

# Edexcel IGCSE: Changes in Medicine c1845-c1945 Practice Test (Sample)

## Study Guide



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**SAMPLE**

## **Questions**

- 1. Which of the following diseases did Koch identify the specific microbes for?**
  - A. Syphilis and influenza**
  - B. Cholera and typhoid**
  - C. Smallpox and measles**
  - D. Malaria and tuberculosis**
- 2. Which notable front-line treatment improved for soldiers due to advances made during WW1?**
  - A. Blood transfusions**
  - B. Psychological therapy**
  - C. Radiation therapy**
  - D. Chiropractic adjustments**
- 3. What historical event prompted significant changes in medical practices and innovations during the 20th century?**
  - A. The Great Depression**
  - B. World War I and World War II**
  - C. The Industrial Revolution**
  - D. The Civil Rights Movement**
- 4. What led to opposition against the use of anaesthetics like chloroform?**
  - A. Fear of excessive costs to patients.**
  - B. Doctors believed pain was beneficial for healing.**
  - C. Pressure from surgical suppliers.**
  - D. Public belief in traditional methods.**
- 5. How many plastic surgery operations were performed during WW1?**
  - A. 5,000**
  - B. 11,000**
  - C. 15,000**
  - D. 20,000**

- 6. Who discovered chloroform and in what year?**
- A. James Simpson, 1845**
  - B. James Simpson, 1847**
  - C. Joseph Lister, 1850**
  - D. Joseph Lister, 1853**
- 7. What opposition did the Conservative party have regarding public health reforms?**
- A. They believed public health reforms were unnecessary.**
  - B. They thought reforms would financially burden the poor.**
  - C. They considered the reforms too expensive, despite long-term savings.**
  - D. They wanted every household to fund its own health services.**
- 8. Why was WW2 significant for advancements in medicine?**
- A. Introduction of holistic medical practices**
  - B. Effective use of Penicillin changed survival rates**
  - C. Emergence of automated surgical systems**
  - D. Establishment of international health organizations**
- 9. What was a significant factor leading to the urgency for mass production of penicillin during World War Two?**
- A. The development of advanced surgical techniques**
  - B. Government funding and support**
  - C. The rising number of casualties**
  - D. The discovery of new antibiotics**
- 10. What was a key factor in Lister's success in implementing antiseptic methods?**
- A. Extensive funding by the government.**
  - B. Influence from Pasteur's germ theory.**
  - C. Support from all surgical staff.**
  - D. Public demand for safer surgeries.**

## **Answers**

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1. B
2. A
3. B
4. B
5. B
6. B
7. C
8. B
9. C
10. B

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## **Explanations**

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**1. Which of the following diseases did Koch identify the specific microbes for?**

- A. Syphilis and influenza**
- B. Cholera and typhoid**
- C. Smallpox and measles**
- D. Malaria and tuberculosis**

The identification of specific microbes responsible for certain diseases marked a significant advancement in medical science, particularly in the field of microbiology. Robert Koch is renowned for his role in identifying the causative agents of key infectious diseases. Koch established the principles of the germ theory of disease and famously identified the bacteria responsible for both cholera and typhoid fever. He discovered *Vibrio cholerae* as the causative agent of cholera in 1883, and later identified *Salmonella typhi*, which causes typhoid fever. These discoveries not only advanced the understanding of these diseases but also paved the way for improved public health measures, including better sanitation and water supply. In contrast, the other options listed involve diseases that were not identified by Koch in terms of their microbial causation. Syphilis, while linked to the spirochete bacterium *Treponema pallidum*, was studied by other scientists such as Paul Ehrlich. Influenza is caused by a virus, not a bacterium, and smallpox and measles are caused by variola virus and morbillivirus, respectively. Malaria is caused by protozoan parasites, particularly *Plasmodium* species, which had different contributors to their discovery. Therefore, the correct

**2. Which notable front-line treatment improved for soldiers due to advances made during WW1?**

- A. Blood transfusions**
- B. Psychological therapy**
- C. Radiation therapy**
- D. Chiropractic adjustments**

Blood transfusions significantly advanced during World War I due to the urgent need for effective treatments for soldiers injured in combat. Prior to the war, blood transfusions were risky and often resulted in complications due to inconsistencies in blood types and the lack of proper storage methods. However, the war spurred innovation in medical practices, including the development of blood typing and the storage of blood in refrigerators. The establishment of blood banks allowed for the safe storage and transfer of blood products, vastly improving the ability to perform transfusions on the battlefield. These advancements not only saved countless lives but also laid the groundwork for future practices in transfusion medicine. In this context, the immense improvements made during WWI led to blood transfusions becoming a standard procedure for treating severely wounded soldiers, demonstrating a direct impact of wartime medicine on the treatment of traumatic injuries. In contrast, while psychological therapy saw some attention during this period, primarily in the context of shell shock or PTSD, it did not receive the same level of advancement or recognition as blood transfusions. Radiation therapy was still in its nascent stages and not widely used for treatment during WWI. Chiropractic adjustments were also not a front-line treatment recognized or improved significantly within the context of the war. Therefore, blood

**3. What historical event prompted significant changes in medical practices and innovations during the 20th century?**

- A. The Great Depression**
- B. World War I and World War II**
- C. The Industrial Revolution**
- D. The Civil Rights Movement**

The significant changes in medical practices and innovations during the 20th century can largely be attributed to the impact of World War I and World War II. These two global conflicts acted as catalysts for advancements in medicine for several reasons. Firstly, the large scale of the wars led to unprecedented numbers of injuries, necessitating rapid advancements in surgical techniques and the development of new medical treatments to care for wounded soldiers. For example, the need for effective triage, blood transfusions, and the use of antibiotics, particularly penicillin after its discovery, transformed battlefield medicine and had lasting implications for civilian healthcare. Secondly, the wars spurred innovations in medical technology, including advancements in anesthesia, wound care, and rehabilitation. The pressures of wartime logistics and the urgent need for solutions accelerated research and development efforts that might have taken much longer in peacetime. Additionally, the experience and knowledge gained during these wars resulted in a more organized and systematically structured approach to public health and medicine following the conflicts, as nations recognized the importance of maintaining a healthy population for future stability. In contrast, while the Great Depression, the Industrial Revolution, and the Civil Rights Movement each had profound effects on society in various ways, they did not directly drive medical innovations to the extent that the world

**4. What led to opposition against the use of anaesthetics like chloroform?**

- A. Fear of excessive costs to patients.**
- B. Doctors believed pain was beneficial for healing.**
- C. Pressure from surgical suppliers.**
- D. Public belief in traditional methods.**

The opposition to anaesthetics like chloroform was significantly influenced by the belief among many doctors that experiencing pain was beneficial for healing. This perspective was rooted in historical medical practices and philosophical beliefs that suggested pain could serve a purpose in the body, possibly helping to strengthen the constitution or indicating that a process of healing was occurring. Additionally, there was a concern that anaesthetics could mask symptoms that were important for diagnosis, making it more difficult for doctors to understand the true nature of a patient's condition. This led some medical practitioners to advocate for their use with caution, if at all, due to traditional beliefs about the body's response to surgery and illness. In contrast, while the costs to patients, pressures from surgical suppliers, and public beliefs in traditional practices played roles during the era, they were not as pivotal in shaping the professional opposition to anaesthetics as the conviction that pain had a healing benefit. This entrenched view among medical professionals made the acceptance of anaesthetics a gradual process, often met with skepticism.

**5. How many plastic surgery operations were performed during WW1?**

- A. 5,000**
- B. 11,000**
- C. 15,000**
- D. 20,000**

During World War I, approximately 11,000 plastic surgery operations were performed. This era marked a significant development in the field of reconstructive surgery due to the devastating injuries sustained by soldiers, particularly those involving facial disfigurements. Surgeons like Sir Harold Gillies pioneered techniques in this area, leading to advancements in surgical methods and understanding of skin grafting. The experiences and innovations from this period laid the groundwork for modern plastic surgery, highlighting the importance of addressing not only physical injuries but also the psychological aspects of disfigurement. This substantial number of operations reflects the urgent need for medical interventions during and after the war.

**6. Who discovered chloroform and in what year?**

- A. James Simpson, 1845**
- B. James Simpson, 1847**
- C. Joseph Lister, 1850**
- D. Joseph Lister, 1853**

The discovery of chloroform is attributed to James Simpson in the year 1847. Simpson was a Scottish obstetrician who conducted experiments with various anesthetics to find a safer option for surgical procedures. In 1847, after testing chloroform on himself and others, he recognized its effectiveness in producing anesthesia, leading to its wider acceptance in surgical practices. This marked a significant advancement in medicine as it allowed for painless surgeries, transforming patient care during the Victorian era. The other options mention other dates and individuals who are significant in the history of medicine but are not related to the discovery of chloroform. Joseph Lister, for example, is known for his work on antiseptic surgery rather than the discovery of chloroform. Therefore, option B accurately identifies both the correct discoverer and the correct year.

**7. What opposition did the Conservative party have regarding public health reforms?**

- A. They believed public health reforms were unnecessary.
- B. They thought reforms would financially burden the poor.
- C. They considered the reforms too expensive, despite long-term savings.**
- D. They wanted every household to fund its own health services.

The Conservative Party's opposition regarding public health reforms stemmed primarily from their concerns about the financial implications of these reforms. They argued that the immediate costs of implementing comprehensive health reforms would be too high, even if these reforms could potentially lead to long-term savings. This apprehension about funding often highlighted the perspective that investing in public health would strain the government's budget and resources rather than provide quick, tangible benefits. During this period, there was a significant debate surrounding the balance between state intervention in health matters and individual responsibility. While many reformers advocated for improved public health measures as a means to reduce disease and improve the overall well-being of society, the Conservatives feared that the upfront costs could lead to increased taxes or financial burdens on the government. The other options present views that do not fully encapsulate the core concerns of the Conservative Party. For example, the belief that public health reforms were unnecessary does not address the underlying financial worries. Similarly, while there may have been considerations regarding the poor and their finances, the main issue revolved around the perception of cost-effectiveness of the reforms. The notion that every household should fund its own health services reflects a more individualized approach that was less common among the Conservative Party, which generally favored responsible government spending while being cautious about

**8. Why was WW2 significant for advancements in medicine?**

- A. Introduction of holistic medical practices
- B. Effective use of Penicillin changed survival rates**
- C. Emergence of automated surgical systems
- D. Establishment of international health organizations

The significance of World War II for advancements in medicine can be particularly attributed to the effective use of Penicillin, which dramatically changed survival rates during the war. Before the widespread use of Penicillin, bacterial infections could lead to severe complications or death, especially in wounded soldiers. However, as Penicillin became available, it was used effectively to treat infections, reducing mortality rates significantly. This breakthrough demonstrated the importance of antibiotics in treating infections and laid the groundwork for modern antibiotic therapy. The success of Penicillin during the war not only saved countless lives but also spurred further research into antibiotics, ultimately transforming the landscape of medical treatment in the years following the conflict. The other options, while related to important aspects of medical advancements, do not capture the immediate impact seen during WWII. Holistic medical practices had been developing prior to the war and did not see a revolutionary change due to the war itself. Automated surgical systems were not fully realized until much later, and although international health organizations began to form post-war, their establishment was more a reaction to the war rather than a direct advancement that transformed medical practice during the war itself. Hence, the effective use of Penicillin stands out as the key advancement that directly influenced survival rates during this critical period.

**9. What was a significant factor leading to the urgency for mass production of penicillin during World War Two?**

- A. The development of advanced surgical techniques**
- B. Government funding and support**
- C. The rising number of casualties**
- D. The discovery of new antibiotics**

The rising number of casualties during World War Two created an urgent need for effective medical treatments, particularly antibiotics, to combat infections resulting from wounds and injuries sustained in combat. As soldiers faced extensive injuries on the battlefield, the prevalence of infections increased, which significantly affected the survival rates of troops. Penicillin, discovered by Alexander Fleming in 1928, was recognized for its potential to treat bacterial infections effectively. However, it was during the war that the urgency for its mass production became clear. The ability to save lives and reduce the mortality rate from infected wounds hinged on having a readily available supply of penicillin. This led to collaborative efforts between pharmaceutical companies and the government to ramp up production to meet the military's needs. While other factors such as government funding and support played a role in the production of penicillin, or the development of advanced surgical techniques provided better care, the immediate and pressing reality of rising casualties directly influenced the prioritization of penicillin's mass production during the war effort.

**10. What was a key factor in Lister's success in implementing antiseptic methods?**

- A. Extensive funding by the government.**
- B. Influence from Pasteur's germ theory.**
- C. Support from all surgical staff.**
- D. Public demand for safer surgeries.**

Lister's success in implementing antiseptic methods can be largely attributed to his influence from Pasteur's germ theory. This groundbreaking theory, which proposed that microorganisms were responsible for infection and disease, provided the scientific basis for Lister's antiseptic practices. Prior to the acceptance of germ theory, many surgeons were unaware of the actual causes of postoperative infections and deaths. However, once Lister adopted and applied Pasteur's findings by introducing measures to sterilize his instruments and clean surgical environments, he was able to significantly reduce the incidence of surgery-related infections. This foundational understanding of germs and their role in infection directly shaped Lister's methodologies and allowed him to effectively promote antiseptic techniques within the medical community.