Model Answers

This revision pack contains examples of model answers for all of the questions in the medicine paper.

You should highlight the following in each question:

* The time period/s mentioned
* The number of marks in the question ( make a note about how long you have to answer it)
* The topic in the question
* Whether it is about change or continuity

Then you should read through the answers to consolidate your understanding.

* 4 marks = no longer than 5 mins
* 8 marks = 10 – 12 mins approx.
* 12 marks = 12 – 14 mins approx.
* 16 marks = 30 mins approx.
* Similarity Difference Questions

**Explain one way in which ideas about the causes of disease was similar in the 14th and 17th centuries.**  
In the 14th and 17th centuries disease was believed to have a rational cause, for example bad air (miasma). During the great plague, like the black death, people believe that bad here was caused by rotting waste and the movement of the planets they believed that this led to an imbalance of the four humours and so disease in the form of the plague.

**Explain one way in which people’s reactions to the Plague in Britain were similar in the 14th and seventeenth centuries**

People’s reactions was based on religion, for example in both periods people responded to the plague by praying and fasting. Another example of the similarity is that people in both centuries they asked God for mercy. In the 14th century, people whipped themselves to show God how sorry they were and to ask for his mercy in saving them from the plague.

* **Ideas about the causes of illness and disease**

**Explain one way in which peoples understanding of the causes of disease in Britain with different in the 19th and 20th centuries.**  
The discovery of the structure of DNA in 1953 changed our understanding of how some diseases are caused by genetics, such as some cancers. This was different from understanding in the 19th century because, although people understood that some diseases will passed from parents to children, there was no understanding of how this happened and how treatments could be developed for diseases with a genetic cause.

**Explain one way in which ideas about the cause of disease and illness were different in the twentieth century from ideas in the nineteenth century.​**

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During the beginning of the nineteenth century spontaneous generation was believed. This was the idea that microbes were the result of decay. However, by the twentieth century, it was clearly understood that germs were the cause of decay and illness. Magic bullets, such as Salvarsan 606, were discovered that would destroy the microbes that caused disease.​

During the late nineteenth century, it was understood that germs were the cause of disease and illness after Louis Pasteur discovered the Germ Theory. However, the Germ Theory did not explain all diseases. By the mid-twentieth century it was understood that some diseases are hereditary and exist in human DNA, for example cystic fibrosis. Crick and Watson discovered DNA in 1953.

* **Ideas about the treatment of illness and disease**

**Explain one way in which ideas about the treatment of disease were different in the 17th Century from ideas in the 13th Century. (4 marks)**

In the 13th century, many people were treated either in their homes or in hospitals run by the church. In the 17th century, there had been the introduction of Pest Houses where people with infectious illnesses would be sent. These were important as regular hospitals would not accept anyone contagious so this allowed a place for these people to be treated without the risk of infecting their families.

**Explain one way in which hospital care in Britain was different in the 14th and 19th centuries.**Hospital care in the 14th century was very religious and care for sick people was based on prayer and rest rather than medical treatment. Hospital for a run by monks and nuns rather than medical workers because Jesus said his followers should care for the sick.  
  
In the 19th century this was different hospitals were now about treating ill people so they could recover. The 19th century care was based on scientific Understanding and professional training. Instead of being run by monks and nuns, 19th century hospital run by trained doctors and nurses

**Explain one way that hospitals in the 14th century were different to hospitals in the 20th century**

In the 14th century many English hospitals did not actually treat the sick. Many were run by the Church and the focus was on hospitality rather than curing or treating disease. Nuns cared for the sick by doing the washing, cleaning and bringing food to the patients and the priests and monks would lead prayers.​ This is different to the 20th Century. As the role of hospitals changed in the 20th century because English hospitals were no longer run by the church and the focus was on diagnosing and treating patients by using the expertise of doctors and nurses rather than taking care of spiritual needs.​

**Ideas about Prevention of illness and disease**

**Explain one way in which government intervention changed in its dealing with Cholera in the 19th Century and its dealing with Lung Cancer in the 21st Century 4mark question**​

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In the 19th Century the government dealt with Cholera by passing laws such as the Public Health Act of 1875 which was aimed at cleaning up the streets. This is different to how the government dealt with Lung cancer as the government are directly interfering in peoples lives to get them to stop. Such as in 2007 they raised the smoking age and 2005 they banned all smoking advertising. They also made it illegal to smoke in cars in 2015.

**Explain one way in which the prevention of disease and illness was different in the 19th and the 21st centuries.**

In the 19th century, the British government took a laissez-faire approach to prevent disease and illness, believing it was not its responsibility. However, by the 21st-century the British government no longer had a laissez-faire approach to the health it’s people and took action in preventing disease and illness by educating the people so that they could take control. This can be seen in the government encourage campaigns making the population aware of the dangers of smoking, binge drinking and drug use. It can also be seen in the change for life campaign.

**Explain one way in which doctors training in Britain was different in the 14th and 17th Centuries**

In the 14th century, Doctors trained by reading Galen because his theory of opposites and the theory of the four humours provided them with an understanding of how to treat people. One difference in the 17th century was the doctors training became more practical, they observed and examine patients, rather than just reading about your nurses in books, and it became more acceptable for medical students to dissect human bodies.

**Medieval Medicine**

12 mark questions

**Explain why there was continuity in the treatment of disease during the medieval period.**

**You may use the following in your answer:**

* **Attitudes in society**
* **Four Humours**

**You must also use information of your own.  12 marks**

There was continuity in the treatment of disease during the medieval period because many treatments were based upon the theory of the four humours which was used to explain the cause of disease throughout the medieval period. The theory of the four humours stated that the body was made up of four humours and when a person was ill it was because those humours were unbalanced. As a result of this belief, treatments during the medieval period were based upon balancing the humours through treatments such as purging and blood letting using leeches or by cutting a vein. The theory of opposites that had been developed by Galen was also used to treat an imbalance in the Four humours by making someone eat something hot such as pepper if they had too much phlegm and cold and wet if they had too much blood. Treatment of disease did not change because any new discoveries about illness during the medieval period were made to fit the theory of the Four Humours.

There was also continuity in the treatment of disease because of the control that the Church had upon medicine and society. The Church supported the theory of the Four humours and supported treatments that balanced them. The church also taught that illness was sent by God as a punishment for sin which meant that treatments throughout the medieval period were based on cleansing the soul. Monks and nuns led prayers in hospitals that were run by the Church and encouraged people to treat illness by going on a pilgrimage to a holy site or visiting a shrine. People were encouraged to touch relics to be healed. Everyone had a strong belief in God and would not risk going to hell by being critical of the Church and so there was continuity in treatment throughout the medieval period.

Treatments also remained the same because there was a lack of scientific knowledge and understanding of disease. Physicians and medical students tried to make new discoveries

[You should write ONE more PEEL paragraph in the real exam]

**Explain why there was continuity in ideas about the cause of disease during the period c1250- c1500? (12)​**

* **You may use the following information in your answer.​**
* **The Church​**
* **Galen​**

**You must include knowledge of your own. (what else can we discuss here?)​**

Between the years 1250 and 1500 there was very limited change to medical science. There are a number of reasons for this but the key one was the church, which promoted the works of Galen and restricted experimentation that could have led to change. As people were religious, they did not welcome new treatments, nor did science seem to offer any.​

In the middle ages, the church has a virtual monopoly on learning. Monks were among very few people who were able to read and write, and until the invention of the printing press in 1440, they were in charge of reproducing medical knowledge. Medical books formed part of monastery libraries and were hard to access. They believed strongly that the purpose of science was to show the wonder of God’s creation, not to question it, and they opposed many scientific developments. ​

The church also promoted the works of Galen,  who they believed had shared many Christian ideas and so was an ‘enlightened pagan.’ It helped that he had written over three hundred books, some of which had survived the fall of Rome. He had strongly promoted the methods of observation and diagnosis put forward by Hippocrates, and the Greek idea of the four humours. To us this may seem a very primitive method of diagnosis but at the time it appeared rational and scientific. This (along with miasma) became the accepted theory on the cause of disease and few people questioned Galen’s authority. ​

We also need to consider the attitudes that existed at the time.  Simply put, these ideas were the best that were available at the time. The alternatives were either astrology (which had very little rational basis) or methods based entirely on superstition. Patients were understandably reluctant to be treated by Doctors using anything except Galen’s theories, because these seemed to be the most reliable treatments. Therefore doctors such as Henri de Mondeville – who opposed Galen’s theories and said they needed to be replaced – still treated people with remedies based on the four humours and the theory of opposites. Educated people believed that the Greeks and Romans had discovered everything and treated ‘improvement’ with suspicion.​

In conclusion then  – there was little change during this time period mostly because the church supported Galen and opposed change, and most people (both doctors and patients) felt entirely comfortable using these tried and trusted methods. There was no general demand for change

Medieval 16mark questions

**“prevention and treatments for disease and illness in medieval England was based on religious ideas” ​**

**How far do you agree with this statement? 16marks​**

It is clear that prevention and treatment of illness did in many cases have religious foundations, yet it is clear that there were other methods of prevention and treatment that did not rely solely on religion to help them.

Religious ideas did influence prevention and treatment of disease and illness in medieval England. Religious actions included healing prayers, fasting (going without food), lighting candles in church, flagellation and going on pilgrimages. The majority of people believed that God sent illness as a punishment for sin and this led them to believe he could also prevent and remove illness. Therefore, to prevent being ill many people believed they needed to just live a good life. It is clear that religious ideas were important, yet religion was not the main factor​

Religious ideas were not always the main factor as a key idea on prevention during the middle ages was to ensure good smelling air was available. People believed that a cause of illness was miasma, which is the belief that illness was caused by bad smells in the air. To prevent becoming ill medieval people purified the air by spreading sweet smelling gerbs and carrying flowers. Clearly indicating that not all methods were based on religious ideas.

Another example of treatments that was not revolved around religious ideas was the use of star charts. During the medieval period many people believed that a cause of your illness revolved around astrological causes. And therefore, star charts were used to prescribe treatments, including herb gathering, bloodletting, purging and operations. Therefore, Religion was not the main factor as this is a clear example of not focusing on religious treatments and prevention.

In addition, another example of treatment that was not focused on religious motivations was treating using humoral treatments. A belief that medieval people held was that one of the reasons that you became sick was that your humours were out of balance. And therefore treatments focused on Galen’s theory of opposites and treated accordingly using bloodletting and purging, showing that religion again was not the main focus of treatments and preventions

**Hospital treatment in England in the period 1250-1500 was very rare’​**

**How far do you agree? Explain your answer​**

**You may include in your answer the following​**

**Charity Hospitals​**

**Care in the home**

It is clear that hospital treatment during 1250-1500 was very rare​. Although hospitals were on the increase during this period most people did to want to go to hospital to get treated for their illness​. 30% of the hospitals were run by the church and therefore the focus was not on treatment it was more on care​. Religion dominated hospitals many patients were advised to pray at their bed side.​ Therefore it is clear that as hospitals focused on caring for the patient not treatment .

However, it is important to note that by 1500, there were around 1,100 hospitals in England. Bury St Edmonds was the biggest with 6 hospitals, caring of lepers and the old. Yet, it is important to note that Certain groups of people were not welcome into hospitals. The insane ad pregnant were rejected. Therefore, many individuals had to seek treatment outside of hospitals.

Many people preferred to be treated at home when they were ill, therefore hospital treatment was rare. People preferred to be cared for by their family and because the remedies and treatments used by women at home could be home grown and because the women were often well respected for their ability to cure illness. Many cures were linked to the humours and to diet, therefore treatment at home was practical and often just as good, or better than that in hospitals which cared rather than cured patients. Therefore, I agree that treatment in hospitals was rare​

Medieval hospitals role was more to care for patients and not treatment, therefore it is rare for patients to receive treatment in the hospital, rather going to local barber surgeons, wise women etc.

**The Theory of the Four Humours was the main idea about the cause of disease in the Middle Ages’ How far do you agree? You may use the following in your answer: university training and Galen. (16 marks)**

The Theory of the Four Humours was promoted by the Church as an explanation for the cause disease in the Middle Ages. The Church liked the theory because it was promoted by Galen, who was an individual the Church liked because he suggested the body fit together so well that it must have had a creator, the Church took Galen as meaning God. The Church pushed forward the Theory of the Four Humours to be taught to doctors in universities and this meant they used the theory when diagnosing patients.

The Theory suggested that disease was caused by an imbalance of the humours. These were lined to the seasons, they were blood, phlegm, yellow bile and black bile. The theory was very popular because it could be twisted to explain practically any disease. People understood the Theory and believed it to be true.

On the other hand, the theory was not the only explanation for cause of diseases in the Middle Ages. Many people also thought that God was responsible. God sent disease as a punishment to those who had sinned. An example of this is the Black Death when people thought God had sent the disease to punish them.

Furthermore, people also believed that Miasma caused disease. Miasma was the belief that bad smells in the air cause disease. During the Middle Ages people would burn incense to try to keep away miasma as they believed it caused disease.

In conclusion in terms of popularity The Theory of the Four Humours was the main idea because even those people who believed in God, believed the Theory of the Four Humours was sent by God.

Renaissance

**Explain why some changes took place in medical knowledge during the Period c1500-1700**

* **The royal society**
* **Vesalius**

here were changes in medical knowledge during the period c.1500–c.1700 because of changes in the attitudes in society and an increase in scientifc thinking. Scientists and doctors were encouraged to question the world around them rather than just believe what they read in books. Thomas Sydenham encouraged doctors to question and look closely at the symptoms of his patients, rather than to just believe the ideas of Galen. Questioning and debate was also encouraged by the Royal Society, which met for the rst time in 1660. The Royal Society encouraged scientists and doctors to carry out experiments, share scientifc knowledge and debate new ideas. This questioning led to new knowledge. Thomas Sydenham published his book *Observationes Medicae*, rejecting the Theory of the Four Humours.

In a world of questioning and debate, other individuals were encouraged to develop new ideas that changed medical knowledge during this period. Andreas Vesalius challenged the anatomical ideas of Galen after dissecting human bodies. He proved that a human had only one jawbone and that blood did not pass through the septum. Vesalius’ new ideas about the anatomy of the human body were published in his book *The Fabric of the Human Body* and circulated widely due to the invention of the printing press. This allowed changes in medical knowledge to take place.

With a decline in the power of the Church between 1500 and 1700 there was an increase in scienti c experiments. New ideas about the causes and treatment of illness developed following observation and scienti c experiments. These included animalcules and transference. Animalcules were seen through a microscope in 1683. Some believed these tiny animals were created by illness. Transference was where people believed illness could be passed from a person to an object in order to treat them. This new medical knowledge spread throughout this period thanks to the printing press and the Royal Society where these ideas would have been discussed and debated.

16mark

**‘There was little progress in medicine between c.1500-c.1700’**​  
**How far do you agree?**

It is clear that the idea that there was little progress in medicine in the Renaissance period is flawed, as there was clear progress in the understanding of the human body which laid the foundations for future progress.​

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The Renaissance showed many medical breakthroughs which did create progress within the history of medicine. One of these medical breakthroughs was Harvey’s discovery that the heart was a pump and that it circulated bold around the body. This proved Galen’s theory incorrect that blood is constantly made in the liver. This shows there was medical progress as in the long term as Harvey’s discoveries would inspire future doctors and lay the foundations for more medical progress in the future. For example his discovery created the stepping stones for future doctors to discover blood types which lead to the development of blood transfusions and heart surgeries. This is a clear example of progress in medicine.​

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A different reason why there was medical progress in the Renaissance period is shown in the work by Sydenham. His work as a physician added to medical progress at the time. This was because he used observation of patients and the use of records to diagnose illness and to find treatments such as Cinchona for treating Malaria. He also was able to identify the differences in measles and scarlet fever. This shows medical progress as he used his initiative and medical knowledge to create better and more effective treatments. This was a clear break from using Galen's work on the theory of opposites to diagnose patients, showing clear progress​

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A further example of clear medical progress is the work of Vesalius. Vesalius was able to prove many of Galen’s theories incorrect. He showed through the dissections he was able to carry out that in fact the human jaw was made of one bone not wo as Galen suggested. He also showed that men do not have less ribs than women. These discoveries he was able to spread using the Printing press, in his book the Fabric of the human body. This was a clear example of progress as many were able to use the detailed drawings that Vesalius have in his book to study the human body and therefore develop their understanding.​

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There were some clear examples of progress when treating patients. Due to the discovery of the new world physicians and apothecaries were willing to try some of the new herbs and chemical substances discovered during this period. Sarsaparilla was used to treat the Great pox, and Ipecac was used against dysentery. Chemical cures were also being experimented with such as mercury and antimony which were used to promote sweating. The fact that new treatments were even being used shows a clear element of progress.​

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However there were also factors which showed lack of medical progress within the Renaissance period. For example the Church still had support from many, people still believed that god caused many illnesses, a key example is how many still prayed and used flagellants as treatments for the plague. Many were reluctant to accept the new ideas  suggested by Vesalius and Harvey, it took universities over 50years to start teaching their ideas rather than Galen’s. this shows that although there is clear progress in ideas there was not always the progress in acting on the new ideas.​

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In conclusion I believe that there was clear progress when it came to the understanding of the human body, as now there were accurate books that would allow doctors to have a better understanding of the human body. There were clear advances during this time in the understanding of the body yet there was still limited understanding of what caused illness as there was a limitation on technology that could show the cause of illness.

**Individuals had the biggest impact on medical training in the 16th and 17th centuries’.**​

How far do you agree? Explain your answer. You may use the following information in your answer:​

* **Vesalius**​
* The printing press​

You must also use some information of your own​

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*To a great extent individuals played an important role in improving medical training during the Renaissance.  For example, Vesalius helped to improve knowledge of human anatomy. Vesalius produced an important work ‘****The fabric of the Human body’****in 1543, which gave medical student’s detailed drawings and descriptions about the structure of the human body. This had an important impact on medical training because it allowed students to increase their understanding and they were encouraged to study for themselves rather than rely on old ideas.* *It was also important because it showed Galen was wrong about the lower jaw and showed there no holes in the septum after all.* *This had a huge impact on medical training after 1543 because medical training was now based less on believing old inaccurate ideas and teaching medical students correct information which would encouraged other scientists like William Harvey to make new discoveries like the circulation of the blood the ‘Fabric of the Human body’ medical students were taught.*​

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*William Harvey also provides an example of the impact individuals had on the medical training in the 16th and 17th centuries. William Harveys discovery of the circulation of blood meant that Galen was proved wrong again, this time because he said that blood was being constantly made in the liver and burnt up in the muscles . When Harvey was able to demonstrated that the same limited supply of blood circulated, not only did this encourage his students to question all the accepted works, he also showed his students how to perform and record meticulous scientific  experiments which were uniform, consistent and thorough. This meant that students could learn from their own discoveries and hallenge accepted ideas.*​

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*However , important individuals  also had a limited impact, for example, had dissections still been banned it would have been impossible to make these break thoughts. Also sometimes there was no practical appli ation of knowledge. For example, Harvey may have discovered circulation but I he couldn’t see the capillaries, so he could really explain how the whole system worked. Neither did he stop the practice of blood letting or enable reliable blood transfusions.*​

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*Other significant factors had an important impact on medical training . For example the invention of the printing press. This was invented in 1440 by Johannes Gutenberg and was important for medical training because it enabled medical information to be spread quickly and more cheaply.****This meant there were also fewer inconsistencies in the texts so that medical students could access the same information and share it with others****. Also, the printing of books meant the Church was no longer in control of what was produced****so they could not prevent students from reading medical books which suggested Galen was wrong or referred to the work of non-Christian scientists. Finally, the invention of the microscope in 1660 made i***

Industrial

12marks

Explain why there were advances in the prevention of disease and illness in the period c.1700 – c.1900.​

You may use the following in your answer:​

* Germ Theory​
* Vaccinations​

You must also use information of your own.​

One reason for advances in the prevention of disease and illness was the discovery of the Germ theory. Once the Germ Theory was discovered in the 1860s, Pasteur was able to explain the significance of Jenner’s smallpox vaccine. This advance in scientific understanding led to the discovery of microbes by Robert Koch and the development of further vaccines, for example Tetanus and Diphtheria.​ This was key to the prevention of illness.

Another reason for advances in the prevention of disease and illness was government intervention. Government intervention meant that the smallpox vaccine became compulsory after 1852 and was more strictly enforced from 1872, that a sewer system designed by Joseph Bazalgette for London was funded and that a Public Health Act became compulsory in 1875 leading to much cleaner streets for the people of Britain.​ Therefore the government were key for the advances in the prevention of disease and illness.

The work of individuals was vital in the prevention of disease and illness in the period. One example is in 1854, Dr John Snow discovered that cholera was caused by dirty water leading to the development of a sewer system throughout London to ensure dirty water was removed from the streets.​ This inspired others to develop work such as Pasteur who was able to prove John Snows theories. Joseph Lister was also key in the prevention of disease and illness. Based on the work of Pasteur, Lister was interested in how to overcome the spread of infection. He developed the Carbolic Sprat which led to a reduction on infections during surgery.

**Explain why there was a rapid change in the prevention of Smallpox in the period c1750-c1900. You may use the following: inoculation, Edward Jenner. (12 marks)**

Change occurred rapidly between c1750 and c1900 because of an individual – Edward Jenner – and an institution – the government.

Before 1798, people attempted to prevent smallpox using inoculation. This was not a trustworthy, method as many of those who were infected, died from the disease. Edward Jenner developed the world’s first vaccination, using material from sufferers of cowpox. He had observed that people who suffered from cowpox were immune to smallpox and used experiments to prove his method worked. However, Jenner’s vaccination was not immediately popular due to attitudes in society. People did not trust the new method because he could not prove it with science. Many people, including inoculators and the Church were against it. This meant that Jenner was only responsible for the rapid change in understanding how smallpox could be prevented.

It was due to the influence of the government that change occurred rapidly. From the start of the 19th century, the government funded and encouraged vaccination programmes. In 1852 they made vaccination compulsory and from 1867 started enforcing it this ultimately led to rapid change in the prevention.

Therefore the change in understanding how to prevent smallpox was down to Edward Jenner however the rapid change in prevention is due to the government actions – death rates fell by 85% by 1880 which shows the vaccination was useful

**Explain why surgery changed so rapidly in the 19th Century**

 The discovery of anaesthetics was a major breakthrough in surgery because it meant that surgeons did not have to work quickly to minimise pain and shock, and could do more complicated internal operations. Although early anaesthetics had problems, James Simpson’s development of chloroform and John snows invention of a chloroform inhaler was important in making them Safer. In 1853, Queen Victoria used chloroform during childbirth, convincing other surgeons and patients that the benefits of anaesthetics outweighed the risk, and the impact of chloroform on surgery increased.

Infection limited the amount of anaesthetics because although operations could now take longer, operating conditions were unhygienic so patients died of sepsis. Some medical workers found better hygiene reduced the death rate for patients. For example, Florence Nightingale insisted on clean wards and one patient per bed. before Pasteur’s Germ theory, however, medical workers did not understand why hygiene health combat infection. They thought it stopped miasma, which led to techniques such as keeping wound tightly bound. This is in fact created better conditions for bacteria to grow.

Although there was opposition to listers work at first, he’s ideas lead to major changes in surgery because surgeon to use his technique so big reductions in the numbers of patients dying from infection. In 1878 cock identified the microbe causing blood poisoning, convincing surgeons to use antiseptic treatments. These developments contributed to rapid change in surgery in the 19th century because they revolutionised what surgeons could do: Anaesthetics allowed surgeons to attempt internal operations and antiseptic’s meant that people recovered from them, encouraging more surgeons to attempt them. Significant problems such as the problem of blood loss still remained. However, surgery at the end of the 19th century advanced very rapidly since the start.

**Explain why there was so much opposition to Jenner’s vaccination against smallpox. You may use the following in your answer inoculation and the Royal Society.**  
There was a lot of opposition to Jenner’s smallpox vaccination at the beginning of the 19th century. One cause of the opposition was a lack of acceptance from the medical profession. Doctors were used to giving inoculations and did not want to change their approach. The Royal Society did not help when It said that Jenner’s idea was too revolutionary and refused to publish his book.  
  
There was also opposition from the religious community. The anti-vaccine society was set up to oppose the vaccination. They did this by publishing cartoons that made fun of the vaccine and tried to scare people into not trusting and therefore not having the vaccination. One such cartoon showed people who had the vaccine turning into cows. Many religious believers thought it was against gods law to give people an animal disease. It was believed that smallpox was sent as a punishment for sin and that only prayer and living a good life could kill the disease.  
  
Jenner’s inability to explain how his smallpox vaccine worked did not help to reduce the opposition. Pasteur Did not publish his germ theory until 1861, so Jenner did not know the bacteria caused disease. This meant that he did not know exactly how vaccination worked and Jenner wasn’t able to explain it to others. The longer-term consequences of this was it was not possible to learn from this discovery how to prevent the spread of other diseases. Without a clear explanation, the opposition to the smallpox vaccine continued.

16markers

**Edwin Chadwick’s Report was the main reason why public health in towns improved during the nineteenth century. Do you agree?**

The public health in towns did improve during the 19th century and one reason for this was due to Edwin Chadwick’s report. In 1842, Edwin Chadwick wrote his ‘report on the sanitary conditions of the labouring classes.’ In this report, Chadwick showed that the poor lived in dirty, overcrowded conditions which caused a huge amount of illness. Due to this, many people were too sick to work and so become poorer still. This had an effect on the richer people because they had to pay more taxes to help the poor. Chadwick suggested that Taxes should be cut, and money should be saved in the long run by improving drainage and sewers, removing refuse from streets and Houses, providing clean water supplies and appointing medical officers in each area to check on these reforms. Initially there was opposition to Chadwick’s ideas due to the initial need to increase taxes and for the government to get involved in local matters. However, after an outbreak of cholera in 1848, the government passed the 1848 public health act which led to many towns improving their public health. This shows that Chadwick was important because he pushed the government to act in 1848 for the first time

On the other hand, the discovery of John Snow that cholera was caused by dirty water was also an important factor in improving public health in towns during the nineteenth century. Snow carried out an investigation of the Broad Street water pump after observing the number of deaths in this area from cholera. He noticed that those dying were using the same water pump and so he removed the handle; taking the water pump out of use. When he did this, the number of deaths went down. Snow then investigated further and noticed that there was a cesspit next to the water pump with a cracked lining and waste from the cesspit was seeping into the water and spreading cholera. Snow had proved that dirty water was a cause of a major killer in the nineteenth century. Unfortunately, the government did not act immediately. It needed Pasteur’s Germ Theory to explain Snow’s findings. However, the government did eventually fund the building of a sewer network below London to remove waste and dirty water. This was designed by Bazalgette and begun in 1860.

Modern

**The main reason that penicillin was developed in the early twentieth century was because of the work of individuals’ how far do you agree?**

The statement is partially correct because the work of Florey and Chain was vital in the development of penicillin. Florey and Chain read and developed the work of Fleming, who initially discovered that penicillin killed the staphylococcus germ in 1928. They secured funding from the British government to create enough and test penicillin on mice and humans. During the Second World War, Florey and Chain secured the funding from the USA for the mass production of penicillin. Without the work of Florey and Chain, knowledge of penicillin and its ability to eliminate deadly infections would not have been recognised and understood.

However, the statement is partially incorrect because other factors also played a role in the development of penicillin. Science and technology was important. Scientific experiments were carried by Florey and Chain when they developed penicillin; initially testing it on mice and then on humans. Technology enabled the creation of the initial equipment needed to make enough penicillin to carry out these scientific experiments. This shows that science and technology was vital in providing Florey and Chain with their knowledge and understanding of the powers of penicillin in medicine.

In addition, if the WW2 has not been happening it is unlikely that Florey and Chain would have been supported. WW2 was raging and the US government funded 21 pharmaceutical companies to mass produce it. By D-Day, enough penicillin had been produced to treat all Allied casualties. Therefore the work of government driven by war is an important factor to consider here.

Therefore, it is clear that the work of Individuals was vital in regards to the development of penciilin, without the technology and without the government backing it would not have developed to where it did.

• The public health act 1875 was the most important factor affecting imporvements in the prevention of disease in Britain during the period c1700-1900. How far do you agree

o Cholera

o Jenner’s vaccination against smallpox

The public health act of 1875 although important was not the most important factor in helping to prevent the spread of diseases such as cholera and smallpox in this period.

Jenner’s vaccination against smallpox was important in preventing people catching one of the most dangerous diseases of the period: Smallpox. Jenner used the existing technique of inoculation to prove vaccination with cowpox provided immunity from smallpox. Although there was a lot of resistance to the idea of vaccination at first, it became compulsory for British children in 1853. Smallpox was such a deadly disease that vaccination save millions of lives. This made it important factor in preventing disease.

Another important factor in preventing the spread of disease was the influence of Pasteur’s germ theory because it gradually disproved previous understanding that disease was spread by miasma. In fact, the influence of germ theory, together with work by John Snow, helped to convince the government to act in public health in 1875. Pasteur showed it was microbes that led to decay and some disease, which Koch then developed. Snow proved that colour was spread by contaminated water, but his writings were rejected. Pasteur’s Theory explained why Snow was right, which increased the pressure on government to do something to improve water supplies so that people had access to clean, and uncontaminated water. Without the influence of germ theory, the governments laissez-faire approach to public health might of continued until after 1900.

Therefore, it is clear that other factors were more important than the public health act in the prevention of disease during this period, as without them the public health act would not of come about. without snows discovery about the spread of cholera, which was explained by Pasteur’s Germ theory, the government might have stuck to the miasma theory.

Western Front

**1. Describe two features of Casualty Clearing Stations (4 marks)**

Feature One: Casualty Clearing Stations needed to be close enough to the frontline to be able to deal quickly with the wounded, but far enough away to have at least some protection from the shelling.

Feature Two: A triage system was used to divide the wounded into groups in the clearing stations. Those who were not likely to survive would only be made comfortable but not treated.

**Describe two features of the trench system on the Western Front**

There was the front line trench, which was closest to the enemy and is where soldiers would re and mount an attack from. The reserve line trench was the furthest away from the front line. It was here that soldiers would be mobilised from for a counterattack should the enemy make it into the front line trenches.

**Describe two features of the gas attacks on the Western Front**

Chlorine gas was used in the Western Front by the Germans in 1915. Chlorine gas to led to death by suffocation after attacking a victim’s lungs. Mustard gas was an odourless gas. Mustard gas caused blisters and could burn the skin through clothing.

**Describe two features of the treatments of wounds on the Western Front**

The Thomas splint was used in surgery on the Western Front. After its introduction men with a gunshot or shrapnel wound had an 82 per cent chance of survival. Mobile X-ray units were also used on the Western Front. They were used to locate shrapnel and bullet wounds.

**Describe two features of the evacuation route on the Western Front**

The wounded were first collected by a stretcher bearer. Each battalion had sixteen stretcher bearers and it took four men to carry a stretcher. There were also Casualty Clearing Stations on the Evacuation Route. These were located in tents or huts about 10 miles from the fighting.

**Describe two features of the underground hospital at Arras**  
The hospital was located in tunnels underneath the town of Arras. British and New Zealand miners had linked existing tunnels to create a secret underground network where 25,000 soldiers could live.  
  
The underground hospital was large and well supplied. There were 700 beds in the hospital and it had an electricity supply, water supply, and operating theatre and a mortuary

**Describe two features of medical workers on the Western front**  
  
At first, all medical workers on the Western front were from the Royal Army medical Corps (RAMC). There around 3000 Army medical workers in 1914, and this figure increase to around 13,000 by 19 18.  
  
Later, volunteer medical workers were allowed, including first aid nursing Yeomanry  
(FANY). Volunteers were mostly used to drive ambulances and for cooking and cleaning.

**How useful are sources A and B for an enquiry into the way casualty clearing stations treated injured men on the Western Front.**

Source A: Adapted from the diary of Dr Harvey Cushing, written on the 6th of June 1915. He was an operating surgeon who worked with the R a MC on the Western front during the First World War.

It was the same in all the casualty clearing stations. There was a great tent for reception, with rapid recording of patients- Some to go on, some to remain, and of those a large quota to the pre-operation room for their turn, and others with chest wounds to their proper ward, or still others in critical shape to another place; And meanwhile an equally rapid evacuation takes place and the train is ready for 600 cases, and before they are off in come another 150, and why can’t number 11 take these, and number two is overcrowded or another behind in its work.

Source B: From the memoirs of John Hayward, a surgeon at the casualty clearing station on the Western front during the First World War. John Hayward wrote his memoirs after the war and they were published in 1930.

“Resuss” was a dreadful place. Here was sent the shocked and collapsed and dying cases, not able to stand as yet an operation, but which might be possible after the warming up under cradles in heated beds or transfusion of blood. The effect of transfusion was in some cases miraculous. I have seen men already like corpses, blanched and collapsed, pulseless and with just perceptible breathing, within two hours of transfusion sitting up in bed smoking, and exchanging jokes before they went to the operation table.

Answer: Source a is useful because it describes the way that casualty clearing stations were divided up into different areas, called wards by the author, for example reception area and an area for those in critical shape. The reception area was used to triage men to prioritise treatment, and source A provides useful information about the way this triaging was done rapidly, and that in this case a large number of men went to the pre-operation tent. This is where men brought in on stretchers were prepared for operations.

Source A also has useful information about the way patients were evacuated from his casualty clearing station by train, which meant the large numbers of men could be processed through the casualty clearing station, in this case 600 men at once. Casualty clearing stations were often close to railway stations, which made it easier to move large numbers of men back to base hospitals (Which were often near ports so that men could be evacuated home). Source A suggests the processing injured could be stressful during a battle when it says ’In come another 150, and why can’t number 11 take these and number two is behind in its work’. There was a huge amount of pressure and different casualty clearing stations did not always feel it was fair that they had more men to treat and others. Because this is a diary entry it should provide quite reliable evidence of how stressful it was to work at casualty clearing station, the diary is written so soon after the events is it described highlighting its usefulness.

Source B is written by someone who was a surgeon a casualty clearing station, which means it’s a first-hand account by medical expert. This means it is likely his description is an accurate record of what he experienced, although his description is written in an emotional style rather than as a medical account.

Source B contains useful information about how this casualty clearing station worked, especially the information about the resuscitation tent. It tells us that heated beds were used to warm patients and about blood transfusions. The description of the effects of blood transfusions is very interesting and useful because it shows just how effective blood transfusion could be as shown by effect of transfusion was ,in some cases miraculous. Many more transfusions were possible on the Western front due to the development of best better methods of storing blood.

**How could you follow up source B to find out more about the way casualty clearing stations treated injured men on the Western front?**

Detail in source B that I would follow up

*Effect of transfusion was in some cases miraculous*

Question I would ask

*How often did casualty clearing stations use blood transfusions?*

What type of source I could use?

*Army medical records about the amount of blood available to casualty clearing stations.*

How might this help answer my question

*it would highlight the statistical evidence of how much bloody was issued to casualty clearing stations and the success of operations*

2. How useful are sources A and B for an enquiry into the treatments that were available for wounded soldiers on the Western Front? (8 marks)

*Source A: from Harvey Cushing’s A Surgeon’s Journal 1915-18, published in 1936. This work includes extracts from the Journals kept by Cushing. He is describing conditions from the battle of Passchendaele.*

My prize patient, Baker, with the shrapnel ball removed from his brain, after doing well for 3 days suddenly shot up a temperature to 104 last night about midnight. I took him to the operating theatre, reopened the perfectly healed external wound, and found to my dismay a massive gas infection of the brain. I bribed two orderlies to stay up with him in the operating room. No light except candles was permitted last night.

*Source B: Photograph of a mobile x-ray unit taken in 1917*

A black and white photo of a horse drawn carriage

Description automatically generated

Source A is an account by Cushing of his wartime experiences as a brain surgeon. We can see that Cushing wanted patients to have the best possible treatment. He was prepared to ‘bribe two orderlies’ to keep watch on Baker. Cushing was successful in treating brain injuries, his patients had an above average survival rate, so it is unlikely he is exaggerating the care he gave to his patients. Although this account was published nearly 20 years after the war, it is very useful as it is based on his journal. Although this extract is only describing one surgeon and one patient’s experience in one type of surgery, it does point to information about treatment that would be received by soldiers and that they would be operated on in ‘candle light’.

Source B is useful because it shows a different way wounds were evaluated before treatment – x-rays. It is useful because it shows us an example of a mobile x-ray machine which was used on the Western Front. The photo shows us what the van and the machine looked like but we cannot tell from it how useful these machines actually were or how widely they were used. It also does not mention that there were only 6 of these machines on the Western Front.

**3. How would you follow up Source A to find out more about the treatments that were available for wounded soldiers on the Western Front? (4 marks)**

Detail in Source A that I would follow up:

“After doing well for three days a massive gas infection set in”

Question I would ask:

How effective were different types of treatments for dealing with infections like gas gangrene?

What type of source I could use:

Army medical records with statistical data on the types of treatment for gas gangrene

How this might help answer my question:

It would allow me to see the types of treatment used for gas gangrene and consider whether one was more useful than another.