

Knowledge organisers: Britain, Health and the People c.1000-present - knowledge organisers are the bare bones – to move beyond the lowest grades, you need to learn more detail than this

## Health and the People: Medieval

1	The Medieval period was between c.500 and c.1500. During this time, the Catholic Church was incredibly influential and supernatural ideas were common. There were a few developments (e.g. John Arderne's developments in surgery; medical developments from the Islamic World), but mostly ideas stayed the same across the 500 years from 1000-1500.	
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### Key events

2	c460-375 BC	Hippocrates lived in Ancient Greece
3	c129-216 AD	Galen lived in the Ancient Roman Empire
4	1025	Ibn Sina (Avicenna) published <i>The Canon of Medicine</i>
5	1123	St Bartholomew's Hospital opened, London
6	c.1230	<i>Compendium Medicine</i> published
7	1376	John Arderne's new arrow wound treatment
8	1348-1350	The Black Death

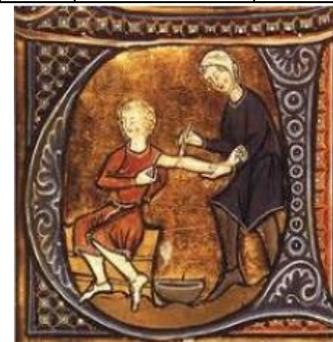
### Key ideas and developments

9	Hippocrates	Came up with the theory of the Four Humours – the idea that the body contains four liquids that need to be kept in perfect balance for a person to be healthy. Believed in observing his patients to see if treatments were working. The four humours was the first <b>natural</b> theory of medicine.
10	Galen	Developed Hippocratic ideas by adding treatment by opposites. Wrote a lot about anatomy, but often used animals in his dissections so not all of his ideas were accurate. During the medieval period, the Church believed that Galen's ideas were perfect.
11	The influence of the church	The Catholic Church was incredibly influential in the Medieval period. They believed that disease was a punishment from God and that Galen's ideas were perfect. They thought the best treatments were religious, e.g. prayer.
12	Hospitals	Medieval hospitals were run by the Church, e.g. in monasteries. They were more likely to provide hospitality, ie. a place to rest, rather than actual medical treatments.
13	Bleeding and purging	Two common treatments within the four humours theory. The idea was to get rid of the 'excess' of the blood/bile in order to restore the balance of the four humours in the body.
14	Islamic World	There were several medical developments in the Islamic World, including Ibn-Sina's book <i>The Canon of Medicine</i> . This included Hippocratic and Galenic ideas as well as new ideas developed by

		Islamic doctors (e.g. Al-Razi accurately described the difference between smallpox and measles).
15	John Arderne and surgery	A widely respected surgeon. He worked as an army surgeon. He developed new ideas, e.g. using opium to numb pain and an ointment for arrow wounds which mixed opium and henbane. Surgery at this time was very dangerous, with no safe and effective anaesthetic and very high rates of death from infection.
16	Super-natural	Beliefs that there were supernatural causes for disease were very common. As well as Christian ideas, people believed in astrology, e.g. that certain illnesses were caused by the position of the stars and planets.
17	Natural	The Four Humours was the first natural theory of disease, as it was an idea that disease was caused by physical changes rather than by supernatural forces. The idea that disease was caused by miasma (bad air was also a natural theory

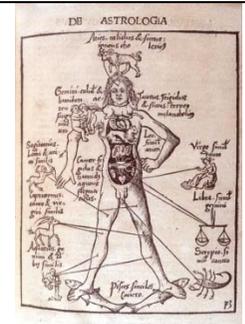
### Key words

18	Natural	With a physical cause. Natural theories of disease suggest that diseases have physical causes.
19	Supernatural	Without a physical cause. Supernatural theories of disease suggest that diseases are caused e.g. by evil spirits, God or astrology.
20	Bloodletting	A four humours treatment where the patient's blood would be 'drained off' by making a cut and letting the blood run.
21	Purging	A four humours treatment where the patient would be made to vomit.
22	Smallpox and measles	Two different diseases that both have a rash as one of the symptoms.



← Someone being bled to 'rebalance their humours'

→ A chart giving advice about the influence of astrology on health



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## Health and the People: Early Modern

1	The Early Modern Period was between c.1500 and c.1800. During this time, medial ideas started to change. People challenged accepted ideas (e.g. Galen) with new evidence.
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### Key events

2	c.1400-c.1700	The Renaissance
3	1542	Vesalius publishes <i>On the Fabric of the Human Body</i>
4	1575	Pare publishes <i>Les Ouvres</i>
5	1628	William Harvey proves the circulation of the blood
6	1665	The Great Plague of London
7	1724	Guy's Hospital is founded in London
8	1767	John Hunter became a fellow of the Royal Society
9	1798	Edward Jenner develops the first <b>vaccination</b> (smallpox)

### Key ideas and developments

10	Andreas Vesalius	Vesalius was a highly intelligent and motivated individual. He even stole dead bodies to dissect them. He made several discoveries in <b>anatomy</b> that proved Galen wrong (e.g. one bone in the jaw), and made very detailed anatomical drawings in his book. However, many people didn't accept his ideas.
11	Ambroise Pare	Pare was an army surgeon. After, by chance, running out of <b>cauterisation</b> oil, he developed <b>ligatures</b> as a way of sealing blood vessels after amputation. This was an impressive development, but it didn't improve the death rate after surgery because of infection.
12	William Harvey	Harvey studied the heart and accurately described the system of <b>blood circulation</b> . This cast doubt on Hippocrates and Galen's idea about the blood (that it was one of the four humours). However, lots of people didn't accept his ideas.
13	Reaction against Renaissance ideas	People were very attached to traditional ideas. Despite the <b>scientific</b> studies and evidence that led to the new ideas of Vesalius, Pare and Harvey, many people still believed Hippocrates and Galen's ideas.
14	John Hunter	Hunter was the most important surgeon of this period. His approach to surgery was scientific: he tested ideas rather than accepting them without question. He understood that surgery had a high death rate attached, so only used surgery as an absolute last resort. He was interested in anatomy, setting up his own anatomy school and dissecting thousands of bodies.

15	Great Plague	An outbreak of plague that hit London in 1665. It resulted in about 6500 deaths. Some of the responses were superstitious and based on traditional ideas (e.g. poesies of herbs to protect against miasma). There was some input from government, e.g. by quarantining plague victims.
16	Traditional vs new ideas	Even though there were new scientific ideas being developed, many people were still attached to old ideas, including Hippocratic and Galenic methods (e.g. bloodletting) and superstitious treatments (e.g. people believed that being touched by the monarch would cure them of 'the king's evil', a name for the disease scrofula).
17	Quackery	This was a dishonest medial practice. Quacks would often claim that their treatments 'cured everything' but actually they had no effect. Most quack medicines were a mixture of opium and alcohol, which made people feel they were getting better when they weren't.
18	Hospitals	In the medieval period, most hospitals were in monasteries. However, monasteries were closed during the <b>reformation</b> .

### Key words

19	vaccination	A way of preventing a disease by injecting (etc.) a substance that stimulates an immune response, preparing the body for when it has the real disease.
20	cauterisation	Sealing a wound (e.g. amputation) by burning it, e.g. with hot oil.
21	ligatures	Something used to seal a wound (e.g. an amputation or surgical wound) by tying the blood vessels.
22	blood circulation	The system by which blood is pumped round the body by the heart in blood vessels (arteries and veins).
23	scientific	Finding things out by careful testing and experimentation. This makes it clear that what you are saying is true.
24	reformation	The process of Britain changing from being a Catholic Country to a Protestant country (two types of Christianity). This reduced the power of the church in Britain.



A famous cartoon showing opposition to Jenner's ideas. It shows that people were fearful of what the vaccination would do to them. The cartoonist has made a comical comment on this by showing cows sprouting out of patients.

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## Health and the People: 19<sup>th</sup> century

1	In the specification, this section of the course is called 'A Revolution in Medicine'. This is because understanding of disease and effective, scientific medical and surgical treatments developed very quickly. Public health systems also improved significantly towards the end of the 19 <sup>th</sup> century.
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### Key events

2	1832	Cholera epidemic
3	1847	Simpson used chloroform as an anaesthetic
4	1848	Cholera epidemic; First Public Health Act
5	1853	Smallpox vaccination made compulsory
6	1853-1856	Crimean War – Nightingale's work on sanitation
7	1858	Joseph Bazalgette begins building sewers in London
8	1861	Louis Pasteur publishes Germ Theory
9	1863	Florence Nightingale publishes <i>Notes on Hospitals</i>
10	1867	Joseph Lister publishes a description of antiseptic surgery
11	1875	Second Public Health Act
12	1876	Koch proves his work on anthrax
13	1882	Koch's work identifying TB publicised in Britain

### Key ideas and developments

13	Pasteur's work	Pasteur's experiments disproved <b>spontaneous generation</b> and that pathogens in the air cause disease.
14	Koch's work	His experiments proved specific bacteria caused disease. He stained bacteria to see them under a microscope and identified the pathogens that caused anthrax, TB and cholera.
15	Germ Theory and ordinary medicine	Pasteur's experiments with chicken cholera found that a weakened form of the disease bacteria could help people develop immunity without developing symptoms. Pasteur developed vaccines for anthrax and rabies. Ehrlich and Fleming's work also used germ theory – on the next page.
16	Public health problems in the early 19 <sup>th</sup> century	Most towns were overcrowded, poor housing and few clean water or <b>sewage</b> systems. Poverty was widespread. Cholera and typhus outbreaks were common. Different groups argued about whether the government should interfere; most were <b>laissez-faire</b> . A terrible cholera epidemic in 1848 led to the first public health measures.
17	Public Health Acts	The first Public Health Act (1848) encouraged Local Boards of Health – these were meant to appoint medical officers, provide sewers and inspect houses. Only 30% of authorities set them up. The second Public Health Act (1875) made them compulsory

		and brought together other developments e.g. clean water, improved housing and control of disease.
18	Joseph Bazalgette	The Great Stink (1858) was a very hot summer which made the smell of human waste in the Thames unbearable. This and the cholera outbreaks made it clear that London needed a sewage system. Bazalgette engineered a huge, complex set of sewers to move waste under the city.
19	John Snow	John Snow found that the 1854 cholera epidemic was spread by contaminated water. However, people did not accept his ideas, especially because this was before Germ Theory.
20	Florence Nightingale	She worked as a nurse in the Crimean War, finding that clean hospitals improved recovery. She published a book, campaigned for clean hospitals and set up a nursing school.
21	Anaesthetics	Chloroform's effects were discovered by James Simpson; it quickly spread in popularity, but some people were reluctant to accept it because of fears it was dangerous (some people died from using it and their deaths were widely reported) and because of religious objections. Queen Victoria used it in childbirth in 1853 helping it to become accepted.
22	Antiseptics	Lister read Pasteur's work and realised it could be applied to surgery. He used carbolic acid to sterilise surgical instruments and wash patients' surgical wounds. He worked hard to debate people who still believed spontaneous generation. By the 1890s, aseptic surgery (a <b>sterile</b> surgical environment) was the norm in Britain.

### Key words

23	spontaneous generation	The incorrect but widely accepted idea that pathogens generated out of nothing. Disproved by germ theory.
24	germ theory	The fact that pathogens, spread in the air and in water, cause disease.
25	chloroform	A chemical which 'puts to sleep' a patient so they can't feel any pain during surgery. It can numb pain during childbirth.
26	sterile	An environment where pathogens are absent.
27	sewage	Human waste (toilet waste).



L to R: Pasteur's experiments, a painful operation before the use of anaesthetics; Florence Nightingale

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## Health and the People: 1900-present

1	This period saw further scientific developments, including 'magic bullets' and the first antibiotic. The two World Wars led to developments in surgery and changed attitudes. A welfare state was established, leading to vast improvements in public health.
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### Key events

2	1899-1902	Boer War
3	1906-1914	Liberal Welfare Reforms
4	1909	Paul Ehrlich found Salvarsan, a 'magic bullet' cure for syphilis
5	1914-1918	WWI – Harold Gillies' work on facial plastic surgery
6	1928	Fleming discovers antibiotic properties of penicillin
7	1939-1945	WWII – Florey and Chain mass produce penicillin
8	1942	Beveridge Report
9	1948	NHS established by Bevan
10	1953	Structure of DNA discovered by Watson and Crick
11	1967	First successful heart transplant
12	1978	First 'test tube' baby born
13	2003	Human Genome Project (sequencing of genome) complete

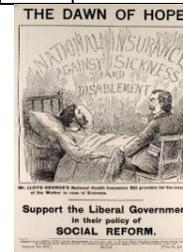
### Key ideas and developments

13	Magic Bullets	Ehrlich reasoned that if a chemical could dye specific pathogens, a chemical could kill specific <b>pathogens</b> . He set out to find these chemicals - 'magic bullets'. In 1909, he found Salvarsan 606, which cured syphilis. By 1914, his team had found magic bullets to kill malaria and sleeping sickness.
14	Penicillin	Fleming found a petri dish and realised that the mould (penicillin) had killed some bacteria. He wrote about his discovery in 1928, but didn't mass produce it. Florey and Chain, used US government funding and worked with <b>pharmaceutical</b> companies. It was used to treat WW2 allied soldiers. 650 billion doses were produced in 1945.
15	Plastic surgery	WWI Shrapnel wounds led army surgeon Gillies to develop a way to reconstruct facial tissue. This was developed in WWII by Archibald McIndoe. In 2010, the first full face <b>transplant</b> was carried out in Spain.
16	New treatments	Antibiotics (such as penicillin) are very effective, but their widespread use has led to antibiotic resistance and 'superbugs' such as MRSA. After the 1960s thalidomide disaster, drug safety rules were improved. The discovery of blood types led to success in <b>blood transfusions</b> . New surgical procedures led to

		successful transplants and in 1970 a drug was developed to prevent the body from rejecting new organs.
17	Technology	Surgery has transformed medicine and surgery, e.g. keyhole surgery, laser surgery, x-rays, CT and MRI scans, radiation therapy and robots in surgery.
18	DNA	The genetic codes that contain instructions for how the body functions. Its structure was described by Watson and Crick and a project sequenced the human genome in the early 2000s. Understanding DNA helps doctors to understand disease, and some treatments (gene therapies) modify DNA.
19	Liberal Welfare Reforms	The Boer War exposed public health problems. Campaigners Rowntree and Booth argued that reforms were needed. The Liberal government introduced free school meals (1906) and medical inspections in schools (1907), old age pensions (1908) and insurance for sick and unemployed workers (1911 – the National Insurance Act).
20	Post-War Welfare Reforms	The War created a sense of community responsibility. Beveridge published a report that recommended a welfare state to guard against the 'five giants' (e.g. disease and want (poverty)). Bevan, a Labour politician, was committed to setting up a free National Health Service, and managed to persuade doctors to get involved. There were also improvements to sickness and unemployment payments and housing.
21	21 <sup>st</sup> Century healthcare	Debates continue about modern healthcare, including about the cost of the health service and the ethics of some treatments.

### Key words

22	pathogen	A microbe that causes disease – e.g. bacteria, virus
23	pharmaceutical	The science of developing medical drugs.
24	transplant	When an organ or tissue is donated by one person and surgically inserted into another person
25	transfusion	One person's blood given to another person as a treatment
26	welfare reform	Changes to government policy to help the individuals in society, e.g. by improving health and reducing poverty



← A poster in support of the Liberal Welfare Reforms

→ Some of the first mass-produced penicillin

