

Health and the People

C1000 to 2021



This Support Booklet will help prepare you for the Medicine History exam.

There are four time periods that we need to study:

- Medieval (Middle Ages) 1000 - 1450**
- Early Modern (Renaissance) 1450 - 1799**
- 19th Century (Industrial Revolution) 1800s**
- 20th Century (Modern) 1900s**

And we look at three different aspects of Medicine:

- Ideas about Disease**
- Surgery**
- Public Health**

Over the thousand years that we study, people were always trying out new ways to keep healthy. Some of their ideas sound crazy to us. Sometimes a clever new idea came along and helped medicine to progress. Unfortunately, quite often some people didn't like the new ideas.

Sometimes when life was tough, such as when there was a war or a plague, this actually helped medicine to improve. Often it was only in bad times that governments were willing to spend money on new medical ideas.

1. Period **Medieval**
Topic **Ideas about Disease**

In Medieval times lots of ideas about medicine were based on superstition and religion AND natural cures because there was so little scientific knowledge at the time. People always had to keep themselves healthy, so they tried different cures that were usually quite simple but some of them were useless.

WHAT DO YOU REMEMBER?	
Superstitious or religious beliefs and cures in the medieval period	Natural beliefs or cures in the mediaeval period

What was happening to help understanding of disease?

There were some doctors in Medieval England, but their ideas and methods were very simple, and it was only the rich who could afford them. Poor people would get the help of wise women or passed advice about remedies amongst themselves. Doctors still used the ideas of **Galen** and **Hippocrates** as a basis for their theories.

Hippocrates was an ancient Greek doctor who believed in natural cures and that doctors must study a patient's symptoms carefully. He said, 'Food is medicine'. He believed that the body was made of 4 humours which had to be kept in balance.

The **4 humours** were _____, _____, _____ and _____.

Galen was a doctor in Ancient Rome who believed that a doctor must study how the body is put together. Because he was not allowed to dissect humans he experimented on animals like pigs and apes. So, some of his theories were totally wrong. For example, he said the heart had holes at the centre, and that blood was produced in the liver.

In Medieval England the **church** was very important and although they did not encourage new ideas or logical thinking, they did help people's health in some ways. They set up and paid for some hospitals. Monks were able to write, and they copied out books which would spread ideas. Also, in monasteries they had herb gardens and many of these herbs were used for medicines.

In the Islamic world in medieval times medical ideas were more advanced. Islamic law allowed doctors to dissect bodies which the Christian church didn't.

How did this help progress?

Also, Arab doctors came up with some very important ideas at this time. For example, Rhazes wrote about small pox in accurate detail.

Factors *Religion did help Medicine in Medieval England by:*

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Words and Names that you HAVE to learn

1. Medieval
2. Superstition
3. Hippocrates
4. Galen

Facts that you HAVE to learn

- Hippocrates' natural ideas on health
- The four humours
- Galen wrote 350 books that were used for over a thousand years
- Some examples of cures used in Medieval England

Exam Question Time! What kind of question could they ask you?

2. Explain the significance of the work of Hippocrates and Galen in the advancement of medicine.

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2. Period **Early Modern (Renaissance)**
Topic **Ideas about Disease**

What was happening to help understanding of disease?

What can you remember?

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What were the new ideas during the Renaissance that helped medicine? Hint new technology, artists, challenges to the church.

Unfortunately, medicine was not getting much better. Most people still believed the miasma theory.

The miasma theory was....

Some people went to quack doctors who were not trained. Herbal cures continued to be important and books like Culpeper were a useful way to look at remedies for those who could read or hear what was in it.

An example of a Culpeper cure was...

Two men helped to move medicine forward by their study of anatomy and they were able to (at last) prove that much of what Galen had written was unfortunately wrong.

Vesalius was a doctor who believed that doctors needed to understand anatomy. He devoted much of his time to the dissection of corpses. The Christian church was still opposed to this and sometimes he had to get bodies of criminals from the gallows. In 1543 Vesalius published *The Fabric of the Human Body*. It provided the most complete and accurate description of the human body up to that time.

William Harvey was an English doctor who took Vesalius' work a stage further. He had been taught at university that the blood moved around the body one way, but this was not really understood. He used slow blooded animals and was able to prove that the heart pumped the blood around the body in a circular motion. He showed that Galen was wrong about the liver making new blood. Many read his books but some doctors objected to him criticising Galen.

Vesalius and Harvey were important because...

At the end of the Renaissance / Early Modern period a country doctor called **Edward Jenner** put forward a very important medical development that would save millions of lives in the long term.

What do you remember about him? Hints: Cowpox – smallpox James Phipps
£100,00 from the government Opposition Small pox vaccinations compulsory 1853

Factors

What factors helped Vesalius, Harvey and Jenner to make medical breakthroughs?

How did reading Galen's books help Vesalius? Hint, what did he find wrong?

How did technology help Harvey? Hint, it had something to do with water!

How did having a scientific approach help Jenner? Hint, what did he observe, what was his theory, how did he experiment?

Words and Names that you HAVE to learn

1. Vesalius
2. Harvey
3. Jenner

Facts that you HAVE to learn

- The new inventions of the Renaissance helped medicine
- The Printing press was invented in Germany in around 1450
- The Microscope was invented in the late 1590s
- Artists like Leonardo da Vinci drew accurate paintings of the human body

Exam Question Time! What kind of question could they ask you?

2. Explain the significance of Jenner's work in the development of medicine. (8)

3. Period 19th century Topic Ideas about Disease

What was happening to help understanding of disease?

What can you remember about the 19th Century?

Hint: Miasma, Industrial revolution, Crowded living conditions

Louis Pasteur

In the 19th Century, at last there were some breakthroughs in medicine. It really started with the Frenchman Louis Pasteur in 1861. He was not a doctor, but he was a scientist and he had been asked by beer and wine companies in France to research why their beer and wine went off. This helped him to discover that germs didn't just appear out of nowhere, they grew where there was disease and decay. Using a microscope, he was able to show other scientists the germs. This meant the miasma theory was not true. Pasteur also developed Jenner's work on vaccines and developed new vaccines, such as ones against chicken cholera and rabies.

Two German scientists carried on his work. Germany and France were at war during this time, so they were very competitive.

Robert Koch

Pasteur's germ theory was amazing, but he had not found which germs caused which diseases. Koch was a doctor and he specialised in bacteriology. He set about identifying specific germs which could then be targeted for treatment. He used a chemical dye that helped to stain the germs so they could be seen under the microscope. His amazing work led to the discovery of the germs that cause anthrax and tb.

Ehrlich

He was one of Koch's students and developed Koch's work by looking for the exact chemical that would target specific diseases. He worked on a drug to cure the STD syphilis. To do this he experimented with the drug Salvarsan 606 times until he found the exact chemical that would kill the germ and not damage the rest of the body. Salvarsan was known as a magic bullet as it targeted the specific germ and this was the start of chemotherapy.

Alongside these amazing developments hospitals also improved in the 19th Century mainly due to...

Florence Nightingale

During the Crimean War she cleaned up hospital wards and trained nurses to do the same. As a result, she cut the mortality rates from 40% to just 2%. Returning to Britain after the War, she wrote *Notes on Nursing*, explaining her ideas on how nurses should be trained and how they should treat the sick. She set up Britain's first nurse training school at St. Thomas' Hospital. She raised £44,000 to fund it herself.

Factors

Why were these **individuals** able to make such amazing breakthroughs?

How did having a scientific approach help Pasteur? Hint, what did he observe, what was his theory, how did he experiment?

How did war encourage Pasteur and Koch to come up with their ideas? Hint, which countries were they from?

War was important to Nightingale too but what else helped her? Hint, think about her personality.

How did technology help Koch? Hint, something to do with colour

How did Ehrlich learn from Pasteur and Koch and their scientific methods? Hint, he did something 606 times.

What was it about the personality of all three of these individuals? How would you describe them?

Words and Names that you HAVE to learn

1. Pasteur
2. Koch
3. Ehrlich

Facts that you HAVE to learn

- The germ theory 1861
- Pasteur found vaccinations for chicken cholera and rabies
- Kock found the germ that caused TB
- Ehrlich developed magic bullets

Exam Question Time! What kind of question could they ask you?

2.Explain the significance of Pasteur's work for the development of medicine.

4. Period **20th century**
Topic **Ideas about Disease**

Medicine improved a fantastic amount in the 20th century. *What new discoveries or developments can you remember?*

Alexander Fleming

Fleming was a doctor and during World War I, he noticed that antiseptics seemed unable to prevent infection, particularly in deep wounds. He decided to try to find something that could kill the bacteria which caused infections like septicaemia. In 1928 he discovered penicillin almost by accident. Returning from holiday, Fleming noticed that the bacteria he had grown in petri dishes and he had not washed up were being killed by a mould - penicillin. He used the word **antibiotic** to describe penicillin. However, Fleming did not have the money or the facilities to continue his research.

Was he very lucky or very clever? Or both?

Florey and Chain

In the late 1930s two Oxford scientists, Ernst Chain and Howard Florey took up the challenge. In 1939, with the start of war, they were given extra government funding. The problem was in producing enough penicillin. When the USA joined in WW2 the American government and some big drugs companies funded extra research into how to make penicillin in a chemical form. By 1943, penicillin was being mass produced, and on D-day in 1944 2.3 million doses were used helping the allies to win the war.

Factors

What helped these three individuals to have medical breakthroughs?

How did war help penicillin to be developed? Hint both WW1 and WW2 were important.

How did governments help? Hint which governments paid to make chemical penicillin?

How did technology help? Hint who wants to eat mould!

Words and Names that you HAVE to learn

- 1. Fleming
- 2. Florey and Chain
- Antibiotic

Facts that you HAVE to learn

- Penicillin mould discovered in 1928
- Penicillin was used to save lives in WW2

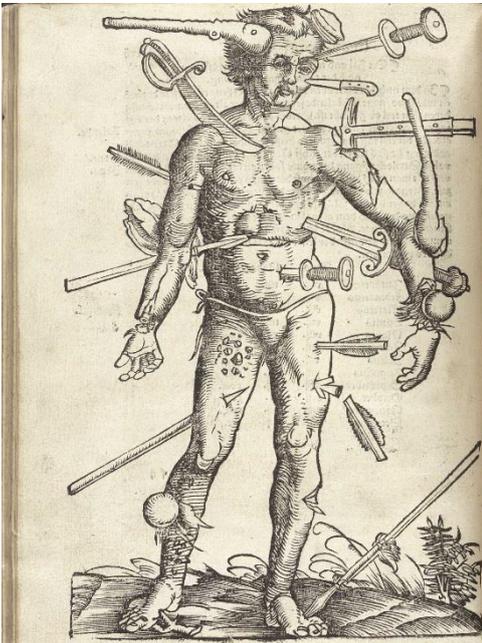
Exam Question Time! What kind of question could they ask you?

2.Explain the significance of penicillin to the development of medicine.

Topic 2 – Surgery

1. Period **Medieval** Topic **Surgery**

In Medieval times there were lots of wars, but we don't have much evidence about the treatments. But we do have this drawing called '**Wound Man**' which was drawn in the 1400s.



What can we infer about how doctors learnt more about medicine from wars in the Medieval Period?

Barber Surgeons

Luckily, they had to have some training before they could do small operations and to pull out teeth!

Why were barbers allowed to do this? Hint, what else was available? What was their experience?

Words and Names that you HAVE to learn

- Wound man
- Barber surgeons

2. Period **Renaissance / Early Modern** Topic **Surgery**

When soldiers had serious wounds or lost limbs, burning oil was used to seal the wound.

How painful was that?

There were plenty of wars in this period and a French surgeon made a great breakthrough.

Pare

Pare was on the battlefield in 1536 and ran out of the oil. He decided to use a lotion of **oil of roses, egg and turpentine** on the wounds instead. The treatment worked and was much less painful. Some surgeons ignored his ideas as burning oil was quicker! Pare also worked on making artificial arms and legs for soldiers and wrote his theories up in a book.

Factors

What helped more; Pare and his brilliant ideas or the fact that war meant there were lots of patients?

Words and Names that you HAVE to learn

Pare

Oil of roses, egg and turpentine

3. Period **19th Century** Topic **Surgery**

At last surgery made great improvements in the 19th Century

John Hunter

John Hunter became an army surgeon in 1760, and in 1763 left the army to open a surgical practise. In 1768 he became a surgeon at St George's Hospital. Hunter was an early promoter of careful observation and surgeries. He also believed in leaving as much as possible to nature. Many surgeons learnt from his ideas.

By the mid-1800s surgery was still pretty brutal. To be able to carry out operations safely three areas had to be understood:

- **PAIN**
- **INFECTION**
- **BLOOD LOSS**

James Simpson

Simpson was a scientist who experimented in anaesthetics. In 1847, he used chloroform after experimenting on himself and friends, to reduce pain in childbirth. Chloroform induces dizziness, sleepiness and unconsciousness in patients but it is hard to get the amount right. This resulted in opposition, but this was partly overcome when in 1853 Queen Victoria used chloroform while having a baby, which made its use more popular.

This was an amazing breakthrough but it didn't make surgery any safer in the short term. Why not?

- 1.
- 2.
- 3.

Joseph Lister

The next area to be understood was anaesthetics and it was Joseph Lister who came up with the breakthrough for pain.

It was partly the work of Louis Pasteur in finding the germ theory in 1861 that helped him. Lister had seen carbolic spray used to treat sewage. In 1865, after experiments he found that a thin mist of carbolic acid sprayed over the wound during surgery limited infection. By following this with careful bandaging, the wound would heal and not develop gangrene. By doing this he was able to reduce the death rate in his operations from 46% to 15% in only 3 years. In 1875 he invented a machine that sprayed carbolic acid over the entire room.

What were the problems at first with using carbolic as an antiseptic?

Words and Names that you HAVE to learn

Simpson
Anaesthetic
Chloroform
Lister
Antiseptics
Carbolic acid

Facts that you HAVE to learn

- Chloroform was discovered in 1847
- Queen Victoria used it in child birth in 1853
- Carbolic cleaned sewers and Lister used it in the operating theatre

4. Period 20th Century

Topic Surgery

In the 20th century fantastic developments were made in surgery and now it is much safer.

What is:

Aseptic surgery-

Key hole surgery-

Important developments were:

- Blood transfusions
- X rays
- Plastic surgery

It was war that helped all three of these breakthroughs.

In WW1 mobile X-rays were invented that allowed surgeons to operate without too much delay in clearing stations near the front. Also, in WW1, Blood transfusions were used by the British Army. This was possible because blood groups had been discovered by the Austrian scientist Landsteiner and by 1917 blood was stockpiled and stored for up to 28 days

In WW2 many pilots suffered from severe burns and Sir Archibald McIndoe worked on these patients and developed technique for skin grafting. His patients set up the 'Guinea Pig Club' to celebrate his work.

Factors What helped the breakthroughs in surgery?

Individuals – who made important discoveries? Why them?

How important was Science and technology? Hint, both Simpson and Lister used chemicals.

How helpful was communication? Hint, what did Lister learn from Pasteur?

Exam Question Time! What kind of question could they ask you?

2. Compare the work of Pare and Simpson. In what ways were they similar? (8)

Exam Question Time! What kind of question could they ask you?

4. How important has war been in the development of surgery since Medieval times? (16)

Topic 3 Public Health

1. Period **Medieval** Topic **Public Health***

*Public Health is about helping to keep people healthy and to protect them from threats to their health.

In Medieval times there was not much public health at all. There were hardly any rules about buildings or waste disposal and clean water in short supply. Cesspits (pit to dispose sewage) were often located near wells and one contaminated the other

It wasn't all filth: some towns had public bath houses where you could pay for a bath if you could afford it. It has been discovered that in Coventry the council made an effort to clean up the city. In 1421, the mayor passed a rule that every man to clean the front of his house every Saturday or pay a fine of 10 pence!

The Black Death, 1348-49

It may have come from Asia. Historians estimate that it killed 50-66% of people. Many people believed it was an act of God. But something good came out of this plague. The king ordered that people marched through the streets praying to God and that people had to help to clean the filthy streets. This was the start of Public Health in England. Unfortunately, these instructions from the king were forgotten after the Black Death was over.

Words and Events that you HAVE to learn

- Public health
- Bath house
- Black Death 1348-9. 50 – 60% died

2. Period **Renaissance / Early Modern** Topic **Public Health**

There was much improvement to Public Health in this period. People still lived in terrible and dirty towns.

But another plague brought some improvements

The Great Plague 1665

Like the Black Death people could not pin point to one cause, but they did notice that there were more Plague victims in poorer and dirtier parts of London- began making the links between disease and dirt. The King and Mayor of London introduced a series of measures to try and prevent the spread of the disease.

- All public entertainment to be stopped
- All dogs and cats are to be caught and killed
- Fires to be lit in the streets, to drive away 'bad' air
- Houses with plague victims to be quarantined and sealed up for 40 days and a red cross- painted on the door.
- Visitors to London had to produce a bill of health from a doctor.

Similarities between the Great Plague and the Black Death

- Many attributed both to religion- God had sent the plague as a punishment for sin.
- Emphasised religion as a way of treating and preventing the spread of the disease.
- Links made between dirt and disease.
-

Words and Events that you HAVE to learn

The Great Plague 1665

Quarantine

Exam Question Time! What kind of question could they ask you?
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3. In what ways were the Black Death and The Great Plague similar?
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3. Period 19th Century Topic Public Health

By the 1800s the government still was not providing much public health support to people. And the state of the streets and towns was getting worse.

Why were living conditions getting worse? Hint, the industrial revolution.

The government were not keen on improving public health as it would be very expensive and they had a **laissez faire** attitude to health. The government believed that people should look after themselves and if they were poor and sick it was mainly down to laziness.

During the 19th Century things changed and the government started to take more responsibility for public health. **Why this change?**

Cholera was the BIG killer of the 19th century and there were three big outbreaks. This forced the government to take notice.

1832 – 50,000 died

1848 – 60,000 died

1854 – 20,000 died

Also, in 1856 there was a Great Stink and it became clear that something had to be improved to get rid of all the sewage in the city.

Two individuals helped to push the government into action.

John Snow

John Snow was a surgeon in London and in 1849, after the 1848 epidemic, he published a book arguing that cholera was spread by dirty water rather than through the air. Medical opinion ignored his findings. In

the first 10 days of the cholera outbreak in 1854, over 700 people died in his area Snow mapped the location of each death and worked out that the one thing they had in common was that they had all collected their water from the same pump on Broad Street. He also noticed that men in a nearby brewery, who had drunk beer rather than water, hadn't died. It was later discovered that a cess pit, less than 1 meter from the water pump, was leaking dirty water into the water supply.

Edwin Chadwick

Chadwick was a lawyer who investigated the links between bad health and poverty. He published a report in 1842, which argued for an urgent need to improve living conditions to help the economy. He said that people could work better if they were well and they could not be well living in such filthy towns. He recommended; getting rid of waste, providing clean water, each town having a health inspector.

At last, in 1848 the government took action

The Public Health Act, 1848

Towns were encouraged to appoint an officer of health, who had to be a legally qualified medical and to improve the water in their area, e.g., collect rubbish, build sewers and provide a clean water supply. But it was not compulsory.

The Public Health Act, 1875

Finally, the Public Health Act of 1875, forced councils to carry out improvements. These included providing clean water and sewage systems and the appointment of a Medical Officer of Health in every area. At last, this was now compulsory.

Words and Names that you HAVE to learn

- Cholera
- John Snow
- Edwin Chadwick
- Laissez faire

Facts that you HAVE to learn

- There were 3 cholera outbreaks
- The Public Health Act, 1848
- The Public Health Act, 1875

Factors

Public health did improve in the 19th Century.

What do YOU think helped the most? How did these factors help?

Individuals....

The government....

Chance (i.e., the cholera outbreaks)

4. Period 20th Century **Topic Public Health**

At the start of the 20th century public health was still not good enough. In fact, when young men went for a medical to go and fight in the Boer War in 1899 in some places 90% of the were not healthy enough. This was shocking considering how powerful the British Empire was at time. The government had to do something.

Two individuals published shocking reports

- **Charles Booth** published *Life and Labour of the People*, in 1889. He found that 35% of London's population were living in utter poverty.
- **Seebohm Rowntree** did the same in York. 1897-98 he interviewed 46,000 citizens in York. Found that nearly ½ of working-class people lived in poverty

Liberal Reforms – between 1906 and 1914 the Liberal Government brought in new laws to help people...

- **Free School Meals 1906**

Local councils were encouraged to give free meals to children from poor families. By 1914, over 150,000 children were having a daily free meal, every day. However, less than half the education authorities did this as it was not compulsory.

- **Old Age Pensions 1908**

Weekly pensions were provided by the Government for the elderly. 5s per week to single people over 70, 7s 6d to married couples.

How were these two laws such a significant improvement?

How were they limited?

The Welfare State and the NHS

After the British people had lived through another world war, by 1945 there were demands for the government to take care of the people better and create a Welfare State which would include a free health system.

The Beveridge Report

William Beveridge was an economist who believed that society should take care of everyone from "The cradle to the grave." He said that there were 5 evils that had to be defeated, Want, Ignorance, Squalor, Idleness and Disease.

How would people at the end of the war have felt about Beveridge's ideas?

The NHS

After WW2 the Labour party won the 1945 general election.

Aneurin Bevan was the minister of health, responsible for setting up the NHS.

On 5 July 1948, the government took all medical services and there was free diagnosis and treatment for all. Most people were thrilled that they would no longer have to pay for going to the doctor, the dentist, the optician or to hospital.

There were some problems with the NHS at the start. Can you name two?

1.

2.

Words and Names that you HAVE to learn

- Charles Booth
- Seebohm Rowntree
- Aneurin Bevan
- NHS 1948

Facts that you HAVE to learn

- The NHS provided free treatment.

Factors

Public health REALLY improved in the 20th Century.

What do YOU think helped the most? How did these factors help?

Individuals

The government

Chance (i.e., the cholera outbreaks)

Exam Question Time! What kind of question could they ask you?

4. Were individuals the most important reason for improvements in public health from c.1000 - modern?

A reminder of the AQA Specification for this course

Part One: Medicine Stands Still

- Medieval medicine: approaches including natural, supernatural, ideas of Hippocratic and Galenic methods and treatments; the medieval doctor; training, beliefs about cause of illness.
- Medical progress: the contribution of Christianity to medical progress and treatment; hospitals; the nature and importance of Islamic medicine and surgery; surgery in medieval times, ideas and techniques.
- Public health in the Middle Ages: towns and monasteries; the Black Death in Britain, beliefs about its causes, treatment and prevention.

Part Two: The Beginnings of Change

- The impact of the Renaissance on Britain: challenge to medical authority in anatomy, physiology and surgery; the work of Vesalius, Pare, William Harvey; opposition to change.
- Dealing with disease: traditional and new methods of treatments; quackery; methods of treating disease; plague; the growth of hospitals; changes to the training and status of surgeons and physicians; the work of John Hunter.
- Prevention of disease: inoculation; Edward Jenner, vaccination and opposition to change.

Part Three: A Revolution in Medicine

- The development of Germ Theory and its impact on the treatment of disease in Britain: the importance of Pasteur, Robert Koch and microbe hunting; Pasteur and vaccination; Paul Ehrlich and magic bullets; everyday medical treatments and remedies.
- A revolution in surgery: anaesthetics, including Simpson and chloroform; antiseptics, including Lister and carbolic acid; surgical procedures; aseptic surgery.
- Improvements in public health: public health problems in industrial Britain; cholera epidemics; the role of public health reformers; local and national government involvement in public health improvement, including the 1848 and 1875 Public Health Acts.

Part Four: Modern Medicine

- Modern treatment of disease: the development of the pharmaceutical industry; penicillin, its discovery by Fleming, its development; new diseases and treatments, antibiotic resistance; alternative treatments.
- The impact of war and technology on surgery: plastic surgery; blood transfusions; X-rays; transplant surgery; modern surgical methods, including lasers, radiation therapy and keyhole surgery.
- Modern public health: the importance of Booth, Rowntree, and the Boer War; the Liberal social reforms; the impact of two world wars on public health, poverty and housing; the Beveridge Report and the Welfare State; creation and development of the National Health Service; costs, choices and the issues of healthcare in the 21st century.