Health and Medicine
The Renaissance and Industrial Britain

1. Keywords

Contagious	A disease spread from one person to another through direct contact. It was widespread in Britain in the 18th Century and spread very quickly, killing many people.
Endemic	Regularly found
Eradicated	Eliminated
Germs	Bacteria
Germ theory	*The discovery by Pasteur that Germs (bacteria) caused disease changed everything. This became known as the Germ theory. He saw that microbes in the air caused disease and that if they could be identified then vaccines could be produced to target specific diseases*
Immune	Resistant
Inoculation	Means deliberately infecting with a disease to avoid a more severe case of it later.
Spontaneous generation	Before Pasteur discovered that germs causes disease, doctors had realised that bacteria existed but thought that the disease caused the bacteria, not the other way round. This was called the theory of spontaneous generation

2. Key events

Date	
1348	The Black Death
1400-1700	The Renaissance
1665	The Great Plague
1796	Jenner tests his theory by inserting pus taken from the cowpox pustule of a milkmaid into a cut on a young boy's arm. Days later the boy is exposed to smallpox and is shown to be immune (resistant)
1831	Cholera arrived in Britain
1832	Edwin Chadwick Public Health Report
1837	Cholera outbreak
1842	Ether used
1844	Nitrous oxide used
1846	Ether used in public demonstration
1848	Cholera outbreak of 1848 was worse than any other and became an agent of change. First Public Health Act
1853	Queen Victoria uses chloroform Vaccination against smallpox made compulsory in England and Wales.
1854	Dr Snow discovers cause of cholera
1858	Great stink and Bazalgette starts building sewers
1861	Germ theory
1866	Sanitary Act
1875	Second Public Health Act, Artisan's Dwelling Act, Sale of Food and drugs

3. Time periods & Command Words

1066-1450

The Middles Ages (Medieval)

1400 -1700

The Renaissance

1750-1900

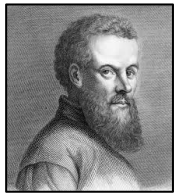
Industrial Britain

1900 – present

Modern Britain.

Command Word	What the examiner wants you to do	Connectives to use
Describe	Say what happened during an event using detail.	One key feature was… This is because… This meant that
Explain	To give a reason and justify it using details and information.	Because… This means that… This led to…
Write an account	You need to explain how events led to an outcome. This means you need to explain how one event led to another.	Therefore… Due to… Consequently… One consequence of this was… This caused… This led to… This resulted in… This meant that

4. Individuals & key beliefs



Andreas Vesalius

Renaissance

Studied medicine in Padua, later became Professor of Anatomy and Surgery.

Convinced Anatomy was best way to understand the human body, and unlike people before him did his own dissections.

In his book – Fabric of Human body he corrected over 300 of Galen's mistakes and argued the importance of doctors learning from dissections rather than books.

Ambroise Pare

Renaissance

Was a barber surgeon who learned a lot from being an army surgeon

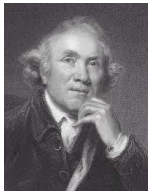
He invented new ways of sealing wounds on the battlefield and used ligatures to tie blood vessels for the first time.

William Harvey

Renaissance

Studied medicine in Padua and came back to England in 1602.

Interested in physiology, particularly blood, and used experiments and dissection he proved that blood circulates around the body using arteries and veins with valves. He also showed that the heart acted as pump for the system. His understanding of the circulatory system is basis of what we know now.



John Hunter

Industrial Britain

Scottish surgeon

Heavily interested in dissection and gifted at anatomy.

1760 became an army surgeon an saw many casualties in war.

Set up a practise which trained many new doctors, including Jenner.

Known as 'Father of Scientific surgery'

Edward Jenner

Industrial Britain

Country doctor who studied medicine in London.

As a doctor he inoculated patients against small pox.

Working in the country, he had heard that milkmaids didn't catch smallpox and set out to discover why. Discovered they did catch cowpox, an reasoned that this must make them immune to smallpox. Experimented and proved this was true, calling his new idea vaccination.

5. Individuals & key beliefs

Florence Nightingale

Industrial Britain

Significant in bringing about change in hospitals.

She challenged methods during the Crimean war. Led to death rates plummet from 42% to 2%.

Set up Britain's first Nursing training school

James Simpson

Industrial Britain

An obstetrician – specialist in childbirth. Pioneer of using chloroform as anaesthetic.

Physician to Queen Victoria and the first person to deliver a baby

Using anaesthetic. Notorious for experimenting on his friends

Worked tirelessly to make chloroform safer and more effective.

Discovery taken up within weeks in Europe once he proved it worked.

Joseph Lister

Industrial Britain

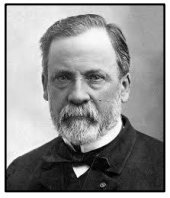
Introduced new ideas on cleanliness in surgery in the late 1800s, leading to what some historians call the 'Revolution in Surgery'.

Before he introduced 'sterile surgery', *surgery free from germs,* many people died due to infection.

After reading Pasteur's germ theory he started to use Carbolic acid to cover wounds and spray on instruments to keep them clean.

He also insisted on hand washing in surgery.

His ideas were taken on by many surgeons and infection rates dropped greatly as a result.

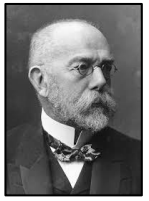


Louis Pasteur

Industrial Britain

French Chemist who used experiments with beer and milk to discover small organisms that made these liquids go off, which he called germs. Invented pasteurisation by working out that a lot of these germs could be killed off by heating them.

His work went on to be used by him and others to develop vaccinations and magic bullets.



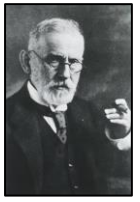
Robert Koch

Industrial Britain

German doctor, considered to be founder of modern bacteriology

Used experiments to prove that specific microorganisms were responsible for causing disease. Also developed a way of staining bacteria so could be seen under a microscope.

Awarded Nobel Prize in 1905.



Paul Ehrlich

Modern Britain

German chemist joined Koch's research team as a young scientist. His aim was to use his experience in chemistry to advance medicine.

He came up with the term 'Chemotherapy' and discovered the process for using chemical dyes to stain and kill specific bacteria, but not harm anything else in a patient's body.

1908 he was awarded the Nobel prize

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Treatment of disease

1861 - Louis Pasteur discovered Germ Theory proving the theory of Spontaneous Generation wrong but it was not accepted immediately. Robert Koch applied Pasteur's theory to human diseases. He was the founder of bacteriology and proved that specific bacteria caused specific diseases.

In 1876 he discovered the microbe responsible for anthrax, 1884 - cholera and 1882 - tuberculosis. He also discovered stains to dye microbes under a microscope. Pasteur and Koch were rivals and sponsored by their governments which motivated their work. Pasteur and his team created a vaccine for rabies and anthrax. This work was accepted in Britain due to John Tyndall and William Cheyne.

Paul Ehrlich (Koch's assistant) found chemicals that would not only stain but kill specific types of bacteria. In 1909 he discovered a chemical cure for syphilis. These cures became known as 'magic bullets'. Prontosil worked against the germs that caused blood poisoning and 'sulpha drugs' were developed for meningitis, pneumonia and scarlet fever.

7

Improvements in surgery

The key problems of surgery were pain, infection and blood loss. Anaesthetics - nitrous oxide was identified by Humphrey Davy and used by Horace Wells in 1844 to extract teeth. Ether was also used by the dentist William Clark in 1842 and Dr Crawford Long removed a neck growth with it. In 1846 William Morton gave a public demonstration and in December Robert Liston amputated a leg with it. It was difficult to inhale though and was also flammable.

Chloroform was the alternative and discovered by James Simpson. Surgeons could now take more time over operations but this had initial problems such as dosage. Hanner Greener died of an overdose during a toenail operation in 1848. In 1853 Queen Victoria used chloroform in childbirth making it more acceptable.

Antiseptics - Joseph Lister had read about Germ Theory and applied it to the problem of infection. He used carbolic acid to stop the spread of germ spraying it on hands, wounds, equipment and in the room. This dramatically reduced death from infection but they were still wearing outdoor clothing and it was not pleasant to use. The next step was aseptic surgery where germs were removed from the room. Facemasks, rubber gloves, gowns and sterilised instruments replaced public operating theatres and dramatically reduced infections.