: it was observed that death rates were higher in poorer, dirtier places Watchmen: prevented people entering and leaving infected houses to try to stop the infection spreading
Miasma theory: 'bad air' was blamed. Streets were cleaned and posies carried		

The numbers of hospitals increased. Some treated patients as well as caring for them

- Most hospitals were funded by rich people through donations, legacies or private subscriptions. The Church's role in funding reduced.
- In 1741, Thomas Coram raised money to open the Foundling Hospital in London. It supported and educated vulnerable children until the age of fifteen. Demand was greater than the places available.
- Some aspects of hospital provision continued from the Middle Ages. For example, nurses continued to be untrained and unskilled.
- Hospitals continued to provide care for the most vulnerable.

The establishment of Royal Colleges improved the training and status of surgeons and doctors

- 1600:** Royal College for Physicians established.
- 1700:** half of all practising physicians had served an apprenticeship.
- 1800:** Royal College of Surgeons established. It examined all surgeons practising within seven miles of London.
- 1811:** compulsory for all surgeons to attend a one-year course in anatomy before they qualified as a surgeon.
- 1813:** surgeons had to work for at least one year in a hospital to qualify.



Test yourself

- Identify one similarity and one difference in hospitals between the Middle Ages and the Renaissance.
- When was the Royal College for Physicians established?
- When did training of surgeons become compulsory?

John Hunter was a skilled British surgeon who encouraged investigation and experimentation

- Hunter trained many British surgeons after 1768.
- Like Vesalius, Hunter encouraged human dissection to advance the understanding of anatomy.
- He told surgeons to trust the body's natural wound-healing process.
- Hunter taught the importance of observation and experiment.
- Edward Jenner followed these principles when he discovered **vaccination**.



Compare events

Question 3 of your exam will ask you to compare events or developments from different periods.

The table below shows responses to the Black Death. Complete the second column to explain how responses to the Great Plague were similar or different. Use one colour for similar, another colour for different.

Responses to the Black Death, 1348	Responses to the Great Plague, 1665
People asked God's forgiveness by praying and lighting candles in church	Similar. People continued to pray for God's forgiveness
Some responses were based on observation. For example: they cleaned the streets of dirt and waste; Henry VI banned the kiss of obedience	
Bleeding was used. It was based on the Hippocratic idea of balancing the humours	
Natural potions were also advised for sufferers such as smelling posies of flowers. However, they were not based on scientific knowledge	
The cause was unknown meaning all methods of treatment and prevention were limited	



Practice question

How useful is Source B to a historian studying the Great Plague of 1665 in Britain? Explain your answer using Source B and your contextual knowledge. (8 marks)

SOURCE B An illustration from 1656 showing an Italian plague doctor. The beak of the mask is filled with herbs. The stick is for beating away sick people.



TIP

Remember that all sources are useful for something. It all depends on what you are using them for. Never dismiss a source as useless because it is one-sided or incomplete. It will be still be very useful for finding out about the attitudes of the person who made it.

8.5A Prevention of disease

REVISED

In the 1700s, inoculation was widely used to prevent smallpox

- Smallpox was greatly feared. It caused death, blindness and scarring. There were frequent epidemics.
- Inoculation** involved giving a low dose of smallpox to make a person immune to the disease.
- In 1721, Lady Montagu introduced it to England. It became popular.

Jenner introduced the first vaccination against smallpox

- Edward Jenner injected James Phipps with pus from cowpox sores. It gave James Phipps immunity against smallpox. This became known as vaccination.
- Jenner was unable to explain why vaccination worked. But it worked so well that the government eventually made it compulsory.

Vaccination faced opposition, especially from doctors

- Inoculation doctors opposed it because it threatened their business.
- Many people thought it was wrong to inject cowpox into humans.
- Some saw smallpox as a punishment from God and believed prevention interfered with God's will.
- The Anti-Compulsory Vaccination League was set up in 1866. It argued that it was the right of parents to decide if their child was vaccinated.

Key point

During the 1800s, medical knowledge significantly advanced following major breakthroughs by individuals. These included the discovery of germs and the ability to identify specific bacteria.

1798: Jenner published his findings

1802: government gave Jenner £10,000 to open a vaccination clinic in London

1840: vaccination made free for all infants

1853: vaccination of children was made compulsory

1871: parents fined if their child was not vaccinated

1887: parents given the right to decide if their child was vaccinated

8.5B Germ Theory and its impact

REVISED

In 1861 Pasteur's Germ Theory showed the link between germs and disease

- Louis Pasteur's work was a major breakthrough in **microbiology** (the branch of science that deals with microorganisms).
- Using Jenner's work on vaccination, Pasteur experimented and developed new vaccinations (including vaccines for chicken cholera and rabies).
- Inspired by Pasteur, Joseph Lister successfully used **antiseptics** to reduce infection during and after surgery.

Koch helped identify specific bacteria which cause disease

- Robert Koch found a way to stain bacteria, making them easier to identify under a microscope. It allowed him to link specific germs to specific disease.
- Koch identified the causes of Britain's major killers, including **diphtheria** and **typhoid**. Fewer people died.
- His technique allowed other scientists to do their own microbe hunting.

Ehrlich created the first chemical treatment, changing the way disease was treated

- Paul Ehrlich used scientific experiments to identify and treat disease.
- In 1910, he created Salvarsan 606. This chemical killed germs causing syphilis (a common sexually transmitted disease in Britain at the time).
- Salvarsan 606 only targeted the specific germ that caused syphilis. This was a major breakthrough in treatments.

Diagnosis was improved by new technology

Invention	Importance
Stethoscope invented in Paris in 1816 and became common from 1850	Enabled doctors to hear the internal workings of the body and assess a patient's health more precisely
X-ray machine invented in 1895	Allowed surgeons to see bones and assess patients' illnesses more accurately
Thermometers	Gave doctors accurate records of patients' temperatures

Test yourself

- Identify three ways health and medicine improved during the Renaissance.
- Name two British individuals involved in medical improvements.
- List three key stages (with dates) in the story of vaccination.

Consider significance

Question 2 will ask you about the significance of an event you have studied. For example:

Explain the significance of the Germ Theory in the development of medicine. (8 marks)

Explain the significance of vaccination in the development of treatment. (8 marks)

Because significance can seem quite a vague idea it is easy to get sucked into including irrelevant details. All you really have to do with a significance question is explain one way the event was significant at the time; and one way it has been significant for people looking back from a later period.

Copy and complete this grid to help you plan your answer to each of these exam style questions.

Event or development	At the time	In later periods
Germ Theory		
Vaccination		

Include general points and specific examples from your own knowledge. Remember to incorporate evidence from different eras.

Practice question

Study Source C. How useful is Source C to a historian studying Edward Jenner's vaccination? Explain your answer using Source C and your contextual knowledge. (8 marks)

SOURCE C A cartoon by Isaac Cruickshank, 1808, showing inoculators being driven away by Jenner's vaccinators.



8.6 A revolution in surgery

REVISED

Simpson developed effective anaesthetics in 1847 solving the problem of pain

- James Simpson was Professor of Midwifery at Edinburgh University.
- He used ether as an **anaesthetic** (pain relief) but wanted to discover a more effective method.
- In 1847, Simpson discovered **chloroform** was an effective anaesthetic after experimenting with friends.
- Simpson quickly used chloroform during childbirth and other operations.
- Simpson wrote articles encouraging other surgeons to use it. He argued that chloroform allowed surgeons to do longer or more complex operations.
- Chloroform was not accepted by everyone until Queen Victoria used it during childbirth in 1853. She later 'blessed' the drug.
- Some surgeons stopped using chloroform by 1870 because it did not reduce **mortality** (death) rates. Longer operations led to increased blood loss and deeper infections. It was also hard for an accurate dose to be given.

Key point

By the late 1800s the chances of a patient surviving surgery greatly increased as solutions were discovered for two major problems: pain and infection. However, the third problem, bleeding, remained unsolved.

In 1867 Lister developed antiseptic surgery

1867: after reading about the Germ Theory, Joseph Lister experimented with carbolic acid spray to reduce infection during surgery. Mortality rates (deaths) fell from 46 per cent (in 1867) to 15 per cent (by 1870)	1870: Lister started to sterilise his operating room and patients' wounds with carbolic acid	1871: Lister invented a machine to automatically spray his operating room with carbolic acid	1877: Lister started to train British surgeons in London	1880: Lister started to use sterilised catgut for internal stitches
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- Lister's methods were not accepted by everyone because:
 - carbolic spray slowed operations
 - it made operating conditions unpleasant
 - some surgeons were not careful so did not have the same success as Lister.

Individuals pioneered new techniques in surgery increasing survival rates

Person and date	Invention/change	Significance
Charles Chamberland, 1881	Steam steriliser for medical instruments	Removed the need for carbolic acid and increased surgery survival rates. Few surgeons used it due to the time it took and cost
Gustav Neuber, 1886	Aseptic surgery: this is when all possible germs are removed from the operating theatre	Built on Lister's ideas and aided by Koch's discovery of the bacterium which caused septicaemia. Reduced mortality rates. In 1886 he set the standards for others to follow
Berkeley Moynihan, 1890s	First in Britain to wear surgical gloves and to change into sterile white garments for surgery	Took a long time for other surgeons to copy him

Test yourself

- List two reasons why chloroform did not reduce mortality rates.
- Give three reasons why surgeons opposed antiseptics.
- Name the British surgeon who changed his clothes before operating.

Develop the detail

Each of the following statements is vague and lacks detail. Add details to show that you understand the general point made about advancements in surgery. One example has been done for you.

Statement	Development
Chloroform was an effective drug but it was not quickly accepted	<i>Chloroform was an effective anaesthetic and Simpson soon used it to assist with childbirth and other operations. However, it was not quickly accepted as it did not always reduce mortality rates. Also surgeons were always conservative about new ideas</i>
Lister's discovery of carbolic spray reduced his mortality rates	
Many surgeons disliked using carbolic spray	
Lister's work contributed to the development of aseptic surgery	

Compare periods

The table below shows features of opposition to new ideas in the Renaissance. Complete the second column to explain how opposition to new surgical ideas 1845–70 was similar or different.

Challenge: challenge yourself and add a third column (on a separate sheet) with the heading 'Opposition to new ideas in the twentieth century'.

Opposition to new surgical ideas in the Renaissance	Opposition to new surgical ideas 1845–70
Refusal to accept the use of experiment	
Rejected by conservatives who supported traditional ideas and texts, especially the works of Galen	
Harvey's ideas were dismissed as physicians and surgeons were unable to see capillaries. It took another 60 years for the invention of a microscope powerful enough to achieve this	
New medical ideas took a long time to be accepted. People did not like change	

Practice question

Explain the significance of Lister in the development of surgery.

[8 marks]

8.7 Improvements in public health

REVISED

In the 1800s, industrial towns grew rapidly leading to significant public health problems

- **Overcrowding** was a common problem. A large family might live in one small room and share toilets and water pumps with many families.
- Infectious diseases such as typhus and typhoid spread quickly.
- There were few safety rules in the workplace. Many people worked in dangerous environments and became ill. For example, chimney boys suffered from scrotal cancer from soot particles and coal miners from pneumoconiosis from breathing in coal dust.
- There was no regulation of food or hygiene. Milk might be watered down and re-coloured using chalk powder.

Snow proved that cholera was caused by infected water

- Britain faced many deadly cholera epidemics between 1831 and 1866.
- Cholera causes watery diarrhoea and sickness leading to rapid dehydration and death. It was greatly feared.
- People did not know what caused **cholera**. The common explanation was miasma (bad air).
- John Snow thought differently. In 1849 he wrote a book arguing it was caused by infected water.
- During the 1854 epidemic, John Snow proved the link between cholera and dirty water.
 - He did house-to-house interviews and mapped the location of each cholera case.
 - He worked out which water pump the infected houses used. He removed the handle of that water pump. The outbreak ended.
 - Further exploration found that the lining of the nearby cesspit had cracked. Its contents had leaked into the drinking water.
- Snow's discovery was made before Pasteur published his Germ Theory.

Individuals played a significant role in public health reform in the 1800s

Individual	Public health reform
William Farr	Introduced compulsory registration of births, marriages and deaths in 1837. This meant the authorities were more aware of health problems
Thomas Southwood Smith	Studied diseases caused by poverty. His work was used by Edwin Chadwick as evidence for the need to improve public health
Edwin Chadwick, Secretary to the Poor Law Commissioners	Researched living conditions and health of the poor in towns. Published his findings in <i>Report on the Sanitary Conditions of the Labouring Population</i> . He linked poverty to poor living standards and ill health

Key point

In the late 1800s, public health improved following greater understanding of the causes of illness and a scientific approach to research. However, the struggle to improve conditions for the working classes continued into the twentieth century.

TIP

Writing frame for significance questions:

- paragraph 1: significance at the time
- paragraph 2: significance in a later period
- paragraph 3: conclusion about whether significance has increased or decreased over time and why this has happened.

Government attitudes changed and *laissez-faire* was replaced by legislation

- In the early nineteenth century the government followed a policy of *laissez-faire* (the government should not interfere in people's lives).
- Attitudes were gradually changed by a combination of the growing evidence of health problems in industrial cities, cholera epidemics, the Great Stink of 1858 and the pioneering work of individuals.
- Public health laws were introduced in the second half of the century:

Date	Act	Results
1848	Public Health Act	Voluntary. Allowed councils to raise money to improve conditions in their town. However, very few opted to use this power
1864	Factory Act	Unhealthy conditions in factories became illegal
1866	Sanitary Act	Local authorities became responsible for sewers, water and street cleaning
1875	Food and Drug Act	Regulated food and medicine
1875	Public Health Act	Compulsory. It forced local councils to provide clean water and appoint medical officers of health and sanitary inspectors

Key events

Complete the four blank boxes to show your knowledge about John Snow's work and its impact.

In 1849 John Snow published a book arguing that cholera was spread by dirty water rather than through the air					Careful scientific investigation had helped to find the cause of cholera, before Pasteur's Germ Theory was published
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You're the examiner

Explain the significance of Edwin Chadwick's work in improving public health. (8 marks)

Edwin Chadwick's work in the nineteenth century meant that the government took action in industrial cities to improve public health conditions. He was appointed Secretary to the Poor Law Commission in 1834. He researched living conditions and health of the poor in towns. Using the data he recorded, he made a link between poor living conditions, disease and life expectancy. This was used to write the influential 1842 'Report on the Sanitary Conditions of the Labouring Population'. His work contributed to the British government changing their attitude towards public health. In 1848, the Public Health Act was passed. It gave councils who wanted to take action the right to make changes. It also contributed to the establishment of the general Board of Health.

Read the sample answer. Use this simple mark scheme to judge what level this answer has reached.

- Level 1: knowing one or two relevant points on the topic.
- Level 2: clearly explaining significance in one period.
- Level 3: clearly explaining significance at the time and in a later period.
- Level 4: two points of significance explained, plus a clear conclusion answering the question.

Annotate the extract and write a comment justifying the level.

Test yourself

- 1 Give three reasons why towns had poor public health in early 1800s.
- 2 What was the key difference between the 1848 and 1875 Public Health Acts?

8.8 Modern treatment of disease and surgical advancements

REVISED

Penicillin was a great step forward in treatment

- **1880s:** Joseph Lister used **penicillin** to treat an infected wound. He did not continue to use it or leave any records of his work with it.
- **1928:** Alexander Fleming rediscovered the properties of penicillin. He published his findings but took no further action.
- **1937:** Florey and Chain researched penicillin after reading Fleming's article.
- **1940:** they proved penicillin's potential by experiments on mice.
- **1941:** penicillin first tested on a human being. It was a success.
- **1942:** due to Second World War, the US and British governments funded the production of penicillin. By 1944 penicillin was available to treat all wounded Allied soldiers on D-Day.
- **Today:** penicillin is a common form of treatment saving many lives. However, some germs are becoming resistant to antibiotics.

Key point

Medicine in the twentieth and twenty-first centuries greatly benefited from developments in science and technology as well as financial investment from private pharmaceutical firms.

The pharmaceutical industry developed quickly after 1945

- Pharmaceuticals have become an important and wealthy industry.
- A range of life-saving drugs has been developed by private companies.
- Regulation of drug companies has ensured drugs are fully tested following mistakes such as thalidomide which had harmful side-effects.

Alternative treatments have become popular but scientific medicine largely rejects them

- Alternative medicines are treatments outside of mainstream practice.

Example 1: homeopathy	Example 2: acupuncture
Homeopathy uses substances very diluted with water to stimulate the body's natural healing power. It is not recognised by NICE , which states that it should not be used for the treatment of any health problems.	Acupuncture involves stimulating nerves using needles. It is widely used around the world. NICE only recommends it for chronic tension-type headaches and migraines.

- Interest in alternative medicine has grown following concerns about modern medicine and the negative side-effects of drugs.
- There is a fierce debate about the benefits of alternative medicines. The British Medical Association has referred to homeopathy as 'witchcraft'.

War led to improvements in surgery in the twentieth century

First World War	Second World War
Harold Giles developed new techniques for treating facial injuries. Mobile X-ray machines and blood transfusions saved lives. 1921: British Red Cross created the first blood banks. 1938: British government established the Army Blood Supply Depot. This system still exists.	Cataract surgery developed. Sir Harold Ridley discovered that Perspex splinters were not rejected by the eye. Sir Archibald McIndoe improved treatment for burn injuries.

Science and technology are improving modern surgery

- Imaging technology such as MRI scans allows surgeons to see inside the body.
- In 1961 the first heart pacemaker was fitted to a patient.
- **Keyhole surgery** (through a small incision) and laser techniques are making operations quicker and reducing healing times.

Test yourself

- 1 Name two individuals (and their role) in turning penicillin into a life-saving drug.
- 2 Define alternative medicine and give two examples.

TIP

Candidates find it hard to give time to planning in an actual exam which is why it is so important to practise before the exam so that it becomes instinctive.

Role of factors

Record examples of each of the following factors helping progress in the twentieth and twenty-first centuries.

Challenge: challenge yourself by adding a fourth column (on a separate sheet) titled 'Government'.

War	Science and technology	Role of the individual
Second World War led government to invest in the production of penicillin. Now a common life saver		

Essay plan

Question 4 of your exam will be a factor-based essay. For example:

Has war been the main factor in the development of surgery in Britain since the Middle Ages? Explain your answer with reference to war and other factors. (16 marks + SPaG 4 marks)

The secret of writing an essay is to have a good plan. Here is a plan.

Paragraph	Purpose/points to include	Comment
Introduction	State your argument: whether you think this was the 'main' factor	This sets your essay off on a positive track and gives you an argument to hold on to throughout your answer
Paragraph 1	Evidence of the named factor at work	Support everything you say with precise knowledge. Use examples from more than one period.
Paragraph 2	Reasons why the named factor has had limited impact	This is an opportunity to show your developed understanding of the named factor. For example explain how that factor did not apply at all times.
Paragraphs 3 and 4	Consider the role of one (or two) more factors	Choose other factors that had influence and write one paragraph on each. Link them clearly to the development stated in the question. Compare each to the main factor.
Conclusion	Restate your judgement. Is the named factor more important than those in paragraphs 3 and 4? Include one strong argument as to why.	This should be easy to write if you have kept your focus through the rest of the essay. Remember SPaG: there are 4 marks for spelling, punctuation and grammar so use your final minutes to check your work and correct it if necessary.

Use this plan to answer the question above:

- Step 1: note evidence and examples for paragraphs 1 and 2.
- Step 2: choose what factor(s) to focus on for paragraphs 3 and 4 and note evidence and examples.
- Step 3: in the exam you write your full essay, but for this task just practise writing your conclusion.

8.9 Modern public health

REVISED

Reformers highlighted the poor health of working-class people in Britain

- **1889:** Charles Booth found that 35 per cent of Londoners lived in poverty.
- **1899:** many Boer War volunteers were found unfit to fight due to bad diet and illness.
- **1901:** Seebohm Rowntree discovered over half of York's working-class people lived in poverty.
- **1913:** Maud Pember's *Round About a Pound a Week* highlighted how hard it was to survive on the average labourer's wage of £1 per week.

Key point

During the twentieth century, there was greater government involvement in improving public health. During the twenty-first century, government policies and spending have become major political issues as costs increase.

The Liberal government introduced social reforms to benefit the working class

Year	Act	Effect
1906	Education (Provision of Meals) Act	Free school meals
1908	Old Age Pensions Act	People over 70 receive 5 shillings (25p) a week; 7 shillings and 6 pence (37.5p) for a married couple
1909	Housing and Town Planning Act	Illegal to build back-to-back housing
1909	Labour Exchanges Act	Help unemployed people find work
1911	National Insurance Act	Introduced contribution scheme for sick and unemployment pay

The Beveridge Report led to further welfare reform and the National Health Service

- The **Beveridge Report** (1942) set out proposals for **welfare** changes after the Second World War.
- The **National Health Service (NHS)** was a central feature. It aimed to provide free healthcare 'from cradle to grave'.
- The NHS was created in 1948. Health providers were brought together to provide a free service at the point of delivery.
- The British Medical Association reported that only ten per cent of doctors supported the creation of the NHS.
- Improved welfare system included a comprehensive system of benefits paid through taxation and workers' contributions.
- The NHS and welfare reforms transformed the health of ordinary people.

Government tackled other public health issues in cities

- In response to bad air pollution in 1952, two Clean Air Acts in 1956 and 1968 encouraged people to use gas and electricity rather than coal.
- During the 1960s, the government ordered slums to be cleared. Councils built modern homes with central heating and bathrooms. These were often in tower blocks.
- Government established new towns, such as Milton Keynes, to help solve the problem of overcrowding in major cities.

Pressures on the NHS and welfare system have increased because of Britain's ageing population

- Government spending reviews have led to shortages and even removal of some drugs and treatments.
- The government has also focused on prevention through:
 - education about healthy eating (for example, 'five a day')
 - compulsory vaccination against diseases such as polio
 - screening for common cancers (such as breast screening).

Test yourself

- 1 Give two reasons why concern about public health increased at the start of the twentieth century.
- 2 List three examples of government public health measures since 1900.

Compare periods

Question 3 will ask you to compare periods. For example:

Compare government action in public health in the early twentieth century with its role in the mid-1800s. In what ways were they similar? Explain your answer with reference to both times. (8 marks)

The table below lists government actions to improve public health in the mid-1800s. Add your own annotations to highlight what was similar or different to this in the twentieth century.

Year	Government actions to improve public health in the nineteenth century
1848	Public Health Act was voluntary allowing councils to improve conditions in their town. However, they had to pay for changes. Very few opted to use it
1853	Compulsory vaccination against smallpox introduced
1858	London started a sewer-building programme
1864	Factory Act made unhealthy conditions in factories illegal
1866	Sanitary Act made local authorities responsible for sewers, water and street cleaning
1875	Food and Drug Act regulated food and medicine
1875	Public Health Act was compulsory. It forced local councils to provide clean water and appoint medical officers of health and sanitary inspectors
1875	Housing Act enabled councils to demolish and replace poor housing

TIP

- For a 'compare' question you will be asked about either similarities or differences. You don't need to write about both. Aim to cover at least two similarities or two differences. Write a paragraph on each.
- Good words to use when writing about similarities are: *likewise, also, both, in the same way, similarly*.
- Good words to use when writing about differences are: *on the other hand, in contrast, whereas*.

Overview

REVISED

The key to understanding 'Health and the people' is overview knowledge of the role of factors and your ability to explain how they caused continuity and change. This table will help you analyse and memorise good examples for your essays. It will also help you with comparing periods (the focus for question 3).

Aspect or theme	Middle Ages				Renaissance			
	Beliefs about the causes of illness	Treatments	Surgery	Public health measures	Beliefs about the causes of illness	Treatments	Surgery	Public health
War						Battles gave surgeons many bodies to work on Paré introduced ligatures and created a herbal treatment for raw wounds		
Religion	Strong belief God sent illness as a punishment for sinful behaviour Church leaders prevented individuals investigating. Roger Bacon imprisoned for advocating experimentation					Reduced influence on medicine allowing research, observation and dissection		
Chance						Paré: ran out of hot oil and used a new herbal treatment for raw wounds		
Communication						Improved travel brought new herbs to Britain		
Government						Encouraged the use of religious treatments during the Great Plague		
Science and technology						Printing press allowed surgeons to share their ideas		
Role of individuals	Galen dominated medical texts and training. He supported the design theory							

Basic: place a cross in each box if the factor influenced the aspect.

Developing: colour each box to show if the factor caused **continuity** or **change**.

Expert: add a specific example of the influence of the factor on each aspect. Some examples have been started for you.

Industrial Britain				Twentieth and twenty-first century			
Beliefs about the causes of illness	Treatments	Surgery	Public health	Beliefs about the causes of illness	Treatments	Surgery	Public health
							Boer War highlighted poor health of British population
							Increased regulation Establishment of the NHS and welfare system in 1948
		Invention of the steam steriliser					
		Simpson discovered chloroform, an effective anaesthetic Lister produced the first antiseptic					The reports of Charles Booth, Seebohm Rowntree and Maud Pember in the early twentieth century

Exam focus: Health and the people: c1000 to the present day

Model answers

Here are model answers for each question type on the thematic study. The annotations highlight what makes each one a good answer.

Question 1: Usefulness of a source

Study Source B on page 173.

How useful is Source B to a historian studying the Great Plague of 1665?

Explain your answer using Source B and your contextual knowledge. (8 marks)

Source B shows the plague doctor's protective outfit as designed by Charles de Lorme in 1619. It is useful because it shows that people were unaware of the causes of the plague, but had many theories that combined natural and supernatural ideas. The nose cone full of sweet-smelling herbs relates to the belief in the miasma theory. People thought that 'bad air' was the cause. The link between dirt and disease was being made, but a lack of understanding and limited technology meant the link could not be scientifically explained. In contrast to natural ideas the plague doctor can also be seen wearing an amulet, jewellery worn to ward off evil spirits, in the sleeve of the coat. Supernatural beliefs also influenced methods of treatment and prevention of the Great Plague as people searched for cures. Yet the source is limited as it fails to inform historians about the more organised and local regulations enforced to reduce deaths. For instance the actions of the Mayor of London to prevent those infected leaving their houses. Overall Source B is useful for a historian studying the actions of plague doctors in treating the disease during a period when new scientific approaches to medicine and public health were emerging but had limited effect.

The answer gives specific details from the source

The details in the source are then clearly explained

Here specific contextual knowledge is used to explain how far the source is useful for understanding the issue in the question

The answer finishes with a clear judgement about how useful the source is

Question 2 – Explain significance

Explain the significance of Galen in the development of medicine. (8 marks)

Galen's work was significant during the Middle Ages because it was supported by the Church and used to train physicians in universities across Europe. Consequently, his ideas greatly influenced practice and training of the most qualified and their apprentices. Furthermore, the Roman Catholic Church dominated life and only texts it approved were taught. Galen's work was accepted by the Church because it upheld the position of God as the creator. His dominant position and support from the Church made it extremely hard to question or oppose. Those who did, for example Roger Bacon, were sentenced to prison terms. This made Galen very significant in the short and medium term.

A long-term significant contribution Galen made to the development of medicine was highlighting the importance of clinical observation. He advocated the need to carefully watch and monitor a patient's symptoms to enable the correct treatment to be given. This idea, taken from Hippocrates, influenced the work of many individuals who brought later advancements to medicine in Britain. Clinical observation is a fundamental part of diagnosis today.

This answer opens by directly addressing the question. This shows the examiner that you have understood, but will also help you to focus your answer as you write

The answer begins by identifying the short-term significance and giving evidence which supports this

In a separate paragraph, the long-term significance is considered and supported with precise evidence

While clinical observation is a vital part of modern-day medicine, much of Galen's work greatly limited the development of medicine until it was challenged during the Renaissance. For example, the flow of blood in the heart. However, the discovery that aspects of Galen's work were inaccurate showed that human dissection was important and it is vital that ideas are questioned.

Here the answer links the evidence back to the question by explaining why this was significant

Question 3: Compare events

Compare public health in the Middle Ages with public health in early nineteenth-century industrial towns. In what ways were they similar?

Explain your answer with reference to both times.

(8 marks)

Public health in the medieval period and early nineteenth century were similar for the poorest town dwellers. Late medieval period towns were dirty places where animals roamed freely and excrement covered the streets. Sanitation was poor and in many places did not exist. A lack of knowledge about germs and a strong belief in supernatural causes limited advances in public health. Similarly, newly established industrial towns of the nineteenth century also suffered from dirt. Human and animal waste was discarded in the streets and rivers. While supernatural beliefs were less influential, germs were unknown until 1861. The miasma theory dominated and waste was removed because of its smell. The miasma theory had also existed during the Middle Ages. During the Black Death, individuals had carried posies to prevent the disease. A lack of knowledge hindered progress in both eras.

Each paragraph opens by giving one reason why these events are similar

Specific knowledge is then given about one of these events which is relevant to the point made in the opening sentence

In both eras conditions were poor due to a lack of central regulation or control. Most people believed it was not their responsibility to ensure good hygiene. In the Middle Ages the King's role was protecting his people from invasion and leading an army in battle. It was not preventing disease. Similarly, in the early nineteenth century the government did not believe it was part of its role to interfere with people's lives. It followed the policy of laissez-faire. There were some local exceptions but their efforts were limited. For example, in the Middle Ages both London and Coventry introduced local measures. Coventry identified waste disposal areas. In the nineteenth century, local actions were taken to try and prevent cholera in Manchester.

Examples are then given from the second event which are also relevant to the point in the opening sentence

Poor public health had consequences for society in both eras. In the medieval period epidemics were common, the Black Death came to Britain in 1348 and the plague revisited many times. In the early nineteenth century, contagious diseases also spread quickly, including cholera. Both epidemics forced authorities to take action. However, their actions were limited by a lack of knowledge about the cause of disease.

Question 4: Factor-based essay

Has war been the main factor in the development of surgery in Britain since the Renaissance? Explain your answer with reference to war and other factors. (16 marks + SPaG 4 marks)

War has been one of the main factors in the development of surgery in Britain since the Renaissance. It advanced surgery in many ways, including the creation of new methods and technology. However, the work of key individuals cannot be underestimated.

During the Renaissance, war provided surgeons with many patients. This gave them opportunities to try different methods and improve core skills, including amputations. Paré was a war surgeon who developed improved methods during warfare. He used a herbal-based treatment for raw wounds, moving away from the common method of applying hot oil to cauterise them. He also used ligatures to tie-off wounds instead of cauterisation. Both of these led to improved success rates. Yet his impact was limited as not everyone accepted his ideas.

War played a major role in the twentieth century following the two world wars. As surgeons were faced with new wounds and demands new treatments and technologies were advanced. During the First World War, Harold Giles developed new techniques to treat facial injuries and burns. Mobile X-ray machines and blood transfusions were introduced, enabling injuries that frequently led to death to be treated. The British Red Cross created the first voluntary blood banks in 1921. In 1938, the British government established the Army Blood Supply Depot in Bristol. This system still exists. The Second World War led to developments in cataract surgery after it was discovered by Sir Harold Ridley that Perspex splinters were not rejected by the eye. Recent wars have advanced improvements in prostheses. All examples involving war highlight its importance and how it has progressed the major need at the time. Yet, war alone has not progressed surgery. Instead, it has enabled some significant barriers to be broken.

More recently, advancements in technology, not war, have driven surgery. Improved machines have enabled less-invasive surgery such as keyhole and laser techniques. Imaging technology has also become a central part of surgery. CT and MRI scans allow surgeons to see inside the body without opening it.

Individuals have also played an important role in advancing surgery, especially in the late 1800s. Following Pasteur's Germ Theory in 1861, advances in surgery followed. Joseph Lister used Pasteur's work to develop his own observations. This led to him creating the first antiseptic in 1867. In the short term it reduced Lister's death rates by 35 per cent. In the long term it was a major factor in the development of aseptic surgery. Another key individual in the development of surgery was James Simpson. His discovery of chloroform as an effective anaesthetic allowed surgeons to attempt longer and more complex operations. Modern anaesthesia and aseptic methods are a significant part of surgery. They allow it to be safe and effective. To a lesser extent the work of John Hunter also needs to be noted. He ensured human anatomy was studied and trained many British surgeons from 1768. Without individuals making new discoveries and experimenting, surgery would still be very risky. It was individuals who removed the major causes of death in surgery, infection, pain and blood loss.

To conclude, war and technology have been major factors in the development of modern British surgery, especially in the twentieth century following the First and Second World Wars. However, it must be noted that the fundamental basics of modern surgery were due to the work of key individuals, Simpson and Lister.

The answer opens by directly addressing the factor which is given in the question

The argument in the paragraph is then supported by a range of detailed, specific knowledge

Here the paragraph links the evidence to the issue in the question

Later paragraphs open with another factor which is relevant to the issue in the question

The answer closes with a final judgement which carefully weighs up the role of the given factor against other factors

Glossary: Health and the people: c1000 to the present day

Acupuncture A form of alternative medicine that involves stimulating sensory nerves under the skin and in the muscles of the body using needles

Amputation Surgical removal of part of the body

Anaesthetic Pain relief

Anatomy The science of understanding the structure of the body

Ancients A collective term for doctors such as Hippocrates and Galen who worked in ancient Greek and Roman empires

Antiseptic Method to prevent infection

Aseptic surgery When all possible germs are removed from the operating theatre

Astrology The study of the movement and position of planets

Bath house A place where people paid for a bath to get clean

Beveridge Report Set out proposals for welfare changes after the Second World War

Bleeding Opening a vein or applying leeches to draw blood

Cauterising Medical practice or technique of burning a part of a body to remove or close off a part of it

Chloroform Type of anaesthetic
Cholera Watery diarrhoea and sickness leading to rapid dehydration and death

Clinical observation Examining and observing a patient and keeping careful records

Design theory The belief that God designed humans

Diphtheria Infectious disease spread through bacteria

Dissection Cutting up and examination of a body

Doctrine of Signatures States that herbs that resemble various parts of the body can be used by herbalists to treat ailments of those parts of the body. The doctrine dates from Galen's time

Epidemic Widespread outbreak of disease

Flagellants People who whipped themselves to show that they had repented their sins

Homeopathy A form of alternative medicine based on the use of substances diluted with water

Infection Formation of disease

Inoculation Involves a person being given low dose of smallpox making them immune to a serious outbreak

Keyhole surgery Surgery through small incision

Laissez-faire Belief that the government should not interfere in people's lives

Ligature A cord used to tie something very tightly, for example in order to stop bleeding

Miasma theory Belief that bad smells caused illness

Microbiology Branch of science that deals with microorganisms

Mortality Death

National Health Service (NHS) Taxpayer-funded state healthcare for UK citizens

NICE The National Institute for Health and Care Excellence which approves new drugs or treatments for use in Britain

Overcrowding Too many people in a space

Penicillin Life-saving antibiotic

Physician Doctor

Plague doctor A doctor who treated victims of the plague

Privies Toilets

Public health Helping people keep healthy by protecting them from disease and promoting health to prolong life

Quack A person who falsely claims they hold a medical qualification

Regulation Rules made by authorities

Sanitation Methods to ensure hygiene and prevent disease, for example sewers

Theory of Four Humours A theory advocated by Hippocrates on the working of the human body. It stated that the body was made up of four humours that needed to be balanced for good health. The

four humours were blood, phlegm, black bile and yellow bile. Each humour was linked to an element and in turn a season

Typhoid Infectious disease spread through bacteria

Urine charts Used by doctors to identify the colour of a patient's urine when diagnosing illness

Vaccination Injection into the body of killed or weakened organisms to give the body resistance against disease

Watchman Prevented people entering and leaving infected houses during the Great Plague

Welfare Statutory procedure or social effort designed to promote the basic physical and material well-being of people in need

Zodiac charts A diagram used to explain how star formations influenced each part of the body