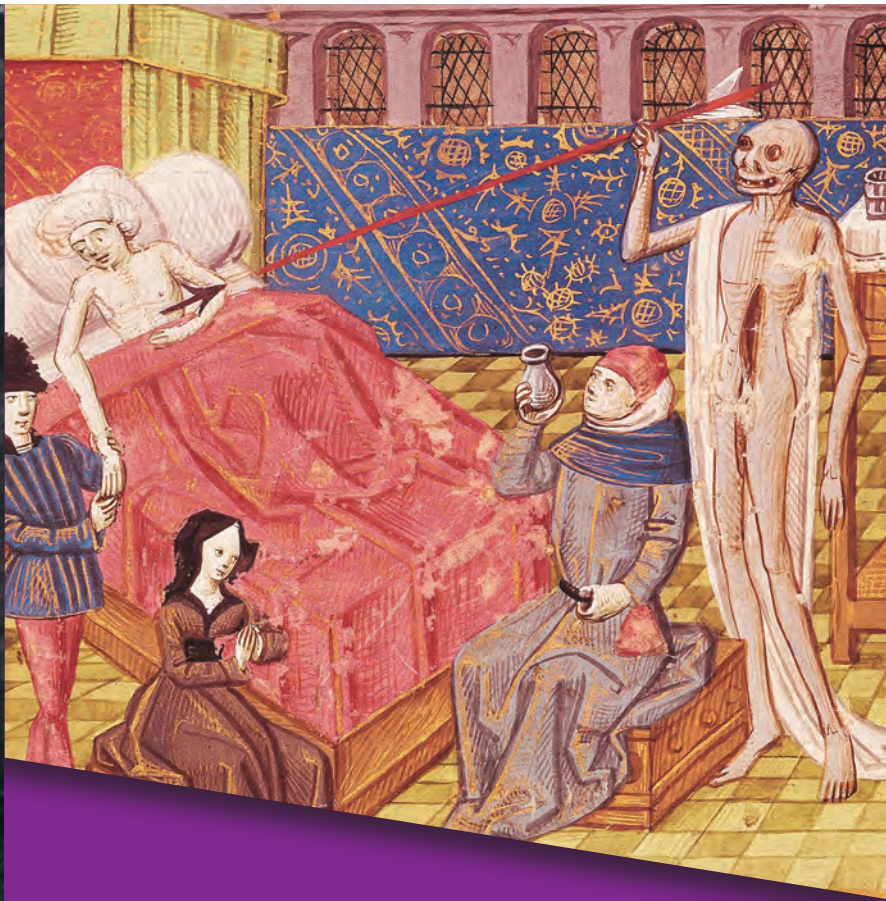


HODDER **GCSE** HISTORY FOR **EDEXCEL**



MEDICINE THROUGH TIME

c.1250–present

Ian Dawson

2 Medicine in medieval England, c.1250–c.1500

The headline news in this chapter is 'No important breakthroughs in medicine!' Does the lack of breakthroughs mean that people in the Middle Ages were not very clever? No, that's certainly not true – which makes the lack of breakthroughs puzzling. The answers lie in the illustration below. If you can't make sense of it now, you will by the end of this chapter.

2.1 Understanding the Middle Ages



What can you work out from these illustrations about medicine in the Middle Ages?



UNDERSTANDING THE MIDDLE AGES

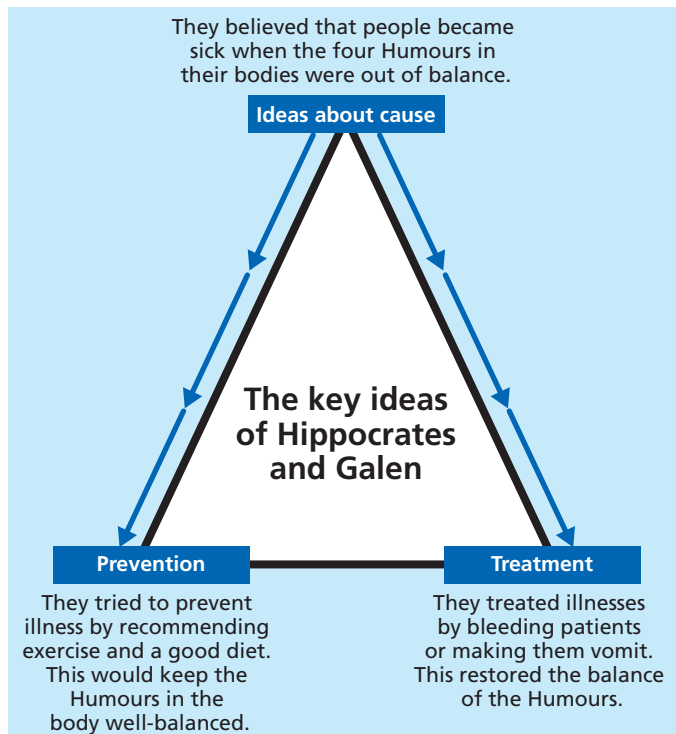
To understand medieval medicine you need to understand medieval life and thinking. These questions will diagnose any misunderstandings you have.

1. True or False?
 - a) People did not wash or try to keep clean.
 - b) You could be fined for throwing rubbish in the street.
 - c) People believed that God sent diseases.
2. How influential was the Christian Church?
 - a) Very.
 - b) Fairly.
 - c) Not at all.
3. Who controlled education?
 - a) The king and his council.
 - b) The bishops and local priests.
 - c) The schools.
4. What were the king's two chief duties?
 - a) Defending the country.
 - b) Improving people's health.
 - c) Keeping law and order.
5. How did ideas spread?
 - a) Through printed books.
 - b) Through handwritten books.
 - c) By people talking to each other.
6. Which of these statements best fits people's attitudes?
 - a) We must respect traditional ideas, especially what is written in the Bible.
 - b) We must seek out new ideas. It is important to challenge old ideas.

Medieval attitudes – the example of Hippocrates and Galen

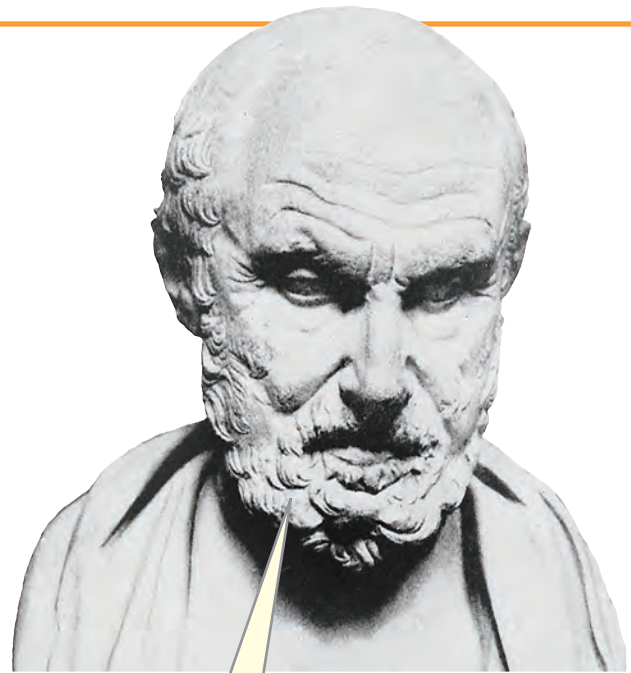
One vital thing to understand about the Middle Ages is that people respected traditional ideas. Doctors therefore followed the ideas of Hippocrates who had lived over 1500 years earlier in Greece. Claudius Galen was also Greek but worked in Rome 500 years after Hippocrates and was even more respected. He wrote over 300 medical books that were still trusted by doctors in the Middle Ages.

What did Hippocrates and Galen say? The triangle below gives you a summary and the speech bubble and illustrations on the right explain their ideas about what caused illnesses (you will read more about these ideas on page 28).



THE IDEAS OF HIPPOCRATES AND GALEN

1. Explain the Theory of the Four Humours in your own words.
2. What did people often see when they were ill that made the Theory of the Four Humours believable?
3. How does the Theory of the Four Humours explain Hippocrates' and Galen's methods of treating and preventing illness?
4. Which detail in the illustration on page 11 does this page help to explain?



▲ Hippocrates (c.460BC–c.370BC) was a Greek doctor and teacher of doctors.

The body contains four Humours or liquids: blood, phlegm, yellow bile and black bile. When we are healthy these Humours are perfectly balanced in our bodies but we fall sick when we have too much or too little of one Humour. You can see the evidence when you are sick and your body gets rid of excess Humours as shown in the illustrations below.

Black bile People can vomit a dark evil-smelling liquid



Blood People may cough blood or have nosebleeds



Yellow bile Sick people can vomit up their half-digested food



Phlegm The sick sometimes sneeze revolting phlegm

Understanding the Middle Ages

The questions on page 11 introduced some key features of medieval life. Understanding these features is vital for understanding medieval medicine. It is also vital to respect the people of the Middle Ages in order to understand them properly, not laugh at them because they were different. The diagram below summarises the key features of medieval life.

KEY FEATURES OF MEDIEVAL LIFE

1. Do any of the features in the diagram below help to explain the illustration on page 11?
2. Which of these features might have:
 - a) helped improve medicine and people's health
 - b) prevented improvements?
3. What connections can you see between any of the features in the diagram?

The Church

The Christian Church was an organisation which spread all over Europe and was headed by the Pope. In England the head of the Church was the Archbishop of Canterbury. Every region had a bishop and every village had a priest. This network of priests gave the Church great influence over everyone's ideas. The largest libraries were in monasteries where monks read and copied books by hand.



The king and his government

The king's main tasks were to defend his people in wartime and to keep the country peaceful by punishing lawbreakers. Taxes were only raised to pay for wars. Keeping streets clean and towns healthy was the work of local councils, but they had little money to pay for this.



Work and harvests

90 per cent of people worked as farmers to grow the food everyone needed. This was hard, back-breaking work. This constant hard work meant there was little time for education or reading. There were years when poor harvests meant that people went hungry.

Communications

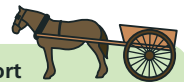
Printing came to England in the 1470s but until then books had to be written out by hand. This meant there were not many books and knowledge was slow to spread.



Key
features of
medieval life
c.1000–c.1500

Food supplies and transport

Animals were taken to towns to be killed for food. The animals' dung and their butchery created a lot of dirt in the streets. Horses were the main form of transport and also pulled carts so they added considerably to the dirt in the streets that needed cleaning up.



Education

The Church controlled education, especially in the universities where physicians were trained. By the fifteenth century up to 50 per cent of people in large towns could read. The books most commonly read were prayer books and other religious books.



Attitudes

People were taught to respect what was written in the Bible and other ancient books. They were not encouraged by the Church to think for themselves or challenge traditional ideas.



ASKING QUESTIONS ABOUT MEDIEVAL MEDICINE

Learning to ask good questions is an important historical skill. On page 14 we introduce the main Enquiry Question on medieval medicine, so this is a good time to focus on asking questions.

1. Some questions are 'bigger' – more important – than others. Which of these four questions are the bigger ones for understanding the history of medicine – and why?
 - a) What diseases did people die from in the 1800s?
 - b) Why was Pasteur's work so important in the history of medicine?
 - c) Why was the pace of change in medicine so fast in the twentieth century?
 - d) What was Vesalius's first name?

2. Make a list of questions you want to ask about medieval medicine. Divide your list into 'big' and 'little' questions. Use the question starters below to help you.

When ...?

What ...?

Why ...?

How ...?

What happened ...?

Where ...?

What effects ...?

How significant ...?

Did it really ...?

Who ...?

Did they ...?

2.2 Your Enquiry Question

Like you, we thought of lots of questions about medieval medicine. Did you think of these?

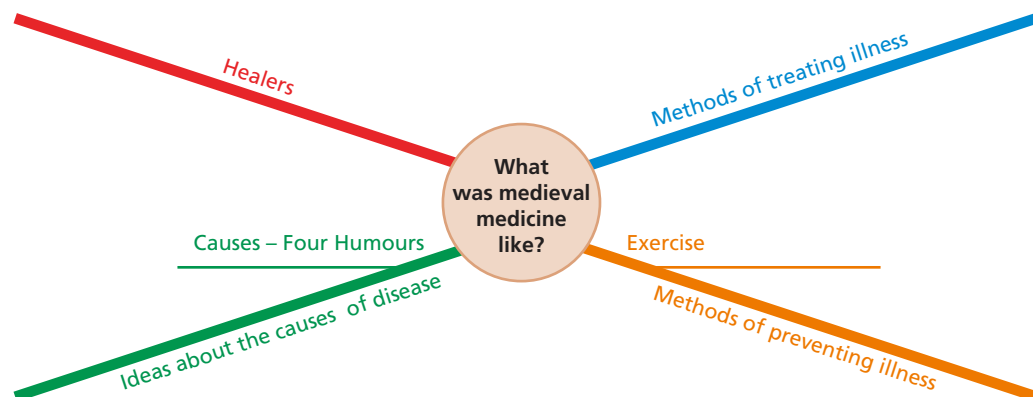


These are all good questions, but we have chosen the question in the pink bubble as our Enquiry Question, the question to investigate in this chapter. We chose it for three reasons:

- 1 It's the 'biggest' question in the list because the answer helps you understand medicine throughout this period.
- 2 It's a puzzling question. Medieval people were just as intelligent as us and they did want to be healthier and stop diseases spreading – but medicine did not improve. Why not?
- 3 Change and continuity are important ideas in your exam course.

Beginning your enquiry

Before you begin to investigate why medicine changed so little, you need to find out what medicine was like in the Middle Ages. You are going to research this on pages 15–21 and record a summary of your findings on a memory map like the one below.



The memory map is the first Knowledge Organiser in this book. On page 4 we said we would help you to avoid common mistakes. One mistake is to make notes so full of detail that you cannot see the key points you need. Memory maps are excellent for recording key points. They help with revision too. This is how to build up your memory map.

Step 1: Use A3 paper. Space is important. The final version should not be cramped.

Step 2: Add information to the map as you read pages 15–21. Use pencil so you can make corrections later. Remember:

- Use key words or phrases. Do not write full sentences.
- Use pictures/images/diagrams to replace or emphasise words. Some of you will find it easier to remember visual images than words.
- PRINT words to make them stand out.

Step 3: When you have finished, redraft your map to make sure everything is clear.

Use the information on pages 12 and 13 to begin filling in your memory map.

2.3 Case study: dealing with the Black Death 1348–49

The pestilence mentioned in the illustration on page 11 is also known as the Black Death, or the plague. Studying the ways people reacted to the Black Death provides a good introduction to medieval medicine, but first this page tells you about its terrifying impact.

The Black Death probably first broke out in China then spread to India and across Europe until it reached England. What happened next was described by a monk writing at a monastery in the south of England:

In 1348 the cruel pestilence arrived at a port called Melcombe in Dorset. It killed numberless people in Dorset, Devon and Somerset and then it came to Bristol where very few were left alive. It then travelled northwards, leaving not a town, a village or even, except rarely, a house, without killing most or all of the people there. There was such a shortage of people that there were hardly enough living to bury the dead.

Historians estimate that at least 40 per cent of the population died, with an even higher death rate in towns and ports. To many people the world seemed to be ending. One survivor scratched these words on the wall of a church in Hertfordshire:

1349 the pestilence 1350 pitiless, wild, violent, the dregs of the people live to tell the tale.

Whoever scratched those words was desperately afraid, wondering what the future would bring. Normal life seemed to have ended. It was a feeling shared by an Irish monk, Brother John Clynne, who wrote:

I, waiting among the dead for death to come, leave parchment for continuing the work, in case anyone should still be alive in the future and any son of Adam can escape this pestilence and continue my work.

Even now historians are not completely certain what the pestilence was. It may have been the bubonic plague, which spreads when fleas bite an infected rat and then pass the disease onto other rats and to humans. People bitten by infected fleas or rats developed painful swellings called buboes in their armpits and groins. Blisters appeared all over their bodies, followed by a high fever, severe headaches, unconsciousness for several days and then death.

The pestilence did not go away after the first outbreak in 1348–49. Every few years it broke out again and carried on killing large numbers of people, especially in towns, for 300 years.



▲ A chronicler in London in the 1300s described how ‘they dug broad, deep pits and buried the bodies together, treating everyone alike, except the most eminent’. Archaeologists excavating towns have discovered the evidence to support the chronicler’s statement. In the 1980s graves containing victims of the Black Death were found in London, stacked five deep. More burial pits have been found since then, such as the one shown here, in London and in other towns. Skeletons provide historians with a lot of useful evidence: about the height and strength of people, sometimes what injuries and diseases they suffered from, and what kinds of work they did.

THE BLACK DEATH

1. Information speed test! How quickly can you find the answers to these questions?
 - a) When did the Black Death arrive in England?
 - b) What percentage of people died?
 - c) What were buboes?
2. How do skeletons provide valuable evidence for historians?
3. From what you have read so far, why do you think people were unable to stop the Black Death spreading and killing so many?

The Black Death: causes, treatments and prevention

The Black Death was terrifying. Fear and panic drove people to try desperate remedies. However, most ideas about what caused the Black Death were rational, fitting people's ideas about how the world worked. Monks scoured books in monastery libraries to find treatments and cures. People stopped strangers entering their villages in case they were carrying the plague. People did everything they could to prevent plague spreading, given the knowledge and skills they had. The headings on these pages identify people's ideas about what caused the Black Death. In those sections you will also find information about prevention and a little about treatments. There is more information about treatments in a separate box on page 17.

God's punishment

The most widely believed explanation was that God had sent the pestilence to punish people for their sins. In September 1348 the Prior of Christchurch Abbey, Canterbury wrote:

Terrible is God towards the sons of men ... He uses plagues, miserable famines, wars and other suffering to arise and to terrify and torment men and so drive out their sins. Thus England is struck by the pestilence because of the increasing pride and numberless sins of the people.

This was a logical explanation as people believed that God controlled all significant events. Plague was therefore part of God's plan to make people less sinful and save them

from Hell. The clinching evidence that God had sent the pestilence was that no human being could stop or cure it. Only God could do that.

Therefore the only way to stop the pestilence spreading was to show God that people were sorry for their sins and plead for forgiveness. The Archbishop of York wrote:

The only hope is to urge God with prayers that he, the kind and merciful Almighty God, should turn away his anger and remove the pestilence and drive away the infection from the people.

Many attempts to prevent plague were therefore linked to religion:

- The king and bishops ordered services and processions in every church at least once a day, in which people prayed for forgiveness and asked God to stop the disease.
- People lit huge numbers of candles in churches as offerings to God or fasted (stopped eating) to show they were sorry for their sins.
- Many went on pilgrimages to pray for God's forgiveness at the tombs of saints.
- Activities that might be insulting God were ended. In Suffolk they stopped using churchyards for wrestling matches.
- Some people punished themselves in public and begged God for forgiveness, as you can see in the picture below.
- People prayed to God to let their family and friends who had plague recover.



◀ This picture shows the Flagellants who arrived in London from Holland, according to the chronicler Robert of Avesbury. They walked barefoot through the city twice a day, wearing only a linen cloth. They whipped themselves to show God they had repented their sins and asked God to be merciful.

Bad air

People also blamed miasma – bad, stinking air – for the Black Death. In April 1349, King Edward III wrote to the Mayor of London ordering him to have the ‘filth lying in the streets removed’ and the city cleansed:

...from all odours so that no great mortality may arise from such smells ...the filth from the houses is infecting the air, endangering people through the contagious sickness which is increasing daily.

People therefore believed that dirt poisoned the air and the poisoned air then made them ill. However, this was not a separate theory. They knew God allowed the air to be poisoned as part of his plan to cleanse people of sin.

London’s records show how people tried to prevent dirt creating bad air. By the 1370s there were at least twelve teams of rakers clearing animal dung from the streets. Fines for throwing litter were increased. Butchers were punished for letting blood and the remains of slaughtered animals dirty the streets. Other towns used the same methods to clean streets and water supplies.

Cleaning was not the only way of purifying the air. People:

- carried sweet-smelling herbs or lit fires to overpower the bad air
- kept the air moving by ringing bells or keeping birds to fly around the house.

The impact of the planets

Another explanation was that movements of the planets had caused the disease. People believed that God controlled the planets so this explanation also linked to religion. One writer said:

For God has said, ‘At my command, let the planets poison the air and corrupt the whole earth.’

Physicians believed the stars and planets affected people’s bodies, so it was logical that planets could cause disease. The science of **astrology** was an important part of the training of doctors in the 1300s.

The Theory of the Four Humours

The wealthy could also consult a university-trained physician. A physician, John of Burgundy, wrote in 1365 that Galen (of course!) had explained the cause of plague:

Many people have been killed by the plague, especially those stuffed with evil humours. As Galen says, the body does not become sick unless it contains evil humours.

TREATMENTS

We know far less about treatments than about prevention for two reasons. There was little time for treatment because victims died quickly. Frantic, fearful people (even those who could write) did not write down treatments. We do know that people put holy charms round the necks of sufferers and prayed to God to heal the sick. They cut open the buboes to let out the pus and even tried putting bread round the buboes and then burying the bread.

Physicians may have tried bleeding and purging if the sick survived long enough, or tried treatments based on Galen’s ‘treatment by opposites’. This involved using heat or hot food to treat patients who were cold or using cold and cold foods to treat fevers. Cold foods and baths were used to treat the Black Death and people were told to avoid hot food such as garlic and onions.

THE BLACK DEATH: A CASE STUDY

1. Complete this table showing the treatments and methods of prevention linked to each cause.

Cause	Treatments and methods of prevention
God’s punishment	
Bad air	
The impact of the planets	
The Theory of the Four Humours	

2. Which of the causes in the table would you describe as:
 - a) based on religion
 - b) logical and rational because there was evidence to support it
 - c) supernatural because there was no evidence to support it?
 Causes can go in more than one category: a), b) or c).
3. These causes were not completely separate but had links in people’s minds. Draw a diagram to show the links and annotate it to explain them.
4. Which of the factors below had the greatest influence on treatments and prevention of the Black Death and ideas about its causes? Give evidence to support your choice.
 - a) Government
 - b) Individuals
 - c) People’s attitudes
 - d) The Church
5. Use the information in your table to add to your memory map from page 14.

2.4 The main features of medieval medicine

Use pages 18–21 to complete your memory map from page 14. The questions on these pages help you pick out the key points.



Medieval healers

Who would you get help from if you were sick? It depended on how rich you were, whether you lived in a town or the countryside, and how desperate you were. Below is a summary of the main kinds of healers.

Women: wives, mothers and midwives

Women treated most illnesses and knew a wide range of remedies. Sometimes the local wise woman or lady of the manor was called to use her skills and knowledge. Women acted as midwives. In some towns midwives were apprenticed, had licences and were paid. Women could qualify as surgeons by working as apprentices, but were not allowed to become physicians.

Hospitals

The first wave of hospitals appeared in towns in the eleventh century. They mostly cared for older people who could no longer look after themselves. They were run by monks and nuns who provided food, warmth and prayers. Everyone could see the altar where priests said mass seven times each day. They rarely admitted the sick in case they spread infection. One of the most famous early hospitals was St Bartholomew's in London, founded in 1123. From the thirteenth century a second group of much smaller hospitals were founded, often by guilds, organisations of wealthier townspeople who worked in the same trade – shoemakers, silversmiths, etc. These hospitals cared for guild members and local citizens who could no longer look after themselves. By 1400 there were over 500 hospitals, many with only five or six beds. St. Leonard's in York was unusually large with over 200 beds. Occasionally, hospitals were set up to care for particular cases. In London, Richard Whittington, the Lord Mayor, paid for an eight-bed hospital for unmarried pregnant women. In Chester there was a hospital for the care of 'poor and silly persons'.

Physicians

Physicians trained at universities for seven years, reading books by Hippocrates, Galen and Arab medical writers such as Rhazes and Ibn Sina [Avicenna]. However there were fewer than 100 physicians in England in 1300 and only the rich could afford their fees.

Surgeons (also called barber surgeons)

Surgeons did not go to university but trained as apprentices through observing others. They improved their skills through practice and reading books on surgery. They did basic surgery such as bleeding, removing surface tumours, sewing up wounds and making splints for broken bones. There were no effective anaesthetics but occasionally they had to amputate a limb or remove painful bladder stones. Some surgeons used fine needles to remove cataracts from eyes to restore or improve sight.

Apothecaries

Apothecaries mixed ingredients to make ointments and medicines for physicians. They learned from other apothecaries. They also made their own medicines to sell to the sick.

- 1 Who treated:
 - a) the rich
 - b) pregnant women
 - c) those unable to look after themselves?
- 2 Who provided most medical care?
- 3 Who would usually not be let into a hospital?
- 4 How did surgeons and apothecaries learn their skills?



Treatments

Herbal remedies

1 Take onions and garlic



2 Pound them together



3 Take wine and bull's gall



4 Stand for nine nights in a brass vessel



5 Strain mixture through a cloth



6 Apply to sty with a feather



The modern verdict:
Onion and garlic kill bacteria

Bull's gall also attacks bacteria

Wine contains acetic acid which reacts with copper in the brass vessel to form copper salts which also kill bacteria

The result:
a practical cure

The cure for a sty in the eye shown in diagram A above comes from Bald's Leechbook, a tenth-century collection of treatments. **It continued to be used throughout the Middle Ages.** Many remedies did help the sick. Honey and plantain were often used in treatments for cuts, wounds and dog bites and they do contain ingredients which fight infection.

The most common remedies were made from herbs, minerals and animal parts. Most women knew them by heart, but they were written down in books called 'herbals', with pictures of the ingredients and explanations of the exact quantities of each ingredient and how to mix the potion. They included prayers to say while collecting the herbs to increase the effectiveness of the remedy.

Some cures combined prayer, magic and folklore, such as this cure for toothache recommended by John of Gaddesden, an English doctor in the 1300s.

Write these words on the jaw of the patient. 'In the name of the Father, Son and Holy Ghost, Amen. + Res + Pax + Nax + In Christo Filio.' The pain will cease at once. I have often seen it.

Another cure unlikely to work was for treating quinsy (an abscess in the throat):

Take a fat cat, flay it well and draw out the guts. Take the grease of a hedgehog, the fat of a bear, resins, fenugreek, sage, honeysuckle gum and virgin wax and crumble this and stuff the cat with it. Then roast the cat and gather the dripping and anoint the sufferer with it.

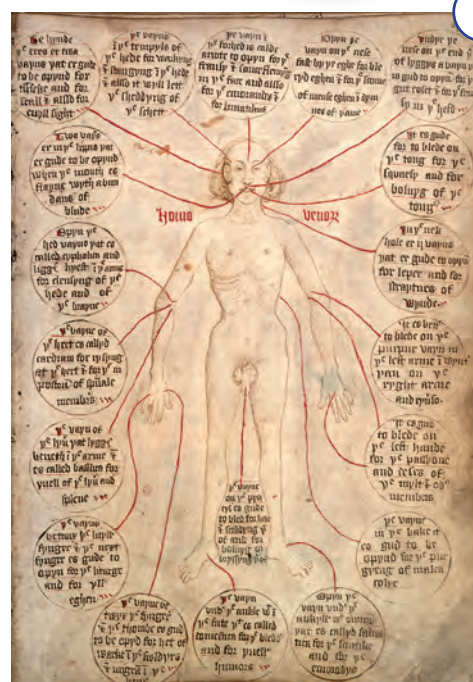
Bleeding to re-balance the humours

Bleeding, urine and zodiac charts were the three most common illustrations in medical books. This bleeding chart (B) showed the surgeon where to take blood from. Bleeding was usually done by a surgeon who warmed a bleeding cup, placed it over a cut and let the warmth draw out blood. Alternatively, leeches were used to sink their teeth into the patient and draw off blood, a method still used in the nineteenth century. Bleeding and purging the stomach were used to restore the balance of the humours. Purging meant swallowing herbs and animal fat to make the person sick or taking a laxative to empty their bowels.

Physicians used zodiac charts to decide the best time for treatment because they believed that parts of the body were linked to signs of the zodiac and the planets. The zodiac chart showed the doctor when to avoid treating each part of the body. When the moon was in Pisces, for example, the feet should not be treated.

SCIENCE NEWS

In 2015 scientists tested the cure shown above and have proved that it can kill MRSA, the hospital 'superbug'. Don't underestimate medieval treatments!



- 1 Were herbal remedies helpful?
- 2 What were zodiac and bleeding charts used for?

Preventing disease and illness

Physicians advised wealthy clients how to stay healthy, suggesting regular washing, cleaning teeth, combing hair, exercise in fresh air and bathing in hot water. The wealthy sent their urine to physicians to make sure that they were not falling ill. Simple, hand-copied guides to healthy living and how to avoid plague were sold in towns and around the country and so reached a wide audience. Many were written in rhyme so the details could be more easily remembered.

People also tried hard to keep their towns clean. Historians did not always believe this; 150 years ago Victorian historians described medieval towns as places of complete squalor, full of dirt. Nobody, they said, made any effort to keep towns clean. However, modern historians have done research which proves that Victorian writers were wrong. Many medieval towns, especially in the 1400s, were cleaner than industrial towns of the early 1800s. Town councils and individuals worked hard to keep streets clean, especially after outbreaks of plague. We should not be

surprised – medieval people were just as interested in staying healthy as we are today.

The diagram below shows that great efforts were made to keep towns clean. London was the first town in Europe to have a piped water supply. People were proud of their towns, wanting to be cleaner than neighbouring towns and attract visitors as pilgrims or for trade. Many individuals left money in their wills to pay for improvements such as building latrines or improving piping systems to bring fresh water. They expected this charity would help them reach Heaven sooner after they died. However, it was impossible to get rid of all the dirt created by animals, industries and people themselves. Cleaning cost more money than towns had when war or plague stopped trade. Therefore, despite all the efforts, medieval towns would have seemed to us dirty, smelly and very unhealthy places.

- 1 Why were towns so hard to keep clean?
- 2 What did people do to stay clean and healthy?



Too many animals

Problem: Cattle, sheep and geese continually arrived to be butchered for food. Horses were the main form of transport. These animals left trails of dung in the streets.

Solution: A small number of rakers were employed to clean the streets. Newcastle was one town where streets were paved to make them drier and easier to clean.



Keeping towns clean: problems and solutions

Dirty water

Problem: Water supplies were dirty because of industrial and human waste.

Solution: Gloucester was one of many places where monasteries and townspeople collaborated to bring fresh water to public wells through lead pipes. In Exeter aqueducts were built to bring fresh water to the town.



Waste and litter

Problem: People dropped waste and litter of all kinds and sometimes used streets as **latrines**. Butchers threw bloody waste and animal parts in the street.

Solution: Laws were passed to punish throwing waste. Butchers had to get rid of waste outside city walls. Public latrines were built in Norwich and many other towns, including over a dozen in London.



Leaking latrines

Problem: Latrines and cesspits were sometimes built by house-owners near water supplies and their contents emptied into streams and rivers used for washing and drinking water.

Solution: Regulations were introduced about where to build private latrines. Cesspits were lined with brick or stone and so were less likely to leak into drinking water supplies. In Hull, Southampton and other towns, night carts went round collecting human waste from cesspits.



Medical moments in time: 1390 – London in the time of plague

MEDIEVAL MEDICINE: A SUMMARY

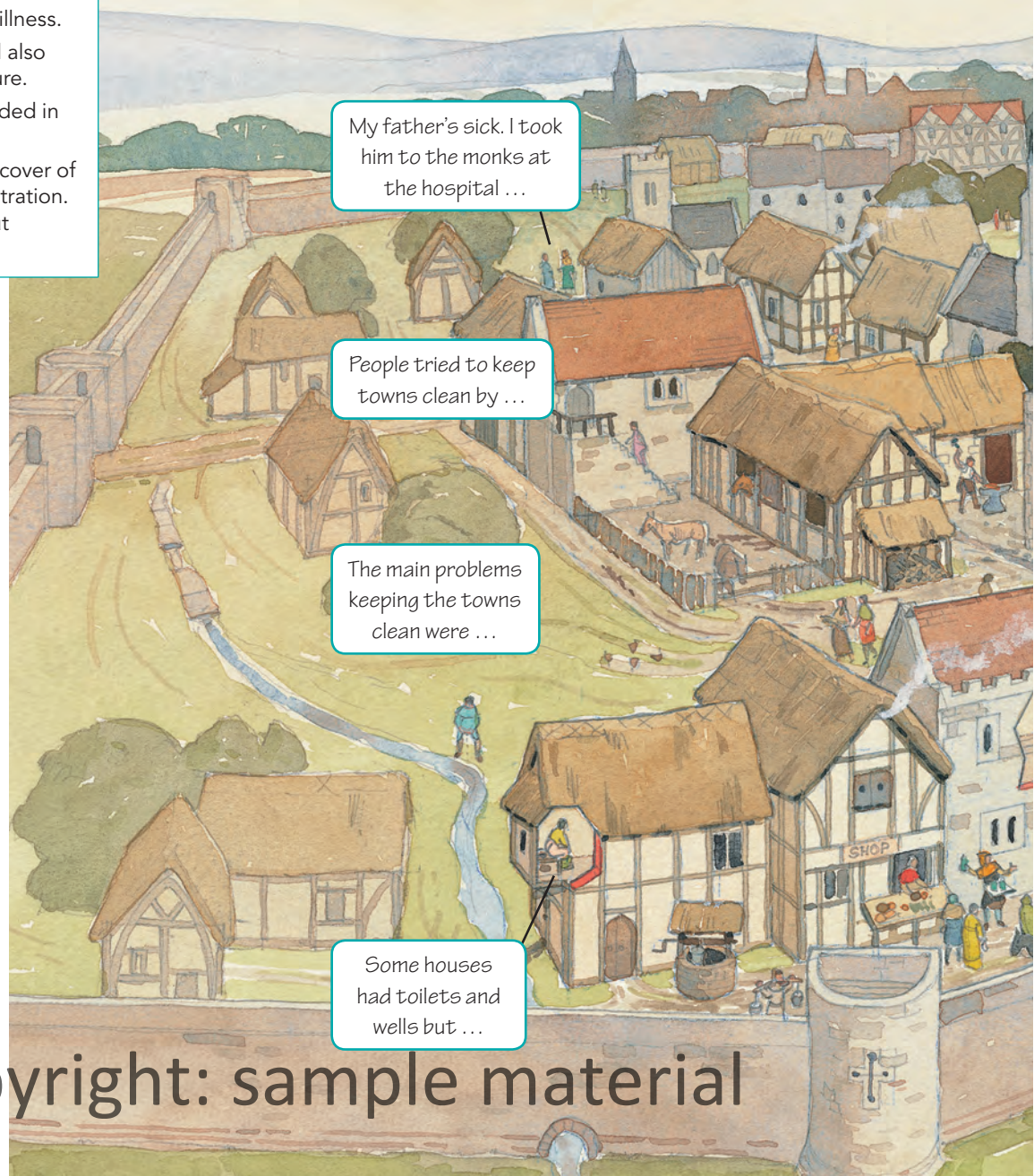


This page gives you the chance to summarise what you have learned about medieval medicine.

1. Each of the bubbles and boxes in the picture starts a conversation or provides information. Work with a partner to complete the conversations or information boxes. This will involve including information about all four parts of your memory map from page 14:
 - healers
 - ideas about the causes of disease
 - methods of treating illness
 - methods of preventing illness.

If you look carefully you will also find some clues in the picture.

2. Which healers are not included in this picture?
3. One of the pictures on the cover of this book is a medieval illustration. What does it tell you about medieval medicine?



My father's sick. I took him to the monks at the hospital ...

People tried to keep towns clean by ...

The main problems keeping the towns clean were ...

Some houses had toilets and wells but ...



The drawing below illustrates the sentence

White **A**lligator **P**hotographs **S**miling **H**ippo



The initial letters will help you remember one of the topics on pages 18–21. Can you work out which topic it is? Each of the initial letters stands for a key word.

This kind of phrase (or single word) to help you remember information is known as a **mnemonic**. Can you think of another mnemonic for this topic – or for other topics in medicine?



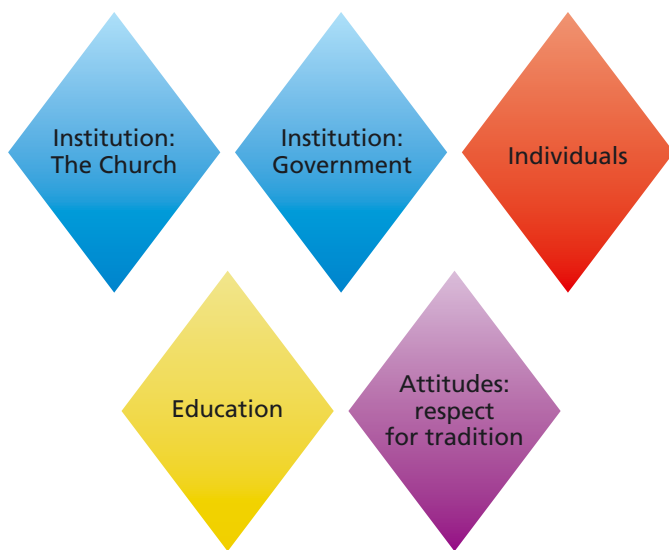
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2.5 Your enquiry: why was there so little change in medicine in the Middle Ages?

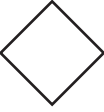
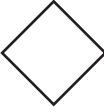
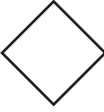

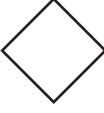
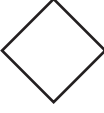
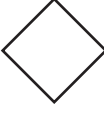
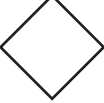
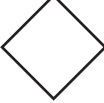
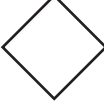
Your completed memory map will continue to be useful later when you compare medicine in the Middle Ages with medicine in later periods. However, now it's time to work out your answer to the Enquiry Question above.

Creating your hypothesis

To create a hypothesis – the first draft answer to our question – you can use the Factor Diamonds. We have picked out the factors that were most important in preventing medical change in the Middle Ages (therefore omitting Science and Technology). Here they are:



- Now use the diamonds to create your hypothesis. Arrange them in a pattern like the examples below. You do not have to copy one of these patterns, but do not just guess. Use your knowledge to decide on the most likely pattern. The information on page 13 will act as a reminder.

Preventing change	Hypothesis A	Hypothesis B
THE MOST IMPORTANT FACTORS	 	
VERY IMPORTANT FACTORS	 	 
QUITE IMPORTANT FACTORS		 

- Now use your pattern to write a short paragraph answering the Enquiry Question. You can use these sentence starters and links as a guide:

One of the most important reasons why there was little change in medicine in the Middle Ages was ...

Another vital reason was

Other factors also played a part in hindering medical developments

Researching the impact of the factors

Use pages 26–28 to research the effects of each factor. Take one factor at a time:

- Read the section about the factor quickly to get an overall sense of its content. The questions on each page will help you think about the factor's influence.
- Use a table like the one below as a Knowledge Organiser. After your first reading fill in column 2 in pencil.
- Now read the section again. Make separate notes explaining how the factor explains continuity. Then finalise your entry in column 2. Prove the link by using connectives (see page 25).
- Fill in column 3. Revise your hypothesis if you can improve it. Use language such as 'most important', 'very important', 'quite important'.

1. Factors	2. How does the factor explain continuity in medicine?	3. How important is the factor in explaining continuity?
The Church		
Education		
Attitudes (respect for tradition)		
Individuals		
Government		

Revisiting the word wall

It is time to return to the word wall (introduced on page 10) because you need a strong command of the words on the wall to develop a good answer to the Enquiry Question.

These words are not only useful for writing your answer. They are just as important when you are thinking and talking about your answer. They help you use exactly the right words and so explain your ideas more precisely.

On the word wall at the bottom of the page are some more words and phrases to add to your own wall. We have used the same colour coding that we used on page 10 – one colour for each group of words as follows:

Red – words related to the history of medicine.

Green – the factors that explain change and continuity.

Black – words that make your arguments and ideas answers clear to a reader.

And what about the words on the **golden background**?

They are the **golden words** – the words that really help you think, talk and write effectively when you are answering questions. You use them to:

- Link your answer strongly to the question
- Make your argument clear, for example when writing about which factors were most important or explaining how factors were linked together
- Show that there is evidence to prove your argument.

Visible learning

This meant that ... using connectives to tie in what you know to the question



When talking or writing about a factor, you cannot just say that it affected medicine. You have to **prove** that the factor affected medicine. You can do this effectively by using some of the **golden words** and phrases below such as 'this meant that ...', 'this led to' and 'this resulted in ...'

We call these words and phrases **connectives** because they connect what you know to the question and prove they are strongly linked. Look out for examples on pages 26–28.

Visible learning

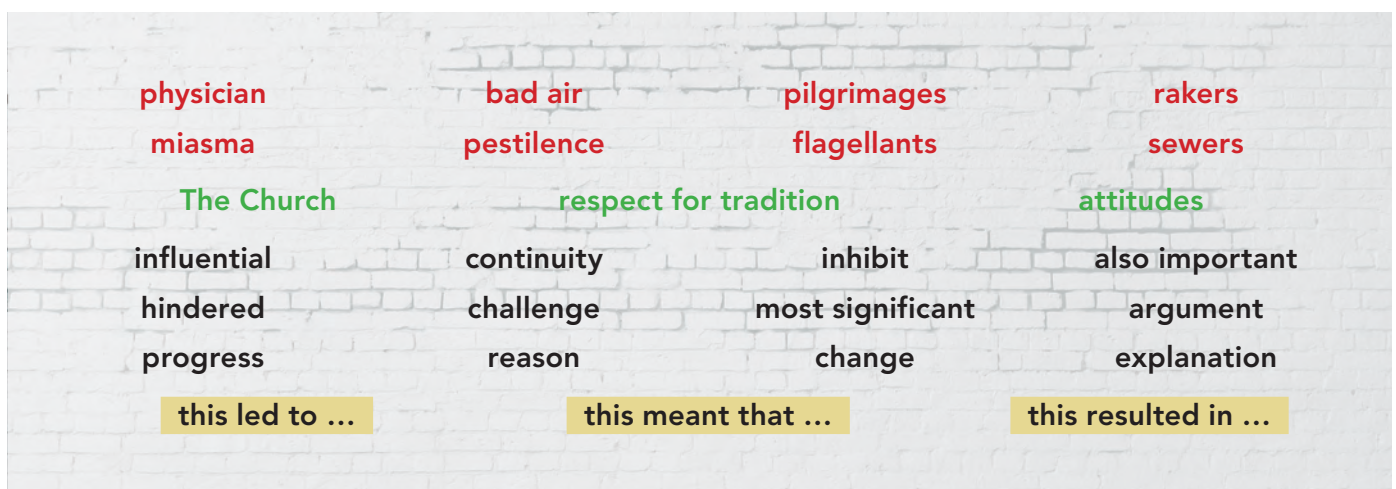
How does talking help?

Some people think that students are only working effectively if the classroom is quiet. This is wrong. Experience shows that students write better answers if they have first talked through their answer with other people. Talking helps us organise ideas in our minds, choose the right words and decide what evidence we need to prove a point.

Visible learning

What is an argument?

The black words on the word wall help you make your argument clear. An argument in History is not a punch up! Argument is another word for hypothesis. It's what you believe the answer is – supported by evidence to show why you think this.



Why was there so little change in medicine?

What is the importance of the three phrases in bold on this page? Check page 25 if you are not sure.

THE CHURCH

Until the 1500s there was only one religious organisation in Europe – the Christian Church led by the Pope in Rome, Italy. The Church was extremely rich because it owned a great deal of land in every country. It was also very powerful because it had a priest in every village and a bishop in every region. Through its bishops and priests it controlled education. You can read more about education on page 27.

Here are three ways in which the Church made it difficult for new medical ideas to develop:



- The Church had a major influence on people's ideas about what caused disease. The Bible said that God controlled every aspect of life so it was logical that God also sent diseases. They also believed that God had sent the Black Death to punish them for their sins. So if God sent diseases **this meant that** there was no need to look for other causes. This was an important reason why ideas about what caused disease did not change.
- The Pope, bishops and priests told people that everything in the Bible was true and you could not challenge what the Bible said. If anyone did dare to challenge the Bible and the Church they were told they would go to Hell when they died. In the Middle Ages people believed that Hell was a real place where they would suffer eternal pain from punishments such as being roasted over fires. This was a very real fear – there were wall paintings of Hell in churches to show people what happened there. Fear of Hell **meant that** hardly anyone dared to challenge what the Church said, including what it said about medicine.
- The Church supported the ideas of Galen. Galen had not been a Christian but he had said that the body had been created by one god who made all the parts of the body fit together perfectly. The Christian Church said that God had created human beings and did not make mistakes so the two ideas fitted together perfectly. As a result the Church supported Galen's work and **this meant that** no Christian dared to question Galen's ideas. If you questioned Galen you would be accused of challenging the Church and God.

1. Complete the sentences to summarise the impact of the Church.

a) God sends diseases	This meant that ...
b) You will go to Hell if you challenge the Church	This meant that ...
c) Galen was correct about the human body	This meant that ...

2. Complete activities a–d in 'Researching the impact of the factors' on page 24 for this factor.

EDUCATION

This factor is strongly linked to the influence of the Church because the Church controlled education, including how physicians were trained at universities. There were in fact very few physicians in England (fewer than 100 in the 1300s), partly because the training took seven years and very few people could afford the cost.



The main part of doctors' training was reading the books of Hippocrates and Galen, along with translations of books by Arab doctors such as Ibn Sina (known as Avicenna in Europe) and al-Razi (known as Rhazes). These Arab writers included many of the ideas of Hippocrates and Galen in their work. Doctors were taught to believe that Hippocrates and especially Galen were correct in every detail. This meant that doctors were not encouraged to experiment or to think

for themselves about what caused disease or about how to treat diseases. Following the work of Galen was all that was needed.

A good example of this total belief in Galen comes from how doctors learned about anatomy – the structure of the body. Doctors attended dissections of human bodies (as Galen had recommended) but they were NOT trying to make new discoveries.

Dissections were simply another way of demonstrating that Galen's descriptions of the human body were correct. The trainee doctors just watched a surgeon carry out the dissection while a section of one of Galen's books was read aloud. This meant that hardly anyone tried to find out more about the structure of the human body or how it worked.



1. Complete the sentences to summarise the impact of education.

a) Doctors learned in training that Galen and Hippocrates were correct about all aspects of medicine	This resulted in ...
b) Dissections were carried out to show that Galen was correct about anatomy	This meant that ...
c) The Church controlled education	This resulted in ...

2. Complete activities a–d in 'Researching the impact of the factors' on page 24 for this factor.

ATTITUDES: RESPECT FOR TRADITION

The result of the influence of the Church and of the way doctors were educated was that most people had great respect for the past and for traditional ideas. They wanted to keep everything as it was (this attitude can also be called conservative) unless there was a very, very good reason for change! In any case it was hard for new ideas to spread because books were written out by hand until printing came to England in the 1470s. Only after that were books manufactured in large numbers.

Later in history doctors and scientists believed it was important to question and test older ideas and not just rely on books written in the past. This was a vital change in attitude which led to many important breakthroughs, but this attitude did not develop in the Middle Ages. This meant that doctors were not trained to challenge existing ideas. What happened to one man was a warning to everyone else. When the English scientist Roger Bacon (1214–92) suggested that doctors should do their own research and carry out experiments he was thrown into prison by Church leaders.

1. Complete the sentences to summarise the impact of respect for tradition.

a) Books were made by copying by hand.	This meant that ...
b) Doctors did not believe in questioning existing ideas.	This resulted in ...

2. Complete activities a–d in 'Researching the impact of the factors' on page 24 for this factor.

INDIVIDUALS

Later in history some of the most important breakthroughs were the work of determined and inspired individuals: Harvey, Jenner, Pasteur and others (see the Big Story on pages 6–7). However, no individual made a great breakthrough in the Middle Ages. One reason was that education was very limited and controlled by the Church which did not encourage new ideas. As a result the key individuals in medieval medicine were Hippocrates and Galen – who had died centuries earlier!

Galen's work was especially important in the Middle Ages. He built on the work of Hippocrates and wrote over 350 books on medicine. These were the main books studied by doctors throughout the Middle Ages. He made new discoveries, especially about the anatomy of the body. Galen, unlike Hippocrates, thought it was very important to dissect dead bodies to find out more about anatomy and about how the body works. For example, he proved that the brain controls speech and that arteries carry blood round the body.

However, doctors did not just believe Hippocrates and Galen because they were trained to follow old ideas. There were two parts of their work that persuaded doctors their ideas were right:

- **There seemed to be evidence to prove their ideas were correct.**

People's symptoms when they were sick seemed to show that the Theory of the Four Humours was correct. When a medieval doctor saw a sick patient he often saw one of the Humours (see page 12). For example, a sick



person might vomit yellow bile or black bile or sneeze phlegm or have a nosebleed. This sickness seemed to prove that the body was unbalanced and trying to get rid of too much of one Humour. Just as importantly, nobody suggested an alternative theory about what caused disease that was more persuasive or had more evidence to support it.

The books by Hippocrates and Galen also made doctors believe they had all the answers. The books seemed to cover everything in an extremely detailed and organised way. For example, they contained the first detailed descriptions of symptoms and treatments. For example, in AD167 Galen made a precise and thorough record of plague symptoms. Galen's descriptions of dissecting human bodies and animals also made his work very believable and hard to challenge.



- **Their ideas seemed logical and reassuring if you were sick.**

Hippocrates and Galen did give very good advice. They told doctors to observe and note down the symptoms and development of diseases, including the pulse rate. These notes could be used to diagnose and treat other patients. Galen also developed the idea of using 'opposites' to balance the humours. For example, he treated someone shivering with cold with hot food such as peppers. These treatments seemed very rational.

GOVERNMENT

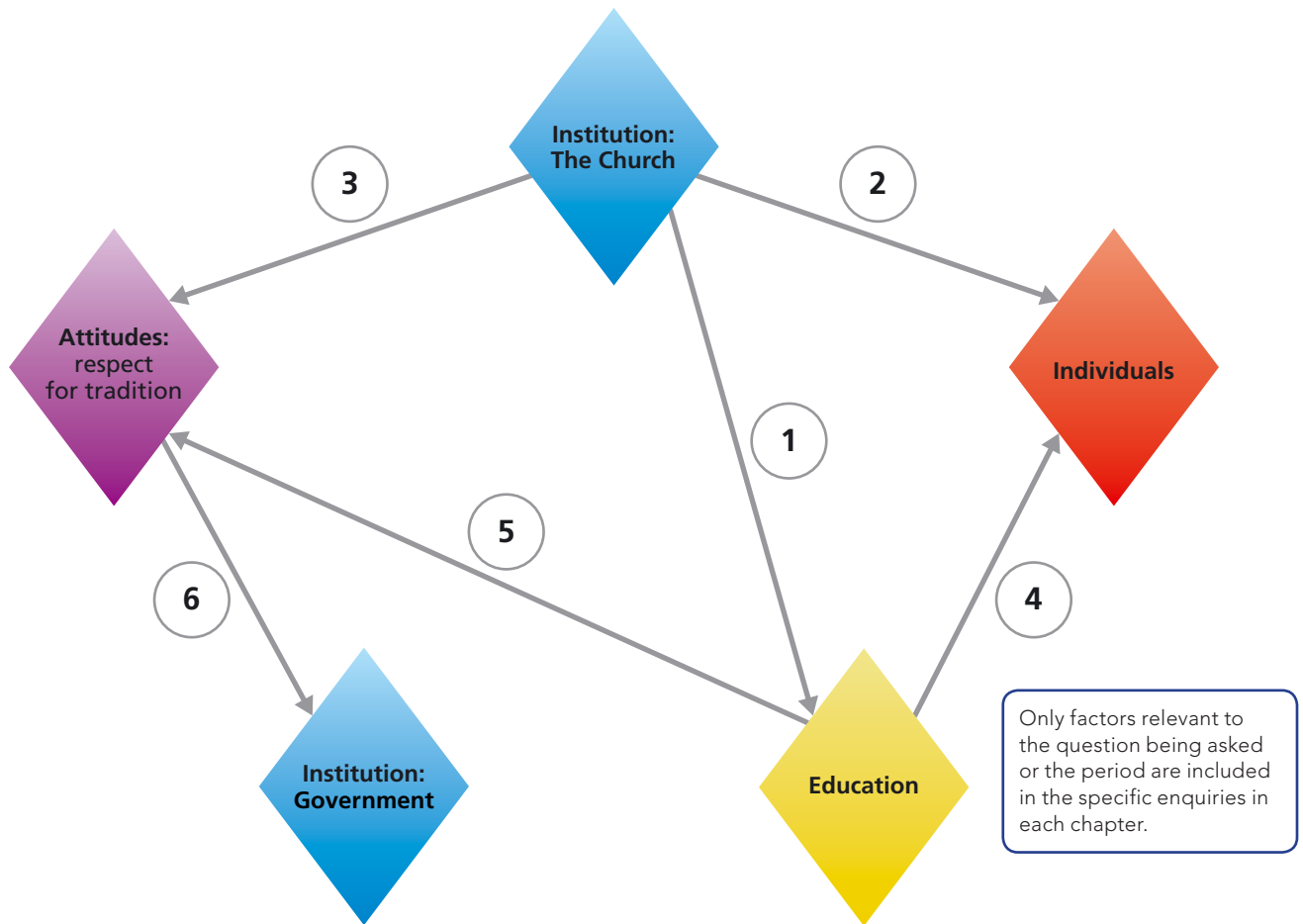
Since the early twentieth century governments have spent a great deal of money on medical research and care. This has played a major part in improving medicine. In the Middle Ages the king's government never did this. The major tasks of the king were to defend the country in war and to keep the country peaceful. Kings did order towns to be cleaned (as Edward III did in 1349 during the Black Death) but they did not do this regularly and did not pay for cleaning. No taxes were collected by the king's government to improve people's health or medicine. This meant that no money was spent to find medical breakthroughs.



THE IMPACT OF INDIVIDUALS AND GOVERNMENT

1. Create your own table for each factor like the tables on pages 26–27. Use these ideas as a guide:
 - Individuals
 - a) Who were the key individuals in medieval medicine?
 - b) Which two aspects of their work seemed logical?
 - Government
 - a) What were the king's main duties?
 - b) Did the government spend money on improving health?
2. Complete activities a–d in 'Researching the impact of the factors' on page 24 for the factors Individuals and Government.

How did the factors work together to inhibit change?



LINKING THE FACTORS TOGETHER

On pages 26–28 you have explored how each factor helps to explain why there was little change in medicine. Now we are going to look at how the factors were linked and how these connections made change even more difficult.

The diagram above is called a Factor Map. The lines between the factors show you which factors were interlinked. Your task is to write at least one sentence explaining each of the six links. You can find most of the explanations on pages 26–28 but you will also have to think for yourself.

The best way to do this is to draw your own version of the Factor Map on a piece of large (A3) paper and write your explanations onto your map.

Visible learning

Why are Factors Diamonds, Factor Maps and card sorts useful?

These all help you think more clearly and at a higher level. This improves your explanations because you can write more clearly about the complexity of what happened in the past.

- **The card sort using the Factor Diamonds helps you develop a clear line of argument.** It is a lot easier to write a good answer that is focused on the question if you have a clear line of argument in your head **before** you begin your answer. The cards help you decide which factors were the most important before you begin your answer. Successful students spend time thinking about their approach to the question before they start to write.
- **The Factors Map helps you decide which factors were most important.** The most important usually have the most links to other factors.
- **The card sort and the Factors Map help you to select what to include in an exam answer.** The Diamond card sort makes sure you include the most relevant and important factors. The Factors Map helps you identify and explain the links between the most important factors.

2.6 Communicating your answer

Now it's time to write your answer and ...

STOP! We have forgotten something very important:

Revise your hypothesis and get your summary answer clear in your mind before you write.

This is a really vital stage because one of the biggest mistakes that students make is starting to write their answer without having the answer clear in their minds. These activities help you do that and they will work better if you do them with a partner.

1. Return to the illustration on page 11. Can you explain all the references in that illustration?
2. Use that illustration and your completed table from page 24 to organise the Factor Diamonds into the pattern you think best answers the question.
3. Now use the Diamond pattern to revise your hypothesis paragraph for the last time. This will make sure you have a clear answer to the question.

Now it's time to write your answer!

Now you are fully prepared to write your full answer to our question:

Why was there so little change in medicine in the Middle Ages?

Pages 24–29 have given you a good deal of help but you will find more guidance in the writing guide on pages 148–162. However, the person who will give you the best advice is your teacher because he or she knows exactly what help you need to improve your work in History.

And remember – mind your language!

Use words from your word wall to help you write accurately and with confidence and use connectives like those in the paragraph below. Which connectives can you find in the paragraph and why are they important?

During the Middle Ages religion had a major impact on the development of medicine. The most common belief was that God sent illnesses such as the Black Death to punish people for their sins. People believed that the sick could be healed if they prayed for forgiveness. This meant that people did not look for scientific ways to explain the causes of disease and as a result medical treatments did not improve. Also, the Christian Church supported Galen's ideas, controlled universities and said that his work should not be questioned. This resulted in doctors being discouraged from researching and developing new ideas.

Practice questions

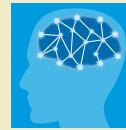
1. 'The role of the Church was the main reason why there was so little change in medicine in the Middle Ages.' How far do you agree? Explain your answer.
2. 'There was little progress in medicine in the Middle Ages.' How far do you agree? Explain your answer.

Some of your exam questions (such as question 4, 5 and 6 in the exam paper) will suggest two topics you could use in your answer. You can see examples on page 149. We have not included topics in the practice questions in this book to give teachers the opportunity to change these from year to year.



**It's time to THINK
about the answer**

2.7 Visible learning: Revise and remember



Yes, there is something to do after you have answered the Enquiry Question. It's something that's easily put off – getting ready for revision! Successful students plan their revision while they are studying. They do not leave revision until close to the exam. This page starts that revision process. So how can you revise?

1 Building up summaries on Knowledge Organisers

You used three Knowledge Organisers:

- a) The memory map to record the key features of medieval medicine.
- b) The table to record how factors inhibited change in medicine.
- c) The factors map to show how some of the factors were linked together.

What you have to do now is make sure those Knowledge Organisers are complete. When you come back to them for revision you do not want to start again from scratch!

2 Rewrite the Big Story

It's important for your exam to keep the whole picture of the history of medicine clear in your mind. On pages 6–7 you told the whole story in outline and wrote it down. Now revise the section on medieval medicine but this time you can write more and include these words:

continuity

hindered

progress

The Church

pestilence

factors

this meant that ...

respect for tradition

3 Test yourself

You need to work at making your knowledge stick to your brain! The more you recap what you have learned and **identify what you're not sure about**, the more chance you have of success. Answer these questions, identify what you don't know and keep repeating this.

1 What is dissection?	2 What were the Four Humours?	3 Name four different kinds of medieval healers.	4 List three ideas people had about the cause of disease in the Middle Ages.
5 List three kinds of treatment used in the Middle Ages.	6 When did the Black Death arrive in England and what percentage of people did it kill?	7 Give two reasons why it was hard to keep medieval towns clean.	8 Give two ways people used to keep towns clean and healthy.
9 List three reasons why people continued to believe the ideas of Hippocrates and Galen.	10 Which three factors were most important in inhibiting change in medicine?	11 What did you find hardest to understand in this chapter? How are you going to help yourself understand it?	12 Name one thing that you learned in this chapter that surprised you or that you now think differently about. Explain why.

4 Set questions yourself

Work in a group of three. Each of you set four revision questions on medieval medicine. Use the style of questions on page 11. Then ask each other the questions – and make sure you know the answers!

2.8 Visible learning: Developing independence

The author and editor think that this is the most important page in the book. Why?



A few weeks ago you did not know very much about medieval medicine. Now you know a great deal. It's important to identify how you learned so much so quickly. This is an important example of making how you learn **VISIBLE** – the idea introduced on page 4.

Why is it important? In the future you will need the skills to study for yourself, with much less help from a teacher. This might be at A level, at university or at work. The process you have used in this chapter will help you work independently and more effectively. Here's the process – in six stages:

Questions → Hypothesis → Research → Answer → Communicate → Revise

