

Changes in Health and Medicine in Britain c500-present

1hr 15 min exam

7 questions

- 1) Use Sources A, B and C above to identify one similarity and one difference in.....[4]
- 2) Which of the two sources is the more reliable to an historian studying..... [6]
- 3) Describe the development of [5]
- 4) Explain why developments in were important in...(Focus).....(dates) [9]
- 5) Outline how..... to have changed from c.500 to the present day? [16] + 4
- 6a) Describe two main..... in Eyam in 1665. [8]
- 6b) Explain why the..... of Eyam during the Great Plague was significant in showing in the seventeenth century. [12]

2F. CHANGES IN HEALTH AND MEDICINE IN BRITAIN, c.500 to the present day**COMPONENT 2: THEMATIC STUDY**

This option focuses thematically on the main trends in the history of health and medicine in Britain from c.500 to the present day. Candidates will be required to consider the causes, treatment and prevention of illness and disease, advances in medical knowledge, developments in patient care and advances in public health and welfare over time. Candidates will also be required to examine the major political, social, economic and cultural perspectives which have contributed to the development of health and medicine from c.500 to the present day. In this option, centres should ensure that they focus, where appropriate, on the issues of change, continuity, significance and turning points. As part of this option candidates will investigate an historic site connected with this theme. *The required content in italics shows which key features and characteristics of the period must be studied.*

Key questions	Required Content
<u>Causes of illness and disease</u> What have been the causes of illness and disease over time?	<i>Problems in the medieval era: poverty, famine, warfare: lack of hygiene in the medieval and early modern eras with reference to the Black Death of the fourteenth century and the Great Plague of the seventeenth century; the effects of industrialisation and the incidence of cholera and typhoid in the nineteenth century; the spread of bacterial and viral diseases in the twentieth century</i>
<u>Attempts to prevent illness and disease</u> How effective were attempts to prevent illness and disease over time?	<i>Early methods of prevention of disease with reference to the Black Death: alchemy, soothsayers and medieval doctors; the application of science to the prevention of disease in the late eighteenth and early nineteenth centuries: the work of Edward Jenner and vaccination; the influence and spread of inoculation since 1700; the discovery of antibodies and developments in the field of bacteriology</i>
<u>Attempts to treat and cure illness and disease</u> How have attempts to treat illness and disease changed over time?	<i>Traditional treatments and remedies common in the medieval era: herbal medicines, barber surgeons, use of leeches; Joseph Lister and the use of antiseptics in the later nineteenth century; James Simpson and the development of anaesthetics; twentieth century developments: Marie Curie and the development of radiation; the roles of Fleming, Florey and Chain regarding antibiotics; Barnard and transplant surgery; modern advances in cancer treatment and surgery; alternative treatments</i>
<u>Advances in medical knowledge</u> How much progress has been made in medical knowledge over time?	<i>Common medical ideas in the medieval era: the influence of alchemy, astrology and the theory of the four humours; the influence of the medical work of Vesalius, Pare and Harvey in the sixteenth and seventeenth centuries; nineteenth century advances in medical knowledge: improved knowledge of the germ theory: Pasteur and Koch; the development of scanning techniques in the twentieth century: X-rays, ultrasound and MRI scans; the discovery of DNA and genetic research in the later twentieth century</i>
<u>Developments in patient care</u> How has the care of patients improved over time?	<i>The role of the church and monasteries from medieval times up to the mid sixteenth century; the roles of voluntary charities in patient care after the mid sixteenth century; science and the development of endowed hospitals in the late eighteenth century; Florence Nightingale and the professionalisation of nursing in the nineteenth century; the impact of the early 20th century Liberal reforms; the Beveridge Report of 1944 and provision under the NHS after 1948</i>
<u>Developments in public health and welfare</u> How effective were attempts to improve public health and welfare over time?	<i>Public health and hygiene in medieval society; public health and hygiene in the sixteenth and seventeenth centuries; the impact of industrialisation on public health in the nineteenth century; the work of Edwin Chadwick leading to Victorian improvements in public health; efforts to improve housing and pollution in the twentieth century; local and national government attempts to improve public health and welfare in the twenty-first century: campaigns, fitness drives, healthy eating</i>

[Pages 4 – 11]**[Pages 12 – 20]****[Pages 21 – 32]****[Pages 33 – 43]****[Pages 44 – 57]****[Pages 58 – 65]**

	MIDDLE AGES 500 - 1500	EARLY MODERN 1500 - 1700	INDUSTRIAL REVOLUTION 1700 - 1900	20TH CENTURY 1900 - 2000
HUMAN HEALTH	<ul style="list-style-type: none"> Life expectancy: 35 years 	<ul style="list-style-type: none"> Life expectancy: 36 years 	<ul style="list-style-type: none"> Life expectancy: 46 years 	<ul style="list-style-type: none"> Life expectancy: 80 years
CAUSES OF ILLNESS	<ul style="list-style-type: none"> Poverty -> malnutrition Famine Warfare -> infection The Black Death 1348- 1349 	<ul style="list-style-type: none"> FOCUS STUDY The Great Plague 1665 <ul style="list-style-type: none"> Eyam (cloth, rats, fleas) Tailor's assistant, George Vicars Thomas Stanley (old vicar) William Mompesson (new vicar) Overcrowding Great Fire of London 	<ul style="list-style-type: none"> Snow - Cholera- John Snow's map Movement of people from the country to the city -> over population -> increase of housing -> low standard of living Miasma theory (dirty, city air causing disease) 	<ul style="list-style-type: none"> Bacterial infections -> resistance to drugs Troop movement -> spread disease Viruses e.g. Spanish Flu and AIDS
PREVENTING ILLNESS	<ul style="list-style-type: none"> Alchemy, Soothsayers, Mother Shipton Medieval Doctors Superstition Barber Surgeons 	<ul style="list-style-type: none"> Clean living, fresh air Cold water treatment - spas Diet and exercise Vegetarianism became fashionable 	<ul style="list-style-type: none"> Immunology Jenner- developed vaccinations (he noticed milk maids who got cowpox never got smallpox) Pasteur Koch 	<ul style="list-style-type: none"> Koch- developed Jenner's findings Antibodies- the use of bacteria to prevent illness Ehrlich Magic bullets (first effective treatment for Syphilis) Public Health NHS Vaccine programmes - MMR
TREATMENT	<ul style="list-style-type: none"> Astrology – zodiac charts Herbs Barber Surgeon Leeches and bloodletting 	<ul style="list-style-type: none"> Amputation Barber Surgeon Blood letting 	<ul style="list-style-type: none"> Lister- antiseptics Opium and alcohol to numb pain during surgery Laughing gas Simpson - Chloroform 	<ul style="list-style-type: none"> Curie- radiotherapy Fleming- antibiotics Florey & Chain - antibiotics Barnard- transplant surgery Alternative therapies Microsurgery
MEDICAL KNOWLEDGE	<ul style="list-style-type: none"> Galen - astrology Hippocrates- 4 Humours Church influence 	<ul style="list-style-type: none"> Vesalius- dissected humans Pare- surgeon, prosthetic limbs Harvey- blood circulation Microscope invented 	<ul style="list-style-type: none"> Pasteur- Germ Theory Koch- isolated different germs Ehrlich Magic bullets (compounds that target and kill disease-causing microbes in the body) first effective treatment for Syphilis 	<ul style="list-style-type: none"> X Rays CT, PET and MRI scanning Ultrasound
PATIENT CARE	<ul style="list-style-type: none"> Hospitals ran by the church Alms-houses (care homes for the elderly) Money given by rich people believing they would go for heaven for helping others 	<ul style="list-style-type: none"> Henry VIII closed church-ran hospitals Charities and town councils took over 	<ul style="list-style-type: none"> Nightingale- hygiene standards Dispensaries set up Teaching hospitals -> professional nursing 	<ul style="list-style-type: none"> Liberal Reforms – National Insurance. School Health Beveridge report, NHS set up 1946 Government Welfare- pensions and insurance Medical inspections
PUBLIC HEALTH	<ul style="list-style-type: none"> No Public Health / accidental Limited knowledge or understanding Seen as unimportant 	<ul style="list-style-type: none"> Link made between dirt and disease The Great Fire of London -> rebuild London -> better hygiene 	<ul style="list-style-type: none"> Bazalgette – London sewer Chadwick- link sanitation and health Slum clearance Public Health act- 1848 	<ul style="list-style-type: none"> Council housing Running water, electricity Clean air act (smog) Healthy lifestyle campaigns (5 a day)

Key Qu- 1

What have been the causes of illness and disease over time?

You need to know about:

- Problems in the medieval era: poverty, famine, warfare: lack of hygiene (p5)
Black Death of the fourteenth century
Great Plague of the seventeenth century; (p6-7)
the effects of industrialisation and cholera and typhoid in the nineteenth century; (p7-8)
- the spread of bacterial and viral diseases in the twentieth century (p9)

KEYWORDS

Famine	People starve because of a lack of food grown
Bubonic Plague	A type of disease spread by the fleas of small animals such as rats.
Black Death	A disease pandemic which spread throughout Europe in the middle ages, probably not linked to the Bubonic Plague
Miasma	Mist causing illness as a result of bad air
Epidemic	Disease affecting a large number of people or a whole population
Pandemic	Disease covering a huge area or the whole world
Warfare	The tactics used in war
Poverty	The state of being very poor
Cholera	An infectious and often fatal disease caused by bad water supplies
Typhoid	An infectious bacteria which causes red spots on the chest and stomach
Spanish Flu	An infectious flu pandemic that swept through Europe after World War 1

Problems in Medieval times

Warfare

Wars were also dangerous if you were in a besieged town. If you held out too long or refused calls to surrender, once the attacking army broke in, the inhabitants were often killed or driven off with nothing. The passage of an army through your neighbourhood could lead to having your house burnt down, your animals stolen and your crops taken'.

From a textbook published in 1996.

Famine

Famine was a common cause of illness and death in Medieval Times. Famine happened because of failed harvests, caused by either drought or flood. The effects of famine were often seen the year after it first started or because of several years of drought or flood.

Punishment from God

With little understanding of scientific knowledge, people in Medieval times explained the causes of illness through religion. Illness was explained as a punishment from God for the sins of man.

Poverty

Most people depended on their land for food. Most people in the countryside lived on or near the poverty line eating bread and pottage, a kind of stew, made of beans, peas and oats. Rabbit, chicken and fish were sometimes eaten. A bad harvest would mean difficult times for many people. Child mortality was high (up to 25% of all children born) and malnutrition was common for many, even in a good year.

Lack of Hygiene

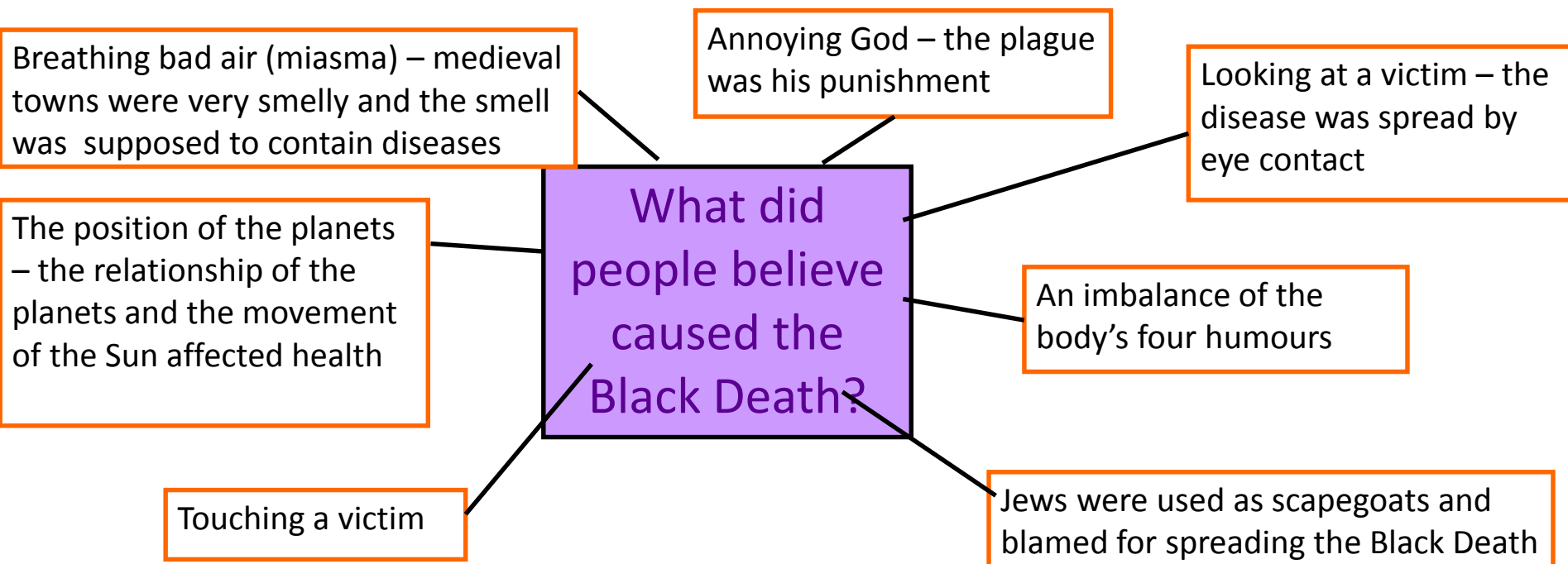
Lack of Hygiene was a particular problem in towns and cities which expanded size in the Medieval period because of changes in farming in the countryside. This created over-crowding. People in Medieval times did not make the link between lack of hygiene and disease. Therefore they often contaminated water and food sources. For example wells for drinking water were often close to cesspools for drinking sewage, people used streams they got water from as toilets and people sought remedies to disease which did not work.

The Black Death

In 1348–49 Britain faced the worst crisis in its history. A deadly disease arrived from Europe which appeared to kill people at random, and no one knew why.

This disease was the **bubonic plague**. Symptoms: fever, headache, tiredness and painful swellings (buboes) the size of an apple in the groin and armpits. Small, oozing red and black spots all over the body, giving the disease the name the Black Death. Patients lasted just a few days before a painful death.

The plague killed the rich and poor. What really frightened people, however, was the speed with which the disease swept across Europe and the number it killed. Nearly forty percent of the English died. Never before or since has there been any disaster so horrific.



The Great Plague 1665-

What caused it?

Spread by cats and dogs

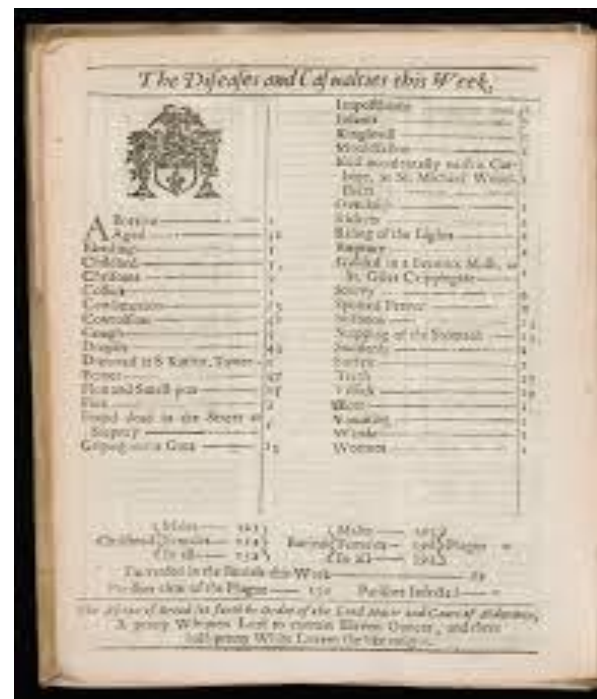
Sent by God as a punishment for being sinful

London was a busy port and a trading centre for the whole world

Details:
In 1665 approx. 100,000 people died of the Plague in London, approx. 25% of the population. Other towns and cities were affected eg Eyam. Most doctors and wealthy people fled the city fearing for their lies.

Caused by bad air 'miasma'

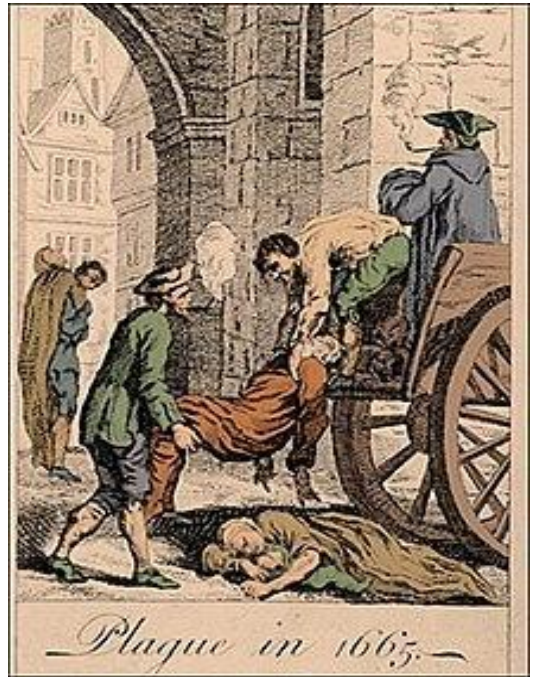
Houses were built close together and rubbish was dumped in the sewers and rivers outside



The Diseases and Casualties this Week,

A			B		
Smallpox	1		Hypochondria	1	
Scarlet Fever	2		Stomach	2	
Measles	3		Cough	3	
Whooping Cough	4		Consumption	4	
Diarrhoea	5		Colic	5	
Cholera	6		Leucorrhoea	6	
Trichinosis	7		Trachoma	7	
Ascariasis	8		Trachomatous Ophthalmia	8	
Trichinosis	9		Trachomatous Ophthalmia	9	
Trichinosis	10		Trachomatous Ophthalmia	10	
Trichinosis	11		Trachomatous Ophthalmia	11	
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Trichinosis	29		Trachomatous Ophthalmia	29	
Trichinosis	30		Trachomatous Ophthalmia	30	

Weekly Mortality Bill London 1664



Effects of industrialisation in 19th Century

The two most feared diseases of the Victorian period were **Cholera** and **Typhoid**. These diseases were spread by contaminated water:

Cholera killed very quickly and painfully.

no one knew what caused it or how to cure it

1831 - 32 50,000 deaths

1848 60,000 deaths

1854 20,000 deaths

Typhoid lasted several weeks and was often fatal.

Could also be passed through contaminated food and faeces (that's pool!)

During the 1897 Typhoid outbreak nurses treating the sick were given bravery medals, such was the view of how dangerous it was.

What were the symptoms of Cholera?

Cholera struck so quickly and killed so painfully, people in towns and cities were terrified of it. The symptoms included sudden vomiting and diarrhoea. Over 500 millilitres of fluid could be lost in hours, followed by swift, painful death.

Why did Cholera kill so many people in Victorian towns and cities?

A: Problems of poor sanitation

'They are built back-to-back without ventilation or drainage. Double rows have a water pump at one end and a privy at the other. These are used by about 20 houses.' **Evidence given to the House of Lords, 1842.**

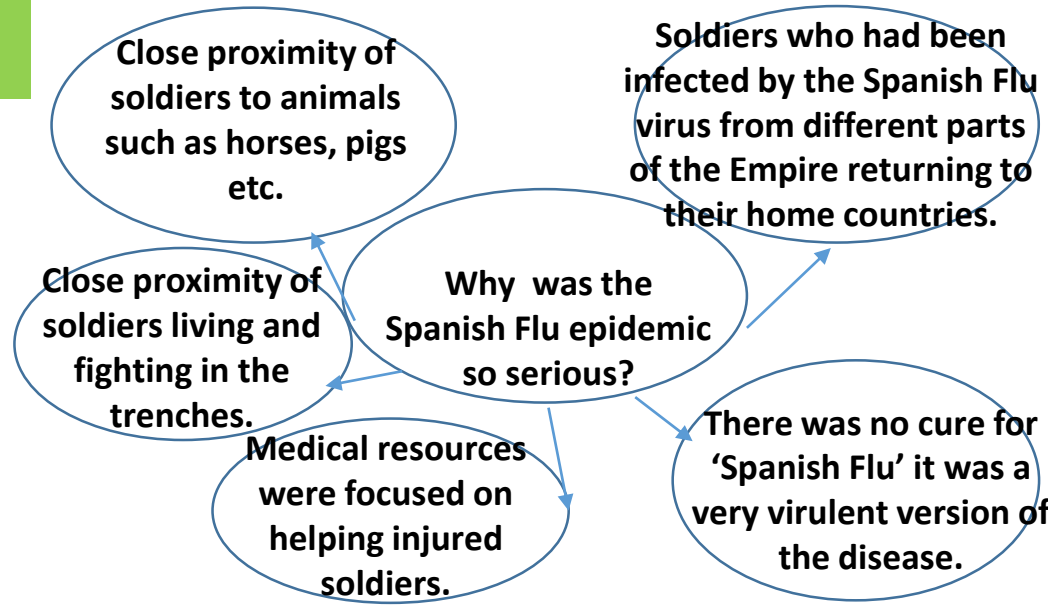
B: Problems of communal water sources

All water had to be fetched by hand from a communal pump. Clothes were washed by hand. Communal pumps were widespread in working class areas during the Victorian period



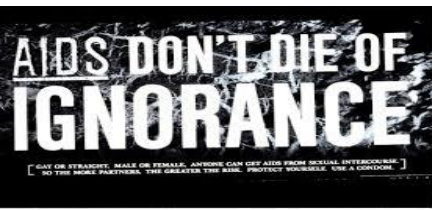
Spanish Flu –(Influenza)

- In 1918 as WW1 finished a flu pandemic spread around the world. It killed more people than died in WW1.
- Believed to originate from a strain of 'Bird Flu' from China.
- It is estimated that between 20 – 40 million people died
- Affected 20% of the world's population, particularly 20-40 year olds
- In Spain there were 7 million deaths from the 'flu' which is why it became know as 'Spanish Flu'.
- Symptoms – headaches, sore throats and loss of appetite. Those who got better did so quickly – within 3 days, it was therefore nicknamed 'Three Day fever'.
- Prime minister David Lloyd George and Walt Disney both contracted the flu but survived.
- In the UK around 280,000 people died in a few months.
- Hospitals could not cope.



What is AIDS?

- **AIDS or Acquired Immunity Deficiency Syndrome was first identified in 1981 in the USA.**
- **Doctors noticed that large numbers of homosexuals were dying from causes that could not be easily identified.**
- **By 2014, it was believed that 40 million people around the world had died from AIDS and another 40 million were living with the disease.**
- **In the UK over 100,000 were living with the disease and about 25,000 did not know they were infected.**
- **AIDs probably started among primates and monkeys in Africa and spread to the human population in the early 1900s.**
- **AIDS weakens the immune system. Anti-bodies cannot fight off disease. Therefore people do not die of AIDS, they die of common illnesses because their immune system is weakened.**
- **Among the reasons AIDS could be contracted was through unprotected sex, the sharing of needles used by people who took drugs, in less common cases from mother to child during pregnancy or by blood transfusions which were not properly monitored.**
- **The deaths of famous people such as Queen vocalist Freddie Mercury, Hollywood actor Rock Hudson and Wimbledon Singles tennis champion Arthur Ashe, raised awareness of the issue of AIDS.**
- **Celebrity fundraisers and campaigners included musician Elton John and Princess Diana, who in 1987 met and shook hands with patients suffering from AIDS at a time when people believed that any contact with people suffering from AIDS would mean they contracted the virus.**



The government funded a tv campaign to highlight the dangers of AIDS. It was not successful. It was too unclear and didn't talk about practical ways for young people to protect themselves. AIDS was linked to homophobia and a lack of understanding of the causes of the virus.



Homophobic newspaper headline 1984

Causes – medieval period

Causes – Early Modern period

For each time period make notes about what was believed to cause illness and disease.

Causes – Industrial period

Causes – modern period

Changed

Stayed the same

Revision sheet

For each make some notes about these illnesses and diseases.

Key Words
Miasma –
Pandemic –
Epidemic –
Famine –
Warfare –
Poverty –

Describe how the causes of disease have changed from c500 to present day.

Cholera

Spanish Flu
When?

Plague

Typhoid

AIDS

Key Qu- 2

How effective were methods to prevent illness and disease over time?

You need to know about:

Prevention of Black death
14th Century Alchemy, soothsayers and medieval doctors (p13 – 14)

Application of science to the prevention of disease late 18th century and early 19th centuries (p14 – 15)

Work of Edward Jenner and vaccination
Influence and spread of inoculation since 1800 (p16)

Discovery of antibodies and developments in bacteriology (p17 – 18)

KEYWORDS

Alchemy	The belief that base metals could be turned into gold
Soothsayers	People who, it was believed had the power to look into the future
Apothecaries	People who made herbal remedies
Barber surgeons	Barbers not only cut hair but performed some surgical operations, mainly because they had the right sharp equipment!
Child-bed fever	Fever due to an infection after childbirth. It was unknowingly passed on by physicians helping women give birth
smallpox	A virus that is contagious and causes fever and pustules (infected blisters)
Contagious	A disease which is spread by direct contact from one person to another
Inoculation	The introduction by injection of an antibody into the body to protect from disease.
Vaccine/ Vaccination	treatment with a vaccine to produce immunity against a disease;
Germ Theory	Germ theory states that many diseases are caused by micro-organisms within the body
Anti-bodies	Produced to protect the body against disease
MMR	Measles, Mumps and Rubella vaccine

What were early methods of preventing the Black Death in the 14th Century?

The 4 Humours



Most Medieval physicians believed in the theory of the 4 humours and used it to prevent illness. The theory of the 4 Humours was developed in Ancient Greece by Hippocrates and Galen

The Church

The Church was very influential in Medieval times.

The Church believed that physical illness was caused by spiritual illness.

People believed that people became ill because they were living in an un-Christian way or people were not praying hard enough.

The Black Death was stopped according to the Church by processions through the villages and asked for God's forgiveness. Some people whipped themselves in the streets (flagellants)



Other Methods to prevent catching the Black Death

Walk about carrying flowers, herbs and spices

Avoid eating and drinking and too much sex!

Avoid bathing

Drink vinegar and / or wine

Some attempts to prevent illness and disease worked by accident eg

King Edward II ordered the streets of London to be cleaned of all the filth.

Preventing illness in the Medieval Period 500-1500

In the Middle Ages there was a strong link between **physical health** and **spiritual health**. The **church** played a big part in people's lives. If you fell ill it was believed that the illness was caused by sin or not praying enough.

Alchemists (people searching for a way to turn base metals like lead into gold) were thought to be important in preventing illness. Many powerful people retained alchemists eg John Dee worked for Elizabeth I. Some were looking for the '**Elixir of Life**', they believed it would make someone live longer. **They pushed science forward with many accidental discoveries.**

Soothsayers were usually old women who claimed to see the future. Their methods sometimes worked by trial and error carried out over many years. They were often accused of witchcraft. **There were very few 'trained' doctors and their knowledge was limited.**

Application of science to prevention of disease late 18th century

In the 1600's many people were influenced by the Ancient Greek's and Roman beliefs in fresh air, diet and exercise as a way of preventing illness. **Walks** in the fresh air and vegetarianism became fashionable.

Cold water treatments in fashionable resorts became fashionable with the wealthy. These were called **Spas**. The most famous spa town was **Bath**.

Some scientific understanding was being used to prevent illness eg sailors were given lime or fruit to avoid scurvy and washing hands became more common. An important invention at this time was **the microscope**, which later allowed scientists to see tiny organisms like bacteria.

What is Cholera? Cholera is an infectious and often fatal contracted from infected water supplies and causing severe vomiting and diarrhoea.

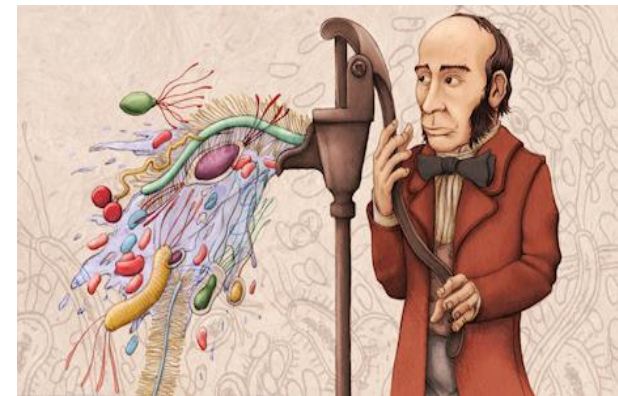
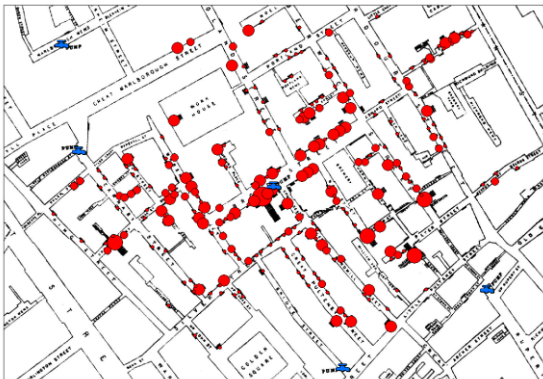
Cholera reached London in February 1832. The authorities were poorly prepared for the epidemic and doctors disagreed on what to do. This resulted in cholera riots. The 1832-33 cholera epidemic claimed 4,000 to 7,000 victims in London. In September 1853 a cholera epidemic was claiming in London and other parts of the country. It was during this epidemic that John Snow, a London doctor, succeeded in tracing the epidemic to a single water pump on Broad Street.

How was a solution to the Cholera epidemic identified?

John Snow and the Broad Street pump

John Snow interviewed people in one particularly badly hit area of London, and found that the majority of cases had got their water from a pump in Broad Street. There were some places, such as a brewery nearby, where very few cases of cholera occurred. He also found such places got their water from elsewhere or had their own water supply. He reach the conclusion that the water from the Broad Street pump was contaminated and removed the pump handle.

The cholera outbreak ended and there were no more deaths. Snow did not succeed in convincing the majority of his colleagues of the causes , which cost the lives of some 12,000 people in the city.



Preventing illness in the Industrial Period 1700 - 1900

Edward Jenner and vaccination

Edward Jenner (1749–1823) trained as a doctor in London.

Jenner wondered if he inoculated patients with cowpox whether it would give them immunity against smallpox. It would certainly be less dangerous than inoculating them with smallpox matter because cowpox was only a mild illness.

He inoculated 8-year-old James Phipps with cowpox matter taken from Sarah Nelmes, a dairymaid, on 14th May 1796. Six weeks later he gave the boy a dose of smallpox and Phipps survived. Jenner did the same experiment on 23 more people and proved that cowpox could protect humans against the far deadlier smallpox. He could not explain however, why it worked. He called the procedure '**vaccination**' after the Latin word for cow 'Vacca'

The government gave him £10,000 in 1802 and £20,000 in 1807 to open and run a vaccination clinic in London.

In 1852 smallpox vaccination became compulsory in Britain.

The Spread of Inoculation since 1800

*In the 20th Century the World Health Organisation led campaigns to eliminate diseases which caused which caused diseases and could deadly, such as **polio, measles, whooping cough and diphtheria.***

The method used was based on the work carried out by Jenner.

In 1955, a polio vaccine was introduced. 1963 = measles vaccine, 1988 = MMR (measles, Mumps and Rubella) vaccine and Hepatitis B in 1994.

Vaccinations are controversial because some parents have challenged the right of governments to make infants have vacci nations over fear s for their safety and parents rights.



Year	Infant Mortality Rate
1800	150 per 1000
1900	170 per 1000
1950	20 per 1000
2000	4 per 1000

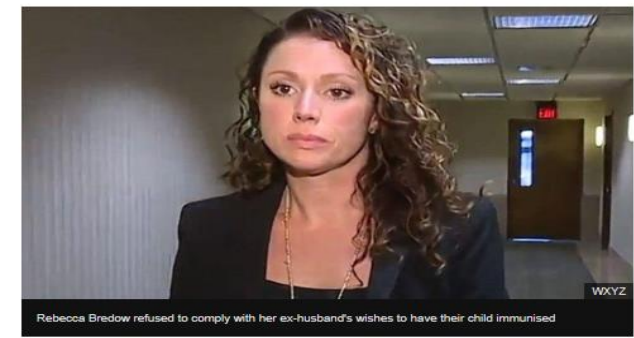
Debate:

Should the government had the right to make vaccinations against killer diseases compulsory?

The MMR debate: Who decides?

Home | UK | World | Business | Politics | Tech | Science | Health | Family & Education
US & Canada

Michigan mother jailed for refusing to vaccinate her son
5 October 2017 | US & Canada | 275



Rebecca Bredow would not let her nine-year-old be immunised after initially agreeing with the father to do so.

Her ex-husband has now been awarded temporary primary custody in order to get the boy the jab.

Michigan parents are legally allowed to skip or delay their children's vaccinations due to personal beliefs.

But Bredow fell foul of the law because she reneged on agreements with her former spouse dating back to November 2016 to have the boy immunised.

The mother-of-two was sentenced on Wednesday for contempt of court after flouting a court order last week to have her son vaccinated.

She and her ex-husband decided at the time of their child's birth that they would space out and delay jabs for their son.

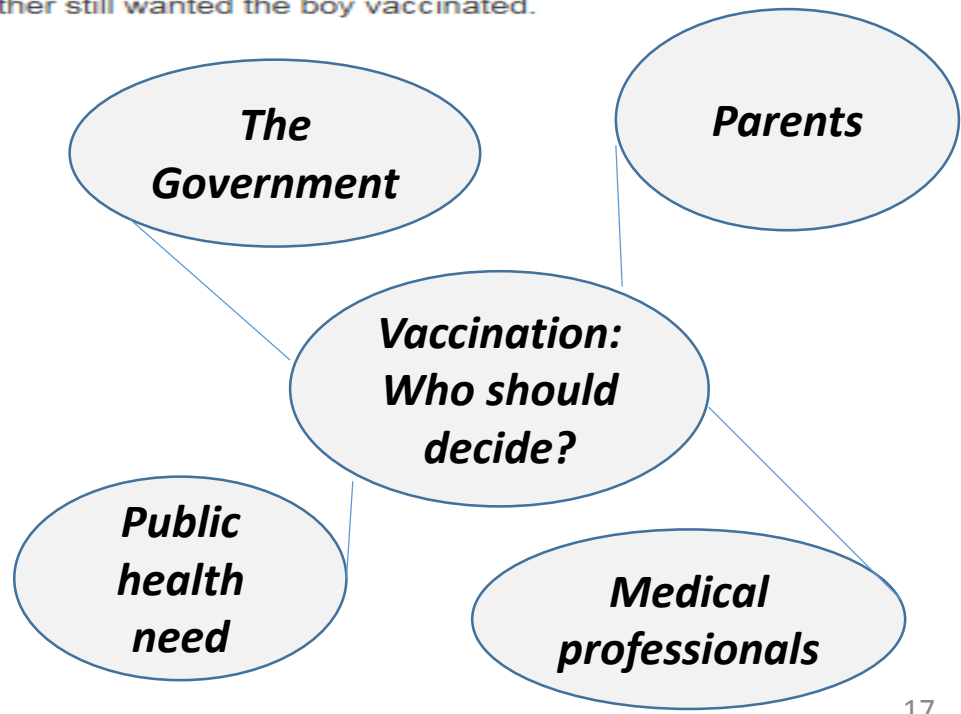
The couple separated in 2008, according to ABC News, but they shared parental custody and the father still wanted the boy vaccinated.

In 1998 Dr Wakefield suggested there was a link between the MMR vaccine (routinely given for measles, mumps and rubella) and Autism. The evidence was not fully supported by all doctors, however it became a huge news story.

Effective vaccination programmes require 95% take up rates. Supporters of Dr Wakefield's evidence pointed to the fact that medical companies made huge profits out of vaccines and that it should be the right of parents to decide.

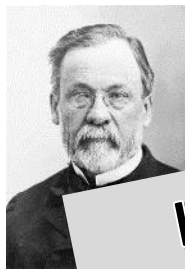
Critics of Dr Wakefield argued that it would lead to deadly diseases which had been got rid of appearing again.

Dr Wakefield's research has since been dis-credited.



Scientists and disease prevention

Discovery of antibodies and developments in field of bacteriology



Louis Pasteur

People who have saved YOUR life!



Robert Koch

- Louis Pasteur was a French Scientist.
- He discovered the presence of **good and bad bacteria** in **wine** but if you **heated** it up it **got rid of the bad bacteria**. This is now how milk is made safe to drink – it is **pasteurised** (heated up so the bad bacteria is killed)
- He further developed the idea that **bad bacteria and germs are all around us (Germ Theory)** and were the cause of many disease and illnesses
- Pasteur then went on to **develop vaccinations** to target disease – he knew that the body could learn to fight bad bacteria. A small dose of a disease encourages the bodies immune system to fight the disease.
- He was only allowed to test vaccines on animals. Developed a vaccine against **chicken cholera**
- Developed first vaccine against **Rabies in 1880**



- Robert Koch was German Scientist who took the work of Pasteur a step further. He discovered that **certain bacteria caused certain illness**
- In 1882 identified the **bacteria which caused TB**
- In 1883/4 identified the **bacteria which caused Cholera** and confirmed the findings of John Snow
- He allowed the science of **bacteriology** to develop
- He knew that antibodies work specifically on only one bacteria was significant in preventing disease
- He and his students subsequently isolated the **causes of Diphtheria, Typhoid, Pneumonia, Tetanus, plague, Whooping cough** and therefore allowing the **development of vaccinations**.
- They also developed a technique to identify types of bacteria using dyes to stain them and make them easier to detect under microscopes.
- He was awarded the Nobel Prize in 1905 for his work/discoveries.

Revision sheet

List 3 ways that people believed would prevent illness/disease in the Medieval Period.

- 1.
- 2.
- 3.

List 3 ways that people believed discovered could prevent illness/disease in the Industrialisation period in the 1800s

- 1.
- 2.
- 3.

List 3 ways that people believed discovered could prevent illness/disease in the 20th Century

- 1.
- 2.
- 3.

What has changed & continued?

Define

Inoculation –

Vaccine/Vaccination –

Germ Theory –

Contagious –

Who were..

1. Apothecaries –
2. Barber Surgeons –
3. Alchemists -

What connects John Snow and the Broad Street Pump in London?



Revision sheet.

What did Louis Pasteur discover in wine which led him to develop germ theory?

How did he get rid of bad bacteria in wine?

How is this linked to milk?

What else did Pasteur achieve?

What was Koch famous for?

What links Pasteur, Snow, Koch and Jenner?

Describe the link between Jenner and smallpox.

List 3 reasons why is Paul Ehrlich is important to the prevention of illness and disease.

- 1.
- 2.
- 3.



What other 3 key vaccinations have been introduced since WWII?

Outline the MMR debate.

Key Qu- 3

How effective were attempts to treat and cure disease over time?

You need to know about:

Treatments and remedies in medieval era
Herbal medicines, barber surgeons, use of leeches (p23-24)

James Simpson- anaesthetics (p26)

James Lister- antiseptics (p27)

20th century developments- Marie Curie and radiation, roles of Fleming, Florey and Chain regarding antibiotics (p28)

Barnard and transplant surgery (p29)

Cancer treatment (p29)


Alternative treatments(p30)

KEYWORDS

Herbal medicines	Medicines based on herbs and plants.
Bleeding	The process of taking blood from a person to balance the 4 humours
Zodiac chart	Charts based on the astrological symbols . These were used to decide on treatment
Barber surgeons	Barbers not only cut hair but performed some surgical operations, mainly because they had the right sharp equipment!
Leeches	A type of worm which is water based, and used to suck blood from the body
apothecary	a person who prepared and sold medicines and drugs in medieval times
Anaesthetic	A method of reducing pain during operations
Antiseptic	A method of reducing infection during operations
Aseptic	The method of creating a bacteria free environment for surgery
Antibiotics	a medicine such as penicillin that stops the growth of or destroys microorganisms.
Transplant surgery	The removal of organs, tissue, or blood products from a donor and placing them into a recipient body
Alternative medicine	any form of healing or treating disease (such as chiropractic, homeopathy, or faith healing) not included in traditional medicine

KEY QUESTION 3- How effective were attempts to treat and cure disease over time?

Treatments - MIDDLE AGES 500 - 1500	Treatments – Early Modern 1500 - 1700	Treatments - 1700 - 1900	Treatments - 20TH CENTURY
Herbal remedies			
Prayer			
Bleeding			
Rest, exercise and diet.			
Wearing Lucky charms.			
Amputations			Artificial limbs
Surgery		Aseptic surgery	Keyhole & Micro-surgery Plastic surgery Transplants
		'Cure- all' remedies	Chemical drugs Antibiotics
		X-rays	Radiotherapy/chemotherapy
Herbal anaesthetics and antiseptics		Chloroform Effective anaesthetics Carbolic acid – antiseptic surgery	Blood transfusions

<h2 style="text-align: center;">Different types of treatments in Medieval Times</h2>	<h3 style="text-align: center;">The Four Humours Purging</h3> <p>It was believed that the humours were created from the foods eaten, a common treatment was therefore to remove any leftover food. This was done by giving the patients an emetic (to make them vomit) or a laxative to clear out anything left in the body. These were usually strong and bitter herbs, often they contained poisons such as hellebore. Laxatives were very common and included things like mallow leaves and linseed.</p> <p>If more help was required an enema was given – a mixture of herbs and oils were squirted into a patient’s anus using a greased pipe fixed to a pig’s bladder.</p>	<h3 style="text-align: center;">Urine Chart.</h3> <p>In Medieval times the physician would compare the colour of the patients urine against a chart. How is this similar to today?</p>
<p>Zodiac Charts would tell the physician which parts of the body were linked to which parts of the astrological signs. It would indicate how was best to treat an Aries or Aquarius patient, when was the best time to treat them and when was a good time in the astrological cycle to pick and mix herbs.</p>	<p>If the cause of illness was God, then logically God could also cure the illness. People could treat illness by:</p> <ul style="list-style-type: none"> · Prayers and spells · Paying for mass to be said · Fasting (going without food) · Pilgrimages (journeys to religious places) · Charms and amulets 	<h3 style="text-align: center;">Four Humours - Bleeding</h3> <p>Phlebotomy (bloodletting) was the most common treatment, bad humours could be removed by removing some of the blood. It was usually carried out by Barber Surgeons or Wise Women. It could be done in different ways</p> <ul style="list-style-type: none"> ○ Cutting a vein: a vein was cut open with a sharp instrument. Phlebotomy charts were used to show points in the body where bleeding was recommended for specific illness ○ Leeches were collected for those where traditional bleeding was too dangerous ○ Cupping: the skin was pierced until it bled, a heated cup was then placed over the cut to draw out the blood.
<h3 style="text-align: center;">Herbal ingredients</h3> <ul style="list-style-type: none"> • honey and a mixture of plants. • Books called ‘herbals’ recorded ‘recipes’ with ingredients, quantities and prayers sometimes these were kept as family secrets. • Even better when picked at specific times 	<p>Common ingredients included mint, camomile, almonds, saffron, absinthe and turpentine. Some of these were expensive and difficult to find.</p> <div style="text-align: center;">  </div>	

Barber Surgeons

The least qualified medical professionals. They had sharp knives and a steady hand so could perform small surgeries such as extracting teeth and bleeding. They would advertise their services by putting a bowl of blood in the shop window until 1309, after that they displayed a sign of a bandaged, bloody arm. Some were highly trained, in Europe some doctors were surgically trained alongside medicine. They learned from practical experience instead of books.



Use of Leeches

It was believed in Medieval times that leeches only removed 'impure' blood from the body, leaving 'good' blood behind. The use of leeches continued well into the medieval period and as late as the 1800s. They are still used in modern alternative medicine.



<p>Different types of treatments in the Early Modern Period (1500 – 1700)</p>	<p>Folk Remedies and magic. Treatment for Malaria from The New London Dispensary: 'take the hair and nails of the patient, cut them small and either give them to birds in a roasted egg or put them in a hole in an oak tree or a plane tree. Stop up the hole with a peg of the same tree' (measures of desperate people).</p>	<p>Quinine. In the Renaissance period the bark of the cinchona tree was imported from South America because it treated fevers effectively. It became known as quinine and was used to treat malaria.</p>
<p>Herbals. As a result of the printing press during the Renaissance period people could have a copy of Nicholas Culpepper's Complete Herbal which recommended simple herbal treatments.</p>	<p>The touch of the king. People believed that the king was God's representative on earth, therefore if they were to receive a 'touch from the king' they would be cured. Between 1660 and 1692 92,000 people visited the court of King Charles II seeking healing.</p>	<p>Blood Transfusions. In 1665 Richard Lower made his first experimental blood transfusion by transfusing blood from a dog to a dog; later from sheep to a man.</p>

Anaesthetics



Antiseptics



The 'BIG' Four
Key changes in
Treatments
Since 1800s

Aseptics



Antibiotics



Nitrous Oxide (Laughing Gas)
1799 Sir Humphrey Davy was the first to use this in . He tried it on his friends getting them to inhale the gas from oiled silk bags. It was used during operations but it was difficult to control the dose and some surgeons had higher death rates when using anaesthetics.

Ether was used as an anaesthetic. In 1846 Robert Liston used Ether as an anaesthetic when he amputated a leg. (interestingly, he amputated a man's leg in 2.5 minutes but accidentally cut off his testicles as well) Ether was being used by dentists in America. The problem was that it wasn't fully effective and patients sometimes woke up during the operation. It also caused severe irritation to the eyes and lungs.

Anaesthetics



Anaesthetic – Chloroform was first used in 1847 by **James Simpson** to reduce pain in childbirth. It has to be inhaled carefully as it causes dizziness, sleepiness and unconsciousness. There was widespread opposition to using chloroform until Queen Victoria used it in 1853 whilst giving birth. In 1870s some surgeons stopped using chloroform due to increasing death rates. In 1848, John Snow devised an inhaler which helped control the dosage of chloroform.

Anaesthetic – Cocaine was used as a painkiller first in the 1850s when coca leaves were brought from South America. Initially, given as drops in the eye; later (1891) it was produced chemically after which use of cocaine as pain relief in operations became common practice.



Anaesthetics. 1930s Helmut Wesse developed anaesthetics that could be injected into the bloodstream. This allows an accurate dose to be given. Anaesthetics have continued to be refined.

There is now much precision with general and local anaesthetics. It also now means major operations such as hip replacements can be done under local anaesthetic.

Antiseptic – Calcium Chloride solution

In 1847 Ignaz Semmelweiss made everyone working on his maternity ward in Vienna wash their hands thoroughly in chlorinated water.

Antiseptics

Joseph Lister and Antiseptics

Lister experimented by spraying wounds with **carbolic** spray before applying clean bandaging. He found his patients healed without developing gangrene (an infection which causes flesh to rot).

Lister was helped by **Pasteur and Koch** and their experiments with Germ Theory. In 1878, Koch identified the bacteria which caused septicaemia (blood poisoning). Within a few years Lister's antiseptic procedures were finally in place in most operating theatres.

These included:

- Thorough cleaning of hospitals and theatres
- steam-sterilization of all instruments
- use of sterilized rubber gloves.

This led to creating a sterile operating environment – known as Aseptic Surgery



Aseptic sterile operating environment. In 1881 Charles Chamberland invented a steam steriliser for medical instruments, which heated them to 140c for 20 mins and therefore completely sterilised them. From the 1890s operating theatres were rigorously cleaned and this continues to be a key focus to reduce risks of infection and death. This made surgery much safer.

Aseptics

Protective clothing

American William Halsted started his team wearing surgical gloves and his idea was taken up by Berkeley Moynihan in Britain. Most surgeons did not take up these methods at first, but it is now standard practice.





Florey and Chain

Florey and Chain, two scientists from Oxford University, experimented on **penicillin**. They found a method to make and test penicillin. They tried it on the first human in February 1941. Although the patient's health did improve, there was not enough penicillin to cure him and he eventually died.

However, although the patient died, the trial showed how powerful penicillin could be if it could be grown in huge amounts. In December 1941, America joined the war and the American government gave \$80 million to find a way to mass produce penicillin.

In 1943, scientists used penicillin to treat wounded British soldiers for the first time. By June 1944, there was enough penicillin to treat all the casualties from D-Day.

Alexander Fleming Antibiotics



The discovery of penicillin is a good example of a chance finding helping science.

Alexander Fleming was searching for a cure for infections.

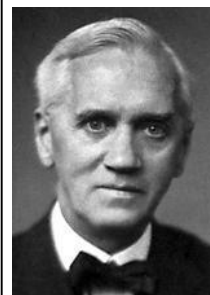
In 1928 he went to clean up some culture dishes which had bacteria growing in them.

He noticed that not one the infectious bacteria grew near the penicillin.

He had found the first antibiotic.

Fleming was unable to take his work

Further as he did not have enough money or government support.



Sir Alexander Fleming



Ernst Boris Chain



Sir Howard Walter Florey

Antibiotics. After 1948 the government funded NHS provided antibiotics free. By the 1950s and 60s Penicillin was commonly used to treat infections such as bronchitis, syphilis, meningitis, pneumonia etc.

Florey and Chain received the **Nobel Prize for Medicine** in 1945. Other antibiotics developed included **tetracycline** in 1945 and **mitomycin** in 1956

How was penicillin developed?



War - the need to fight infection.



Chance - that penicillin came in through the window.



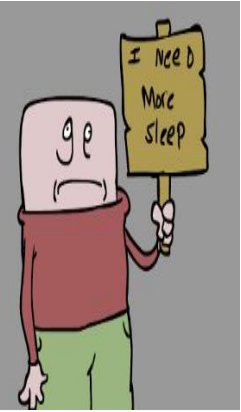

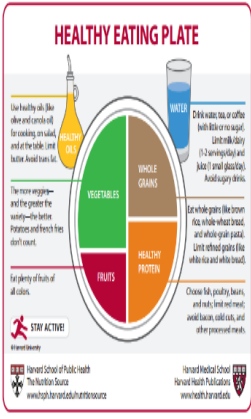
Individual Genius - Fleming, Florey and Chain were awarded the Nobel Prize in 1945.



Government - Gave money to fund research.

<p>Different types of treatments in the 20th Century</p>	<p>Magic Bullets. In the 1930s Sulphonamide was the chemical in both Salvarsan 606 and Prontosil. It was an important scientific development and subsequently mass produced to treat patients suffering from pneumonia and scarlet fever.</p>	<p>Dialysis machines. Crucial modern treatment for kidney patients – these machines keep patients alive by dialysing their blood until a kidney becomes available for transplant.</p>
<p>Blood Transfusions. 1901 Karl Landsteiner discovered blood groups which meant transfusions could happen with patients who had the same blood group. Storing blood was still an issue until it was discovered that if sodium citrate was added to blood to prevent clotting during WWI and further developments by British surgeon Geoffrey Keynes led to first blood depot created before battle of Cambrai in France in 1917.</p>	<p>Radiation Therapy. Following on from the work done by Marie Curie, radiation therapy has been used throughout the 20th century to treat cancerous cells. As technology has developed it has become more refined and easier to target the diseased cells. This led to development of Chemotherapy</p>	<p>Transplants. 1954 – kidney transplant. 1963 liver transplant. 1967 the first heart transplant was carried out in South Africa by Dr Christiaan Barnard. 1980 first bone marrow transplant. 1982 first heart and lung transplant. All a result of technical and scientific expertise.</p>
<p>Keyhole and micro-surgery. Modern treatments allowing surgeons to cut into the body through a small hole and use tools inside an endoscope which is controlled by the surgeon using miniature cameras, fibre optic cables and computers.</p>	<p>Scans. After 1945 the use of sound to see inside the body was developed – Ultrasound. Since 1970s this was used in baby scans. MRI scanning has been used in treatments since 1980s. PET and CT scanning are further developed methods.</p>	<p>Gene therapy. Modern treatment for diseases caused by a single abnormal gene such as cystic fibrosis and Huntington's disease – Gene therapy takes normal genes from a donor and puts them into the DNA of someone suffering from these types of illnesses</p>

Rest, exercise and diet






Alternative treatments in the 19th Century




Patent Medicines. This was a lucrative business. James Morison (1770 – 1840) claimed that the pills he made cured everything for tuberculosis, smallpox to the effects of old age. In reality the pills had no ingredients to cure anything but by 1834 he was selling 1 million boxes of pills each year


Wearing lucky charms
 People have worn lucky charms to help them try to treat illness/ disease across all time periods


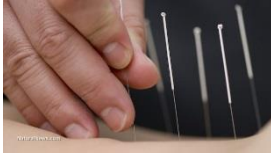


- **Homeopathy** – A system of treating people using alternative methods – especially using natural substances rather than chemical ones.

Alternative treatments in the 20th Century

Prayer.
 Many people across all the time periods have turned to prayer at times of illness or disease.



- **Acupuncture** - A traditional Chinese method of sticking needles into various parts of the body to tap into the natural flows of energy around the body.
- 
- 

Home remedies.
 Ordinary folk in the 1800s still relied on treatments that were similar to medieval remedies. For example – to treat flu mix ginger with a cup of tea. To treat smallpox apply cool boiled turnips to the feet or make a drink of ground ivy.

Revision sheet

Key Words

Antiseptics –

Anaesthetics –

Aseptics –

Antibiotics -



Medieval Treatments

What was a 'Zodiac Chart'?

In Medieval times cuts and wounds were treated with which two items?

List four ways people treated illness in this period.

-
-
-
-

Who would have used a diagram called 'The wound man' and why?

Who performed surgical operations on people and what were operating conditions like at this time?

What types of anaesthetic were used in Medieval times?

Renaissance Treatments

What was Quinine used for?

List four ways people treated illness in this period.

-
-
-
-

Who operated on people and what were operating conditions like at this time?

What types of anaesthetic were used in this period?

Revision sheet

19th Century Industrial Period Treatments

What was scientist Wilhelm Röntgen famous for?

What were 'patent cure -alls'?

Ether was used as an anaesthetic by Robert Liston in 1846 but what was the problem with it?

What did **James Simpson** use as an effective anaesthetic?

Describe what **Joseph Lister** did which was quiet revolutionary in this period.

What was produced chemically after 1891 and used as an anaesthetic?(clue its origins are found in coco leaves)

20th Century –Treatments

Who, in 1901, made the discovery about blood groups which made blood transfusions possible?

What did Marie and Pierre Curies discover? What did this lead to?

Who discovered Penicillin?

Who was responsible for developing the manufacture of penicillin?

When penicillin provided as free treatment by the NHS?

20th Century –Treatments continued...

What does the phrase 'magic bullets' mean?

Explain the significance of Magic Bullets.

Who performed the first heart transplant and when?.

List the different types of scanning techniques and their uses

-
-
-
-

What is gene therapy?

How is modern day surgery different from 1500?

Describe 'alternative' treatments

Key Qu- 4

How much progress has been made in medical knowledge over time?

You need to know about:

Influence of alchemy, astrology and theory of four humours (p34-35)

Influence of Vesalius, Pare and Harvey in 16th and 17th centuries (p36)

19th century advances in medical knowledge (p37)

Improved knowledge of germ theory

Pasteur and Koch (p38-39)

Development of scanning techniques

X-rays, ultrasound and MRI scans (p40)

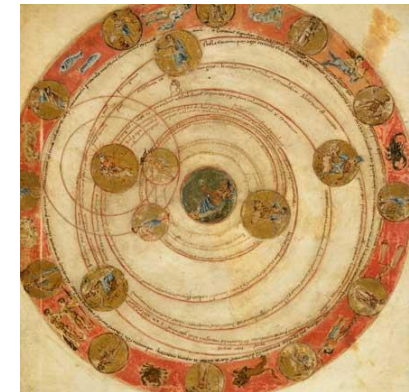
Discovery of DNA and genetic research in

20th century (p41)

KEYWORDS

4 humours	a system of medicine adopted by Ancient Greek and Roman physicians and philosophers, stating that too much or too little of any of four bodily fluids in a person—known as humours—directly influences their health
Indulgences	A payment to the catholic church for the forgiveness of sins
Cauterisation	a medical technique of burning a part of a body to remove or close off a part of it.
Ligatures	used for tying or binding part of the body tightly to cut off the blood supply during surgery
X-Rays	A photographic image of the body used to detect broken bones, disease and illness.
'Magic Bullets'	A type of anti-biotic which targets a specific disease
Ultrasound	A type of medical imaging which uses sound waves to penetrate the body
Scanners	a machine that examines the body through the use of radiation, ultrasound, or magnetic resonance imaging, as an aid to identifying diseases..
DNA	the genetic material in all life forms which creates the distinctive characteristics or qualities of someone or something.
PET / CT Scans	Positron emission tomography (PET) scans are used to produce detailed three-dimensional images of the body A computerized tomography scan (CT or CAT scan) uses computers and rotating X-ray machines to create cross-sectional images of the body

The influence of Alchemy and Astrology



Medieval Alchemy Chart

Medieval Astrology Chart

Alchemists
(people searching for a way to turn base metals like lead into gold) were thought to be important in preventing illness.
Many powerful people retained alchemists eg John Dee worked for Elizabeth I. Some were looking for the **'Elixir of Life'**, they believed it would make someone live longer.
They pushed science forward with many accidental discoveries.

Astrologists
(people who used the position of the stars as an influence on people) were thought to be important in determining the personality of people and their health. By the 1500s, physicians in many countries in Europe were required by law to calculate the position of the moon before carrying out operations or surgery. Each part of the body was connected to an astrological sign. Medicines only worked if collected during the right astrological cycle.

Church encouraged people to pray for deliverance from illness.

People could pay for indulgences or go on a pilgrimage in the hope it would bring about a cure.

What was the influence of the Medieval Church ?

The view the church took against dissecting human bodies limited the advance in understanding of dissection.

The church set up university schools of medicine where physicians were trained using hand copied texts based on the writings of Galen and Hippocrates.

Diseases of the 4 Humours



Blood

Diseases of the blood would include: Heart disease, angina, nosebleeds, anaemia, diabetes, skin disorders and acne.

Black Bile

Diseases of the black bile would include: Constipation, shaking and tics, stomach ulcers, will not eat.

Yellow Bile

Diseases of the yellow bile would include: jaundice, gall stones, migraines, joint pain and swellings (arthritis)

Phlegm

Diseases of the Phlegm would include: coughs, colds and asthma, bronchitis and diseases of the lungs.

The theory of the four humours

The Greeks found it easy to justify the theory. It was obvious to them, by observing patients' symptoms and the seasons, that at certain times of the year the dominant elements caused the humours to be out of balance.

Their theory stated that these humours had to be in balance for the body to be well, that is there had to be the correct amount of each fluid. If there was too much or too little of one or more of the humours the person would become ill and they would say their humours were out of balance.

For example, in winter, when it was cold and wet, people suffered colds. Their symptoms were running noses and eyes and sneezing. This, doctors claimed, showed clearly that there was too much phlegm in the body. To restore the balance the body was getting rid of the excess humour.

Similarly, a nosebleed meant the body had too much blood, and vomiting indicated an excess of bile.

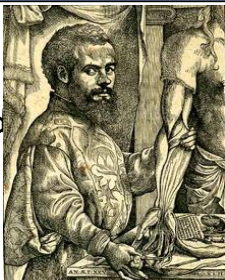
It was a simple, natural theory with the body correcting the balance of its humours naturally.

The Early Modern Period – breakthroughs!

Vesalius and Anatomy

Why were Vesalius, Pare and Harvey important in medicine? What impact did their discoveries have?

Vesalius was born in 1514 and studied medicine in Paris and Italy. He was allowed to perform dissections but couldn't look closely at the skeleton. He was so dedicated he stole the body of criminals



He became professor of surgery at Padua in Italy where he performed more dissections. He wrote books on his observations including *The Fabric of the Human Body* in 1543.

His illustrations were carefully labelled and he used his powers of observation to point out some of Galen's mistakes.

Galen thought that blood passed through the septum of the heart through little holes. Vesalius proved there were no holes in the Septum.

Galen believed that human jaw bones were made of two pieces. Vesalius proved it was one. It proved Galen could be wrong!

Pare and Surgery

Pare was a barber surgeon born in 1510. He became an army surgeon. At the time the wound left by amputation was sealed by burning the end with a red hot iron, known as cauterisation. This was very painful.



Pare invented the method of tying off vessels with thread, known as ligatures. This was less painful, but may have caused infection as they did not yet know about germs.

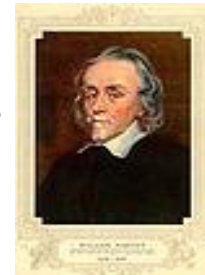
Gunshot wounds were, at the time, treated by pouring boiling oil into the wound. During one battle, Pare ran out of oil and resorted to an ointment of his own.

To his surprise, these patients recovered better than the ones scalded with oil.

Other doctors opposed to his ideas. However, when he became surgeon to the King of France and gained the King's support, people started listening to his ideas.

Harvey and blood circulation

William Harvey's most famous work, **On the Motion of the Heart**, was published in 1628. More than any other work at the time challenged the work of Galen.



Whilst studying, Harvey had been taught that the veins in the human body had valves, and blood pumped just one way, but no one knew how or why. Later in his life, Harvey experimented on frogs and lizards.

His most famous experiment, showed convincingly that the heart worked as a pump, and that blood flowed in a one way system around the human body.

He was also able to show the Galen's theory that the liver was the centre of the human body, and created new blood was wrong.

Harvey also challenged the idea of 'Bleeding' as a cure, as he showed it was impossible to have too much blood! Those who supported Galen completely rejected Harvey's work.³⁶

In Summary: How much had changed in medical discoveries between Medieval and Early Modern period?

Changed

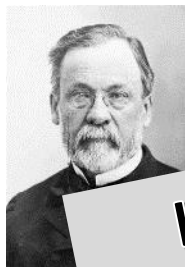
1. The discoveries made by Harvey and Vesalius were important as they proved to doctors that Galen was wrong and that careful dissection and experimentation were the way to new ideas about how the body worked.
2. Pare's use of bandaging wounds and using ointment instead of boiling oil helped patients survive as other surgeons could see it working. However his use of ligatures slowed down surgery, causing problems with bleeding, and also helped spread infection as these were not sterilised.
3. In 1492, America was discovered. This brought a wide range of new knowledge to Europe including many new herbal treatments. Trade and communication helped here.

Stayed the same

- The discoveries of Harvey and Vesalius did not make anyone healthier at the time.
- Life expectancy did not increase much.
- They hadn't discovered new and better ways of treating illnesses.
- Treatments: Herbal remedies were still widely used.
- Surgery only improved a little.
- Treatments from the Four Humours were still widely used; this had not yet been disproved.
- Superstitious treatments were still widely used, including charms and the famous 'King's Evil', this included the king touching someone with the skin-disease, Scrofula, in order to cure them.
- Trained doctors and surgeons could still treat those who could pay. The poor had to rely on family, wise women and travelling quacks.

Scientists and disease prevention

Discovery of antibodies and developments in field of bacteriology



Louis Pasteur

People who have saved YOUR life!



Robert Koch

- Louis Pasteur was a French Scientist.
- He discovered the presence of **good and bad bacteria** in **wine** but if you **heated** it up it **got rid of the bad bacteria**. This is now how milk is made safe to drink – it is pasteurised (heated up so the bad bacteria is killed)
- He further developed the idea that **bad bacteria and germs are all around us (Germ Theory)** and were the cause of many disease and illnesses
- Pasteur then went on to **develop vaccinations** to target disease – he knew that the body could learn to fight bad bacteria. A small dose of a disease encourages the bodies immune system to fight the disease.
- He was only allowed to test vaccines on animals. Developed a vaccine against **chicken cholera**
- Developed first vaccine against **Rabies in 1880**



- Robert Koch was German Scientist who took the work of Pasteur a step further. He discovered that **certain bacteria caused certain illness**
- In 1882 identified the bacteria which caused TB
- In 1883/4 identified the bacteria which caused **Cholera** and confirmed the findings of John Snow
- He allowed the science of **bacteriology** to develop
- He knew that antibodies work specifically on only one bacteria was significant in preventing disease
- He and his students subsequently isolated the causes of Diphtheria, Typhoid, Pneumonia, Tetanus, plague, Whooping cough and therefore allowing the **development of vaccinations**.
- They also developed a technique to identify types of bacteria using dyes to stain them and make them easier to detect under microscopes.
- He was awarded the Nobel Prize in 1905 for his work/discoveries.

Ehrlich and 'Magic Bullets' – chemically produced drugs



A 'magic bullet' was a **chemical cure** that would attack the microbes in the body leaving the rest of the body unharmed. It was designed to target **specific diseases**.

Paul Ehrlich (Germany: 1890s) reasoned that, if certain dyes could stain bacteria, perhaps certain chemicals could kill them. He set up a private laboratory and a team of scientists. By 1914 they had discovered several '**magic bullets**' - compounds that would have a specific attraction to disease-causing microorganisms in the body, and that would target and kill them. The most significant was **Salvarsan 606**(for syphilis)

In 1932 scientist **Gerard Domagk** discovered a bright red dye called **Prontosil**, killed bacterial infections.

One day his daughter chased her guinea pig into his lab and in doing so cut herself, developing blood poisoning. Domagk was forced to try the untested drug on his daughter - it worked!



It was used to cut maternity deaths at a hospital in London and reduced them from 20% to less than 5%. It was discovered the Prontosil prevented the bacteria from multiplying and made it possible for the body's own immune system to kill the bacteria.

The discovery of penicillin is a good example of a chance finding helping science.

Alexander Fleming was searching for a cure for infections.

In 1928 he went to clean up some culture dishes which had bacteria growing in them.

He noticed that not one the infectious bacteria grew near the penicillin.

He had found the first antibiotic.

Fleming was unable to take his work

Further as he did not have enough money or government support.

Florey and Chain, two scientists from Oxford University, experimented on **penicillin**. They found a method to make and test penicillin They tried it on the first human in February 1941. Although the patient's health did improve, there was not enough penicillin to cure him and he eventually died.

However, although the patient died, the trial showed how powerful penicillin could be if it could be grown in huge amounts. In December 1941, America joined the war and the American government gave \$80 million to find a way to mass produce penicillin.

In 1943, scientists used penicillin to treat wounded British soldiers for the first time. By June 1944, there was enough penicillin to treat all the casualties from D-Day.

Wilhelm Röntgen - X Rays



1895 German Scientist Wilhelm Röntgen discovered **X-rays, a form of radiation which could pass through solid objects. His discovery transformed medicine and x-rays have been used routinely ever since in the treatment of many diseases and illnesses.**



1895 first x-ray



Marie Curie and Radiation

- **Marie Curie** and her husband Pierre were the first to discover and isolate **Radium** and **Polonium**.
- Radioactive elements play a key role in destroying tissue - this **breakthrough** has led to the **treatment** of some types of **Cancer**.
- She was pioneer in **Radiography** - continuing the work of Rontgen
- By October 1914 she had developed 20 **portable X-Ray machine** to be used at the front line of fighting in **WWI**.
- By 1916 most casualty hospitals on the Western Front had X-Ray equipment.
- Standard equipment in hospitals in 20th Century. Used to investigate problems especially with bones and teeth.
- Marie Curie was awarded two Nobel Prizes in 1903 and 1911
- She died in 1934 of Leukaemia - a result of too much exposure to radiation.



Scanning

In the 20th Century, **scanning** addressed the major problem of identifying disease early. Scanning allowed doctors to look inside the body.

X-Rays used radiation to photograph bones to identify fractures.

Ultrasound used sound waves to look inside the human body. It avoided the use of radiation and could create a 3D image of organs like the heart, liver and muscles. Ultrasound is used to scan unborn babies.

MRI uses radio waves to create a high quality, 3D picture of the human body.

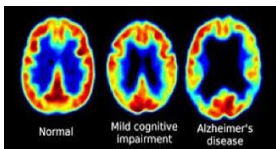
PET and CT scans. PET works by injecting into the body so that it colours parts of the body doctors want to look at. CT takes many X-Rays at different angles to build up a detailed view of part of the body.



Ultrasound



MRI Scan



PET Scan



CT Scan

Crick, Watson and Franklin and DNA

Genetics

By 1900 it was clear not all diseases were caused by microbes.

There began to be an improved understanding of hereditary diseases but it was not until 1953 that technology made it possible to understand DNA. The structure of DNA was discovered by

Crick, Watson and Franklin. DNA carries genetic information about all living things from one generation to the next. DNA explains how people and other life forms reproduce themselves.

In humans, DNA was present in every human cell, and that they pass information on from parents to children.

This was the launch pad for several controversial genetic developments.



Cloning

In 1996 DNA technology allowed for the cloning of cells (creating an exact replica of a person or animal by copying cells). The first cloned animal was Dolly the sheep.

Getting rid of genetic diseases

DNA technology allows to eradicate some genetic diseases (diseases passed down through families over several generations eg some cancers, hereditary blindness).

'Designer' babies If not controlled some scientists have warned of the danger of parents being able through changing DNA to 'design' preferred features or gender in children, eg blue eyes, boy rather than girl etc. They highlight the danger of some DNA characteristics being seen as having less value than others.

Three parent babies Mitochondrial donation is an IVF technique that gives families affected by mitochondrial disease the chance of having healthy children.


It involves taking the DNA out of a woman's egg that has faulty mitochondria (the 'batteries' that give all our cells their energy), and transferring it to a donor egg with healthy mitochondria.

Human Genome Project

Mapping the **Genome** was now possible – mapping the DNAs code, the help scientists understand the causes of genetic diseases. In 1990 the **Human Genome Project** was launched with the aim to decode and map the human genome. Even though hundreds of scientists were involved, it took until 2003 for this task to be finished.

Once it was mapped then scientists could start looking for mistakes in the DNA of people suffering from hereditary diseases e.g. a gene that is sometimes present in breast cancer. Angelina Jolie has this gene and underwent a double **mastectomy** as she has an over 80% chance of developing the disease. Her risk is now less than 5%.

KEY QUESTION 4 - How much progress has been made in medical knowledge over time?

Name	Period	What was their Breakthrough in medical knowledge?	To what extent was it a breakthrough 1 - 5
Hippocrates 		'Father of Modern Medicine'...Hippocratic Oath	
Galen			
Alchemy & Astrology	Medieval & Early Modern		
The Church	Medieval & Early Modern		
Andreas Vesalius	Early Modern		
Amboise Paré	Early Modern		
William Harvey	Early Modern		

KEY QUESTION 4 - How much progress has been made in medical knowledge over time?			
Name	Period	What was their Breakthrough in medical knowledge?	To what extent was it a breakthrough 1 - 5
Louis Pasteur	Nineteenth Century (Industrial period)		
Robert Koch	Nineteenth Century (Industrial period)		
Paul Ehrlich	Nineteenth Century (Industrial period)		
X-Rays	20 th Century		
Ultrasound & MRI	20 th Century		
Scanning	20 th Century		
DNA	20 th Century		

Key Qu- 5

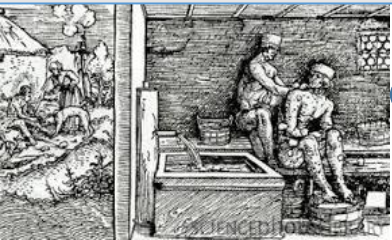
How has the care of patients changed over time?

You need to know about:

- Role of church and monasteries in Medieval times (p45)
- Roles of voluntary charities (p46)
- Science and endowed hospitals (p46-48)
- Florence Nightingale and the professionalisation of nursing (p49-50)
- Impact of 20th century liberal reforms (p51-53)
- Beveridge report 1944 and setting up of the NHS (p54)
- Provision of NHS after 1948 (p55)

KEYWORDS

Almshouses	Houses for the poor provided by charities and churches in the medieval period
Dispensaries	An early form of chemists which dispensed medicines and herbal extracts
Leper hospitals	Hospitals set up to treat people suffering from the very contagious, disfiguring disease called Leprosy
Royal / Endowed hospitals	Hospitals set up on land given or endowed by a monarch or rich patron
Cottage hospitals	Hospitals set up in mainly rural areas with a small number of beds and limited funds
Self Help	The idea that individuals or families should take care of themselves and not rely on the state to provide financial support.
Welfare State	The idea that people are not the cause of their own poverty and it is the responsibility of the state, through the government to provide systems of support and care.
National Insurance	payments to help people who are sick, unemployed, or retired. The cost of the payments is shared between workers and companies.
Beveridge Report	a report about social conditions in Britain produced in 1942 by a committee led by the economist William Beveridge. It led to the setting up of the welfare state after World War 2.
National Health Service	A national healthcare system paid for mainly by taxes. It provides free or low-cost healthcare to all British citizens.



What types of Hospital existed in Medieval Times?



Leper Hospitals

The earliest known example is thought to be St Mary Magdalen in Winchester, between 960 and 1030 AD. At least 320 religious houses and hospitals for the care of lepers (known as leper or 'lazar' houses) were set up in England between the end of the 11th century and 1350. The houses were usually built on the edge of towns and cities.

To survive Lepers needed to beg, trade items, and offer services such as praying in return for money. There was high demand for places in leper hospitals.

The emphasis was on cleanliness and wholesome food - clothes were washed twice a week and a varied diet was supplied if possible, often from the house's own fields and livestock. Many leper houses had their own fragrant gardens of flowers and healing herbs, and residents took part in their upkeep. Many lepers stayed in touch with their family and friends and were allowed to make visits home and receive visitors.

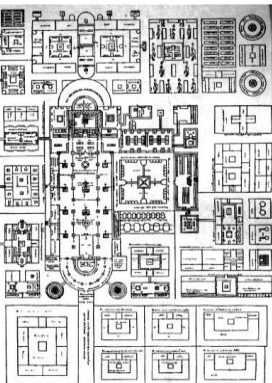
Almshouses were built to provide long-term shelter for the disabled and elderly who could not look after themselves or had no family to look after them.

They were founded and supported with donations from kings, the church, nobles and merchants, all keen to get to heaven by doing good works.

Some trade guilds built almshouses for their members who could no longer manage life in their own homes.

Rules were strict, and prayer was expected, but the almshouses, food and surroundings were generally good, they often with gardens. There were gifts and feasts on special days. Places were in demand as the almshouse offered an escape from the poverty and danger of life outside.

Monastery Hospitals



ST JOHN'S HOSPITAL IN CANTERBURY, KENT WAS THE FIRST HOSPITAL TO TAKE ON THE LONG-TERM CARE OF PEOPLE WHO WERE TOO ILL OR DISABLED TO FUNCTION IN MAINSTREAM SOCIETY, IT GAVE 24-HOUR CARE TO MEN AND WOMEN 'OPPRESSED BY VARIOUS KINDS OF INFIRMITIES'. THE BASIC LAYOUT OF LARGER, PURPOSE-BUILT MONASTERY HOSPITALS INCLUDED A LARGE 'INFIRMARY HALL' WITH ROWS OF BEDS ON EACH SIDE HOUSED THE SICK AND THE INFIRM. THE CHAPEL WAS IN FULL VIEW - THE CARE OF THE SOUL WAS JUST AS IMPORTANT AS THE CARE OF THE BODY. MEN AND WOMEN WERE KEPT SEPARATE.

In medieval religious houses, the passing poor were only expected to stay for one night. Gradually however, the rules changed and the sick were allowed to stay until they recovered, creating an early version of the hospital as we understand it today.



Christian Hospitals

What impact did the closure of the monasteries by Henry VIII have on patient care?

In 1536, in an attempt to control the threat of the Catholic Church and gain a much need source of new income, Henry VIII closed down monasteries throughout England and Wales and took the profits from the land previously rented out by the church.

This had a **huge impact on patient care** because monasteries had been one of the main providers of patient care in the Medieval period. The effects included:

1. Many monastery hospitals were closed.
2. The role of the church in patient care was taken over by **voluntary charities and guilds**.
3. **Almshouses** were taken over by **town councils** in most towns

In London, the authorities asked for royal assistance in providing funds for hospitals helping different types of patients These were called '**Royal (endowed) Hospitals**'

These '**Royal Hospitals**' are important because this was the first time that hospitals were created and supported which were secular, in other words, not linked to the church. They represented the first stage of hospitals Some of London's most famous modern hospitals were founded at this time. These endowed hospitals could also be found outside London eg Norwich

By the 1700s, a second stage of '**Endowed Hospitals**' were set up by wealthy private individuals eg factory owners, merchants etc.

In the 1800s a third stage of '**general, cottage and specialist hospitals**' were created usually through endowment or by funding from local councils. This reflected the needs of an increasing population and the increasing importance of local government.

Stage 1: What were Royal hospitals?

With the closing of the monasteries, the **monarchy** became the main provider of patient care in London. This was done by providing funds through '**Endowment**'

An '**endowed**' hospital was one which was provided with funds mainly by giving land to the hospital. The money from renting this land to other uses raised money for the hospital. This gave the hospital a steady income and some degree of independence, which led them '**specialise**'.



Royal Hospital	When Founded	Monarch / Founder	Patients
St Bartholomew's (Bart's)	1546	Henry VIII / Corporation of London	Poor of West Smithfield London
St Mary Bethlehem (Bethlem)	1546	Henry VIII / Sir John Gresham Lord Mayor	Mentally Insane
St Thomas'	1551	Edward VI / City of London	Sick poor and those with Syphilis
Christ's	1553	Edward VI / Bishop of London	Fatherless children
Bridewell Hospital (and prison)	1553	Edward VI	Homeless children /disorderly poor

Stage 2: What were voluntary endowed hospitals?

Voluntary endowed hospitals were set up by **wealthy businessmen, merchants** or **councils** NOT Monarchs
This new wave of hospitals appeared about 200 years after the 'Royal' hospitals
11 new London hospitals were founded and 46 others around the country
These endowed hospitals also changed the function of hospitals in patient care.



How did the role and function of endowed hospitals change in the 18th Century?

The old function of hospitals was to provide basic care and comfort for the sick. For the first time hospitals

- became places where illness was treated
- simple surgery was carried out eg setting broken bones
- Physicians treated people with support of nursing sisters and nursing helpers
- Nursing sisters treated patients with herbal remedies
- Treatment was usually free
- Hospitals became pharmacies issued medicines – these were called **Dispensaries**



Stage 3: General, cottage and specialist hospitals

In 1800 there were about 3,000 patients in hospitals in different parts of the country. By 1851, this figure had increased to 7,619. (the overall population of Britain in 1825 was 20 million people)

General Hospitals appeared in towns around the country where there had been little or no hospital provision before eg **Truro Royal Infirmary** was set up in 1799

Cottage Hospitals began in the 1860s in an attempt to widen access to hospitals to rural areas, they were often set up by general practitioners or GPs. Eg **Epsom Cottage Hospital** was founded in 1873 with 8 beds

Specialist Hospitals were hospitals which specialised in a particular area of patient care eg **maternity care**, treatment of children, eyes/nose and throat

Specialist Hospital	When Founded
Royal College of Surgeons opened	1800
London Chest Hospital	1814
Royal Marsden Cancer Hospital	1851
Great Ormond Street Children's Hospital	1852
Nightingale School of Nursing	1860

Why were Florence Nightingale and the Crimean War important in the 'professionalisation' of Nursing?

The Crimean War broke out between Britain and Russia in 1854. It was important in changing the way injured soldiers were treated and the way nursing was viewed as a profession. It made Florence Nightingale famous. It was one of the first conflicts to be widely reported and readers at home soon got to hear about the terrible conditions for injured soldiers in military hospitals.

Crimean War 1854 - 57

Florence Nightingale

transformed the Crimean hospitals in six months. She insisted on good food for her patients, clean airy wards, boiled sheets and taught her team of nurses professional nursing practise. When the army refused to pay for what she said she needed, she bought it herself. She paid 200 builders to rebuild a hospital. After her improvements she had reduced the death rate amongst her injured soldiers from 50% to 3%. She gained the nickname '**Lady with the Lamp**'. Florence wrote a book called **Notes for Nursing**, which was a best seller, set up a **training school for nurses**, which set **professional** and ethical standards that are still used in nursing today.



Hospital Conditions before the Crimean War

- Untrained nurses
- Lack of respect for nurses
- Cramped, stuffy wards
- Poor sanitation, tpilet facilities and sewage disposal
- Lack of cleanliness
- Death rates from infection high

Hospital Conditions after the Crimean War

- Trained nurses
- Nursing seen as a respected job
- Spacious light and well ventilated wards
- Good sanitation, connected to main drains and piped water supplies
- Death rates down from 42/100 to 2/100
- Aseptic surgery and dressings
- Bedding regularly changed

How did Mary Seacole and Betsi Cadwaladr challenge Florence Nightingale's nursing methods?

Mary Seacole

Born Kingston, Jamaica, in 1805.

Her father was a Scottish soldier and her mother was a Jamaican nurse and healer. From a very young age she had an interest in medicine and nursing. She helped her mother run a boarding house in Kingston, where many of the guests were sick or injured soldiers.



Her mother taught her about traditional Jamaican treatments and remedies, and she learned from army doctors staying at the boarding house.

In 1853, at the outbreak of the Crimean War, she went to London to join Florence Nightingale and her team of nurses treating wounded and sick soldiers. Mary was turned down.

She opened a "British Hotel" near to the battlefields, a hut made of metal sheets, where soldiers could rest and buy hot food, drinks and equipment.

Seacole used the money spent there to help treat and care for sick and wounded soldiers. She rode on horseback into the battlefields, even when under fire, to nurse wounded men from both sides of the war. She became known by the soldiers as "**Mother Seacole**".

Betsi Cadwaladr born in Wales. She worked from an early age as a servant and a ships maid. In this role she travelled widely and learnt the basics of nursing and midwifery. Later, she trained at Guy's Hospital and when the Crimea War started, was posted to a hospital in Scutari, Turkey, a hospital being run by Florence Nightingale.



Cadwaladr worked there for some months, but there were many clashes between the two. They came from very different social backgrounds and were a generation apart in age (31 years). Nightingale focused on rules and cleanliness.

Cadwaladr often side-stepped regulations to react more on her initiative to the ever-changing needs of the injured soldiers. Cadwaladr, by now aged over 65, moved by choice from the hospital, nearer to the frontline at Balaclava.

Here, apart from her nursing work and looking after the camp kitchens, she battled the authorities to make sure that necessary supplies got through. Nightingale visited Balaclava twice and, on seeing the changes brought about by Cadwaladr's methods, gave her the credit.

How did the provision of patient care change in the 20th Century?: A change in thinking

Before 1900, people were expected to take care of themselves with any help being mainly provided by charities. This assumed that if people were poor it was their own fault. This idea was called **Laissez Faire**. In 1906, a new Liberal government was elected. They changed the way people thought about attitudes to poverty and the reasons that people were poor. Their ideas were based on research carried out by social reformers such as Seebohm Rowntree. Using these assumptions they created laws in a wide number of areas of people’s lives. This was the start of the **Welfare State**.

	Laissez - Faire	Welfare state
Date ?	BEFORE 1900	After 1900
Who provides care ?	INDIVIDUALS AND CHARITIES	The government
How is care paid for ?	PEOPLE MUST SAVE AND PAY FOR THEMSELVES	Care paid by taxes paid on ability to pay
Who is to blame for poverty ?	PEOPLE ARE RESPONSIBLE FOR THEIR OWN POVERTY	It is not always the fault of the poor that they are poor
How do people avoid poverty?	INDIVIDUALS AND FAMILIES MUST WORK HARD ENOUGH TO ESCAPE POVERTY	It was the role of government to support the poor when they needed it most.
How should patient care be provided?	PROVIDED BY CHARITIES OR LOCAL COUNCILS	Central Government make laws made to provide for the welfare state
What areas of people’s life should the Welfare State cover?		Patient care, education, legal protection for children, workers rights and conditions, sickness, old age , unemployment.

Reforms by the Liberal Government 1906 - 1911

Year	Act / Law Passed	Effect of the Act / Law
1906	Workman's Compensation Act	Gave compensation for injury at work
1906	Education (Provision of Meals) Act	Introduced free school meals
1907	Education Act	Set up school medical inspections
1907	Matrimonial Causes Act	Maintenance payments to be given to divorced women
1908	Children and Young Persons Act	Illegal to sell alcohol, tobacco or fireworks to children
1908	Old Age Pensions Act	Over 70s received 5 shillings a week (25p), 7 shillings and 6 pence (37p) for married couples
1909	Labour Exchanges Act	Set up Labour Exchanges (bit like a job centre) to help get unemployed back to work
1909	Housing and Town Planning Act	Made it illegal to build back to back houses
1911	National Insurance Act	Sick and unemployment pay introduced if contributions were paid

The National Insurance Act 1911

The **NATIONAL INSURANCE Act of 1911** was a really important measure. Insurance was not a new idea. It had been the basis of the friendly societies for two centuries or more. But Lloyd George's scheme went far beyond any of these private schemes. There were 2 parts to the National Insurance Act 1911:

Sick pay

The first part of the Act dealt with HEALTH INSURANCE. All men and women in lower-paid manual and clerical jobs earning under £160 per year had to join. They then had to pay 4d (d = old pence) out of each week's wages. Each payment earned them a 'stamp' on their card. The employer added 3d worth of stamps and the government a further 2d. Liberal posters talked of workers getting 9d for 4d. The money was paid into a friendly society of the worker's choice.

In return, the worker received up to 26 weeks of sick pay at 10 shillings a week. There was also free medical care for the insured. It was an important boost for low-paid workers, but it did not solve all their problems. The families of workers were not entitled to free treatment and widows did not receive pensions.

Unemployment benefit

The second part of the Act dealt with UNEMPLOYMENT and underemployment, especially in 'casual' work. In trades such as building, shipbuilding and engineering, occasional unemployment was common. To cover this, the Act required a further contribution of 2½d per week from the worker, 2½d from the employer and 1¾d from the government. These sums paid for 'stamps' on the worker's card. During times of unemployment, a worker would receive seven shillings per week for up to 15 weeks. It was not much money, certainly not enough to support a working man and his family.

It was organised the way on purpose because the government wanted to encourage careful saving and did not want workers to 'sit back and enjoy' the benefits.

Think Activity:

Who contributed the most to this scheme - worker, employer or government ?

Why did the government expect employers to contribute money?

What did it mean when the government said they 'did not want workers to sit back and enjoy the benefits'?

What criticisms were there of this National Insurance Scheme?

Welfare and Care in the 1920s and 1930s

- After WW1 Lloyd George promised a 'land fit for heroes'
- Building programme of >200,000 new houses built by 1922 to replace slums
- 1920s extended National Insurance Scheme
- Unemployment benefit became known as 'the Dole'
- 1930s economic depression meant health and medical insurance was cut back

Origins of the National Health Service: The Beveridge Report

In 1942 William Beveridge, a civil servant, advised the government about setting up a new welfare state, including a free national health service, which was to give benefits “**from the cradle to the grave**” for all. He identified ‘**Five Evil Giants**’ which needed to be tackled in a post war world. The plans were finally passed by the new Labour government in 1946. A key part of this was the **National Health Service (NHS)** under Aneurin Bevan.

The NHS was free to everyone in the nation and would cover every aspect of health care. **Hospitals were nationalised, health centres** were set up and doctors and services were more evenly distributed across the country. The effect of the National Health Service on people’s health was dramatic.



The ‘Five Evil Giants’ of the Beveridge Report

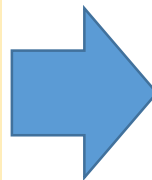
Battle against ‘want’ = National Insurance Act 1946

Battle against ‘squalor’ = Housing Act & New Towns Act 1946

Battle against ‘idleness’ = Employment & Training Act 1948

Battle against ‘ignorance’ = Education Act 1944

Battle against ‘disease’ = National Health Service Act 1946



The National Health Service after 1946 Main Aims:

- Every British citizen could have access to free medical treatment
- The first time hospitals, doctors, pharmacists, opticians and dentists came under the control of one organisation.
- All hospitals were taken under government control (Nationalisation)
- A national system of GPs was set up
- Health centres were set up – local councils and authorities given money to pay for vaccinations, maternity care, district nurses, health visitors etc
- **For the first time ever, everyone had the right to free health care.**
- Before the NHS many could not afford to visit the doctor, let alone buy medicines or have regular treatment.

Opposition to the NHS:

The British Medical Association (BMA) said doctors did not want to be told what to do by the NHS.

Local authorities objected to the nationalisation of their hospitals.

MPs claimed it would all cost too much money and it would encourage people to expect ‘something for nothing’.

How successful was the National Health Service (NHS) after 1948?

Between 1948 and 1949:

**187 million prescriptions
had been written out**



5.2 million pairs of glasses issued



8.5 million people received free dental treatment



When the Conservatives won power in 1951 they agreed to keep the NHS

Reforms and developments in the National Health Service after 1948

- 1951 – a completely free NHS ended with charges introduced for prescriptions and dental treatment
- 1960s - a new programme of hospital building was started building both new hospitals and replacing old ones
- 1979 – 90 – Margaret Thatcher attempted to reform the NHS by cutting costs and encouraging people to take out private provision
- 1990s – Hospitals could become 'Trusts' and GPs 'fund holders' this meant they could buy services from hospitals.
- 1998 – NHS Direct was launched to provide 24 hour health advice over the phone
- 2002 – Primary care trusts were introduced to support the administration of the health service at local level
- 2004 – Foundation trusts were set up to make the NHS more accountable to its customers

Reforms since 1948 have attempted to introduce more market forces into the NHS and cut waste and inefficiency

Revision sheet

List 3 types of hospital in the Medieval Period and what they did.
1.
2
.
3.

Define
Alms-houses –

Dispensaries –

Leper hospitals –

Endowed hospitals –

Describe the 3 stages of hospital growth from 1500 – 1850
1.
2.
3.

Who were..
1. Florence Nightingale –

2. Mary Seacole –

3. Betsi Cadwaladr -

Describe how patient care changed from the Medieval period to the Industrial (19th century) period
1
.
2.
3.

What has changed & continued?

What connects the closing of the monasteries with the setting up of Royal hospitals ?

What connects the Crimean War with professional nursing?

Revision sheet

List 3 Laws passed by the Liberal Government between 1906 and 1911 and explain what they did.

- 1.
- 2.
- 3.

Describe 3 features of the National Health Service .

- 1.
- 2.
- 3.

Describe the main features of the National Insurance Act 1911.

- 1.
- 2.
- 3.

Define

Laissez Faire –

Welfare State –

Labour Exchanges–

Nationalisation–

Who were..

1. Seebohm Rowntree –
2. William Beveridge –

Write down one success of the NHS as a success and one criticism

+

-

Describe 3 important reforms that were made to the National Health Service between 1948 and 2004.

- 1.
- 2.
- 3.

Key Qu- 6

How effective were attempts to improve public health and welfare over time?

You need to know about:

- Public health and hygiene in medieval times (p59)
- Public health and hygiene in 16th and 17th centuries (p59)
- Impact of industrialisation on public health (p59-61)
- Work of Edwin Chadwick (p60)
- Efforts to improve housing and pollution in 20th century (p61-62)
- Local and national attempts to improve public health in 21st century (p63)

KEYWORDS

Laissez faire	Government policy of leaving things to take their own course
Saltaire	A model town created by Titus Salt a factory owner interested in improving the lives of his workers
Clean Party	MPs in the House of Commons who supported using taxes to pay for improvements in public health
Dirty Party	MPs in the House of Commons who were against using taxes to pay for improvements in public health mainly due to the cost
Gas and Water Socialism	Taking over by government or councils for providing gas and water supplies to improve service and cut costs
Smog	A mixture of coal smoke and fog in cities which could kill people or cause breathing problems
New Towns	Planned towns designed to improve people's quality of life and take overcrowding out of cities such as London, Birmingham and Glasgow
5 – a – day campaign	Campaign started in 2003 to encourage people to eat 5 portions of fruit or vegetables a day.

Public Health and Hygiene in the Medieval Period

Some Medieval towns were dirty. In some places the local councils made rules about public health. (York & Coventry)

Coventry in 1421 legislation made to try to clean up the town:

- Every man had to clean in front of his house or pay a fine
- Waste collection services set up
- Designated waste disposal places outside the town
- Between 1421 – 1475 the council banned people from getting rid of their waste in the river 9 times.
- Latrines running across a stream were removed
- Butchers and stables were banned from tipping waste into the river

Public Health and Hygiene in the Early Modern period (16th and 17th Centuries)

Towns and cities very dirty!

1532 Henry VIII made a law that gave towns permission to collect taxes for building sewers – few did!

1547 it was forbidden to pee in the courtyards of Royal Palaces

People were making a connection between dirt and disease and some started bathing – a least monthly!

1666 The Great Fire forced the rebuilding of London and the roads made wider and some argue cleaner BUT

1690 onwards several Acts of Parliament made about cleaning and paving streets, clearing away dung from communal areas and stopping people keeping pigs in their homes.

Read the facts about public health and hygiene in both time periods

- a) How similar were attempts to clean up towns in both periods?
- b) How successful were attempts to clean up towns? Explain your ideas.



Public Health and Hygiene in the Industrial period (19th Century)

- Industrialisation meant people moved to cities where there were more jobs, e.g: -
Bradford – wool,
Manchester – cotton,
Birmingham – metal
Stoke on Trent – potter
- Caused overcrowding
- Poor living conditions
- Water and gas supplies left to private companies
- Poor people worst off
- Government followed a policy of ‘Laissez – Faire’ and did not believe in interfering with working/living conditions
- Many lived in slums



SOURCE 15 Punch cartoon, 1861. Mr Punch (to landlord): 'Your stable arrangements are excellent. Suppose you try something of the sort here?'

What is this cartoon saying about Landlords and conditions for the poor?

Public Health and Hygiene in the Industrial period (19th Century)

Some people tried make changes to public health....



Titus Salt

- Successful wool mill owner (Yorkshire)
- Philanthropist.
- Mayor of Bradford – tried to persuaded council to improve living and working conditions in Bradford FAILED!!
- Moved his business and built a model village SALTAIRE for his workers – houses, library, school, alms-houses, Church,
- NO PUB!

Edwin Chadwick

- Carried out report in 1842 *"The Sanitary Conditions of the Labouring Population"*
- Government **IGNORED** the report
- Member of the Poor Law Commission
- Instrumental in setting up the Health of Towns Commission in 1844 which led to the first Public Health Act in 1848
- Influential member of the **'Clean Party'** who wanted to bring about change in public health. There were opposed by MPs known as the **'Dirty Party'** because it was largely down to taxation of rich to pay for changes



Consider the extent and pace of change!

Public Health Act 1848

1. Allowed councils to improve conditions in their towns if they wanted to and if they paid for it
2. Towns with a high death rate could be forced to make improvements
3. Central Board of Health set up (dissolved after 10 years)
4. Encouraged towns to set up their own local health boards, set up sewers and inspect lodging houses.

Public Health Act 1875

POWERFUL – legislation about sewerage, water supplies, housing and disease
Councils were FORCED to provide

- clean water
- Medical officers of health
- Sanitary inspectors to check slaughterhouses to avoid food contamination

Councils had to

- Cover and maintain sewers
- Provide clean water for people
- Street lighting
- Collect rubbish

Consequences...

By 1872 only 50 councils had a medical officer.

Some towns had made changes but many had not.

1866

Sanitary Act

1875

Artisan's Dwellings Act

This marked the end of Laissez-Faire!

1858 London started building new sewers

Housing Act of 1875

Flushing toilets in better off homes

'Pears' soap

Public Health began to improve!

Laissez-Faire





How did the city of Birmingham lead the way in 19th Century Public Health?

- Joseph Chamberlain
- 'gas and water socialism'
- Council took over gas and water companies
- Aim to improve supplies and use profits to make city a better place to live
- By 1879 council had made a profit of £165,000
- 1884 gas prices reduced by 30%
- 1876 Birmingham Improvement Act cleared 40 acres of slum housing and built new streets, parks, library and council house



Public Health

~~Laissez-Faire~~ →

'The role of the Government is to ensure people live healthy lives'

Why did the government start to intervene in 20th Century?

- 1899 Boar War – 40% of male recruits found to be too unfit to serve
- 1889 Charles Booth identified 35% of population living in abject poverty in London
- 1897 Seebohm Rowntree – almost half of working class in York living in poverty
- 1913 Maud Pember Reeves set out to prove that working class wasted money on drink and ended up showing how many were in poverty and how many women went without to ensure their husbands and children were fed.

How similar/different are the problems found here to the problems highlighted by Chadwick?

Liberal Government began to make changes
REFORMS for sick, unemployed, elderly and children (see slide 53)

Impact of World War 1 – 1914 - 1918

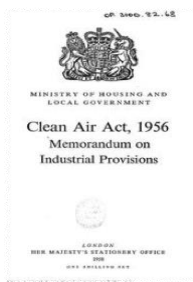
- 1919 – Lloyd George promises 'Homes fit for Heroes'
- 1920s, 30s, 40s legislation about housing, new towns built. East End Londoners moved out to new town like Milton Keynes. Houses now featured bathrooms, running water, gardens!
- 1950s slum clearance became the focus

Clean Air and Smog

1952 there were severe episodes of SMOG in London.
SMOG = mixture of coal smoke and fog
5-9 Dec 1952, - 12,000 people died and 100,000 taken ill.
Large population and almost everyone burned coal to heat their homes – smoke and soot – air pollution



Government passed legislation – **Clean Air Act in 1956 and 1968**
Government continue to pass laws to protect the populace from air pollution – e.g.: car emissions & smoking.
Environmental Protection Act 1990
Clean Air Act 1993
Both acts aimed at cutting ‘Greenhouse gases’



Case Study- Cumbernauld New Town

52,000 houses divided into 11 regional areas
Started in 1956 to deal with overcrowding in Glasgow
8th largest town in Scotland
Social problems linked to new towns
In 2005, Cumbernauld Shopping Centre voted ‘the worst building in Britain!’

New Towns: Designing the ‘towns of the future’

Problems of ‘old’ towns:
Overcrowding, slum housing, poor infrastructure and sewerage and dirty streets.

Aims of ‘new’ towns:
Create ‘greener’ setting, attractive and spacious housing with indoor plumbing , gardens, public parks, cycle routes, planned towns and people separated from traffic. Solve problems of overcrowding or ‘overspill’ in the major cities

Examples of ‘new’ towns:
Letchworth 1903 – first new town
Milton Keynes 1967 for London overspill
Telford 1963 and Chelmsley Wood 1965 for Birmingham overspill
Cumbernauld 1956 for Glasgow overspill

Problems of ‘new’ towns:
Large housing estates with inadequate facilities, isolation from traditional communities, cheap tower blocks built – poorly designed and constructed, poor maintenance, anti-social behaviour.

Who is responsible for Public Health?



Department of Health

Government?



Responsible for your own health?



Parents?



Doctors?

Public Health and Hygiene in the Late Twentieth Century

Unhealthy lifestyles ? – According to doctors, in the late 20th Century – present British people:

- Eat too much*
- Eat the wrong foods*
- Drink too much alcohol*
- Do not take enough exercise*
- Smoke too much (although the numbers of smokers is falling)*
- Work by sitting down and using screens for long periods of time*

Unhealthy lifestyles ? United Kingdom health in numbers

- 20% of children in primary school obese*
- 68% of men & 58% of women overweight or obese – highest in Europe*
- 15% regularly smoke & 400% increase in alcohol related liver disease*
- 20 million British people take no regular exercise at all.*
- Overall cost to the NHS £1.2 billion a year*

Solutions?

- Fitness drives
- 'monthly' campaigns
- pay for treatment
- campaigns
- public education
- tax lifestyle
- healthy eating



Revision sheet

List 3 ways that towns tried to improve public health in the Medieval Period.

- 1.
- 2
- 3.

Define
Clean Party –

Dirty Party-

Gas and Water Socialsim-

Describe 3 problems caused by Industrialisation in towns and cities in the 19th Century

- 1.
- 2.
- 3.

Who were..
1. Edwin Chadwick –

2. Titus Salt –

3. Joseph Chamberlain -

Describe how the Public Health Acts of 1848 and 1875 attempted to improve public health changed from the Medieval period to the Industrial (19th C) period

Public Health Act 1848

Public Health Act 1875

What were the main differences between the two acts?

What connects the city of Birmingham with 19th Century public health?

Revision sheet

List 3 problems connected with 'old' towns in the early 20th Century.

- 1.
- 2
-
- 3.

Define
Smog –

New towns –

Environmental Health-

5 - a – day campaign

What effect did Smog have on London in the 1950s?

Describe 3 problems connected with 'new towns' from the 1950s onward.

- 1
- 2.
- 3.

Describe 3 aims in creating 'new towns' from the 1950s onward.

- 1
-
- 2.
- 3.

What problems have doctors identified with health and lifestyle in the later part of the 20th Century?

Explain 3 ways that have been put forward to address these problems.

Case Study- historic environment of Eyam

You need to know:

- **the historical context:** the **arrival** of the Great Plague in August 1665; the **spread** of the disease; the **exodus of richer** inhabitants; the **main features** of the plague in Eyam in 1665; beliefs about the causes of the **plague**; **symptoms**; **cures and remedies** and their **effectiveness**; survival rates; the **disposal of victims**;
- **new methods** attempted to **combat** the plague; the **leadership** of church leader **William Mompesson** and the **Puritan minister Thomas Stanley**; **quarantine** of the village; the laying of **plague stones** as **boundary markers**; the supply of food to the village and precautions taken; relocation of church services to outside venues; the responsibility of **families to dispose of their own dead**;
- the **consequences** of the Great Plague in Eyam; **death and survival rates**; the **effectiveness** of the quarantine and the **success of communal action**; **significance of Eyam for changing attitudes towards the prevention of disease**.

6a) Describe two main.....

in Eyam in 1665. [8]

6b) Explain why the..... of Eyam during the Great Plague was significant in showing in the seventeenth century. [12]

Case Study- historic environment of Eyam

History in Context - The Great Plague 1665

When?

- Lasted from June to November
- 100,000 people died in London (1 in 5 people)
- They still didn't know what caused it so they blamed...
- The alignment of Saturn and Jupiter and between Mars and Saturn. A comet was also spotted
- God was punishing them
- The most popular theory was miasma causing by stinking rubbish on the streets
- Person to person infection

How was it treated?

- Quarantining victims in their homes
- Wrapping victims in woollen clothes and lying them by the fire – sweat it out
- Transference – strapping a live chicken to a buboes to draw out the poison
- Herbal remedies
- **Quack** remedies

Pray
Quarantine anyone with the plague
Carry a Pomander (a ball containing perfumed substances)
Fasting or eating a garlic heavy diet

Doctors said...

Apothecaries prescribed 'plague water'
Use mint and rosemary or sugar and nutmeg
Smoke tobacco
Catching syphilis would prevent the plague

Other healers said...

The Plague Doctor



The birdlike masks were stuffed with herbs to ward off the miasma. It was shaped like a bird because it was believed that birds attracted the disease, therefore would leave the patient alone.

The wax cloak would be wipe clean (think about the symptoms of the plague)

Did the government help?

- King Charles II said everyone should fast regularly ☹️
- Public meetings and theatres were closed 😊
- Streets and alleyways were swept and cleaned 😊
- Fires were set to burn on streets to drive away the miasma ☹️
- 40,000 dogs and 200,000 cats were slaughtered ☹️
- Searchers and wardens checked for plague victims and quarantined the houses.
- Houses were painted with a large red cross.
- Carts would travel through the streets and collect dead bodies 😊

Case Study- historic environment of Eyam



3 steps to combat the Plague in Eyam



How did Plague arrive in Eyam?

- **August 1665**
- Cloth ordered from **London**
- Tailor – Thomas Hadfield
- Assistant (**George Viccars**) unpacked the cloth which was damp.
- Dried it out in front of the fire
- Cloth was **infested with rat fleas**
- George Viccars became the first victim of **bubonic plague** in Eyam
- He died a week later
- Buried on 7th Sept 1665



Who took action?

People looked to the Church for leadership
They took steps themselves to stop the spread

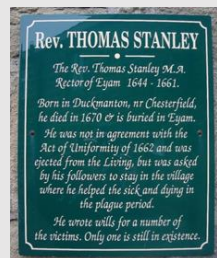
Rev. William Mompesson



- Vicar (Church of England)
- Came up with the idea of the Quarantine
- Needed Thomas Stanley's help to convince villagers to take this action

Rev. Thomas Stanley

- Non-Conformist minister who had been sacked for refusing to conform to established Church.
- He was popular with villagers, therefore helped to persuade them to quarantine the village.



1. Cordon Sanitaire –

- a **Quarantine** zone. 1.5 miles from the centre of the village a circular boundary of **plague stones** was set up.
- No one was allowed to pass in or out and signs were put up marking the boundary.
- As the village couldn't support itself it was arranged that food would be left at the boundary stones in exchange for money which was left in vinegar which they hoped would kill the disease.

2. The Church was locked and outdoor services held in Delph Valley with Mompesson preaching from a rock called '**Cucklett Church**'. Families were encouraged to **stand in groups** and **distance** themselves from other families.

3. **Dead bodies** of plague victims were to be **buried straight away near their homes** and not in the graveyard. No traditional customs were allowed. They hoped that this would eliminate the disease spreading from corpses awaiting burial.

Case Study- historic environment of Eyam



Eyam v London

Similarities	Differences
<ul style="list-style-type: none"> •Plague victims could not be buried in Church graveyard •Searchers appointed to identify anyone showing signs of plague symptoms •No one to come out of the infected house – red cross painted on the doors •London - Theatres and public entertainment closed to avoid large gatherings of people. Eyam – Church services held in the open air 	<ul style="list-style-type: none"> •London – city. Eyam – village •London –cross painted above the door •London – constables enforcing borders but because London was so big it was difficult to enforce •London – cats and dogs killed •London – bodies buried after dark

What was the effect of the Plague in Eyam?

Short - Term effect

- By end of October 29 1665 29 deaths. This was more deaths in two months than in the previous ten years
- Villagers panicked - 50 individuals left, mostly rich people.
- Fewer deaths through winter months as rat population dropped.
- Increase in number of deaths for April 1666 onwards. Sharp rise through Summer
- Fell again in October. Last single death in November
- Total number of deaths 260 out of a population of 800
- 76 families affect, e.g: Hancock Family, Elizabeth buried her husband and 6 children in the space of 8 days. 9 members of the Thorpe family all died in the same house

Long - Term effect

- Population fell sharply immediately after 1666. By 1700 the population figure was still well below what it had been in 1665.
- Ratio of plague deaths to other deaths higher than London

Eyam 10:2

London 5:9

- Farms left uncultivated.
- Key businesses left not running until people returned to the village.
- The record of baptisms show that number declined due to fewer adults of childbearing age.
- There were no plague deaths outside of Eyam. Nowhere else in Derbyshire was affected.
- Lack of skilled craftsmen in the village. It took years to fill these vacancies

How did the methods taken at Eyam impact on Medicine through time?

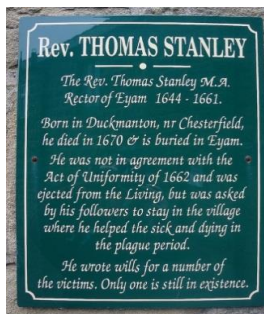
Self - imposed Quarantine	
Villagers paid for food supplies by leaving coins in vinegar	
Villagers were encouraged not to be in close contact	
Villagers were encouraged to isolate themselves	
The bodies buried immediately & close to the actual place of death.	
Sterilisation of coins	

Case Study- historic environment of Eyam

Key Words

Cordon Sanitaire -
 Plague -
 George Viccars -
 Alexander Hadfield -
 William Mompesson -
 Thomas Stanley –

Rev William Mompesson



Who was Mompesson and Stanley?

Describe how the Plague arrived in Eyam in 1665.

When the plague arrived in Eyam the villagers did not know what to do, they looked to the Church for answers. List the methods introduced by Mompesson and Stanley. For each one explain how it helped stop the spread of the disease.

Method	How did it stop the spread of the plague?	How effective? 1 -10

What is this object?



Case Study- historic environment of Eyam

1. Where is Eyam?
2. What was the population of Eyam?
3. Who was the first person to die from the plague?
4. Who was Mompesson?
5. Why did Mompesson need Thomas Stanley's help?
6. What was the distance of the circular boundary set up around the village?
7. What was Cucklett Church and why was it significant?
8. How many people died in total over 14 months?
9. How does this compare with the percentage of the population of London who died in 1665?
10. How many families were affected by the Plague in Eyam?

11. What happened to Elizabeth Hancock's family?

12. Why were there more deaths in the summer months?

13. When did the Plague start to die out?

14. What did Mompesson organise in an attempt to stop any further outbreaks?

15. Why did he do this and what did people believe at the time?

Note four ways in which what happened in Eyam may have influenced attitudes towards the prevention of disease

Impact Eyam

List both the long and short term impact of the Plague on Eyam.

Question 1- Use sources A,B and C to identify one similarity and one difference in(5 marks)

How to answer

- Study the three sources – pick out features that are the same or similar
- Pick out point that contrast – which show that things are different
- Make sure you have included both similar and different in your answer

Band descriptors and mark allocations

Marks available

	AO2 2 marks		AO3(a) 2 marks	
BAND 2	Identifies clearly one similarity and one difference.	2	Uses the sources to identify both similarity and difference.	2
BAND 1	Identifies either one similarity or one difference.	1	Uses the sources to identify either similarity or difference	1

Example answer: Look the three sources below which show the treatment of illness over time
Use sources A,B and C to identify one similarity and one difference in the treatment of illness over time.



▲ Source A: A man being bled using leeches during medieval times



▲ Source B: Professor Alexander Fleming and Penicillin



▲ Source C: A patient undergoing radiation therapy

5/5

Step 1: Identify features of similarity – things which are the same across the sources

All the sources show attempts by medical persons to treat illness. Within their own time period they were all considered to be medical experts – Source A shows a barber surgeon, Source B a professor of medicine and Source C a specialist doctor.

Step 2: Identify features of difference – things which contrast and are not the same across the sources

However, the sources differ in the type of treatment shown. Source A shows primitive methods of bleeding the patient. Source B shows the development of specialist drugs to fight illness and disease, and Source C shows the use of modern scanning machines to detect illness and disease.

Question 2- Which of the two sources is more reliable to a historian studying ? (6 marks)

Source D: Extract from Dr Edward Jenner's book *An Enquiry into the causes and effects of Variola Vaccinae, known by the name of Cowpox*, which was published in 1798

Case 17 James Phipps

I selected a healthy boy, about eight years old. The matter was taken from the [cowpox] sore on the hand of Sarah Nelmes and it was inserted on 14 May 1776 into the boy by two cuts each about half an inch long. On the seventh day he complained of uneasiness, on the ninth he became a little chilly, lost his appetite and had a slight headache and spent the night with some degree of restlessness, but on the following day he was perfectly well.

In order to ascertain that the boy was secure from the contagion of the smallpox, he was inoculated with smallpox matter, but no disease followed.



▲ Source E: A cartoon drawn by James Gillray which was given the title *The Cowpox - or - the Wonderful Effects of the New Inoculation*. It was published in 1802 and shows people's panic over the new process of vaccination

How to Answer

- You need to make sure you are writing about both the content and the author of the source
- The content of source D: how true is what is shown or said in the source?
- The author of source D: How reliable is the source?
- Think about – who wrote/made it?, when was it written / made? Why was it written / made? who is the audience for the source? Does my own knowledge agree or not with the source?

Marks available

Band descriptors and mark allocations

	AO1(b) 2 marks	AO3 (a+b) 4 marks	
		Fully analyses and evaluates the reliability of both sources. There will be analysis of the content and authorship of both sources, producing a clear, well substantiated judgement set within the appropriate historical context.	3-4
BAND 2	Demonstrates detailed understanding of the key feature in the question.	2	Partial attempt to analyse and evaluate the reliability of both sources. There will be some consideration of the content and authorship of both sources with an attempt to reach a judgement set within the appropriate historical context.
BAND 1	Demonstrates some understanding of the key feature in the question.	1	Generalised answer which largely paraphrases the sources with little attempt at analysis and evaluation.

Example answer: Which of the two sources is more reliable to a historian studying the development of vaccination during the late 18th and early 19th Centuries?

Step 1: Explain the content of Source D and link it to your knowledge of the topic area. Make and support judgements about the reliability of the author.

Source D is reliable to a historian because it is an extract from the case notes of Edward Jenner which was included in his book *An Enquiry into the causes and effects of Variolá Vaccinae, known by the name of Cowpox*. This book was published in 1798 and it contains Jenner's research findings into his experiments with inoculation with cowpox and smallpox. In his account he describes how in 1796 he injected a small boy, James Phipps, with the pus from the sores of a milkmaid with cowpox. Phipps developed cowpox and he recovered. He was then given a dose of smallpox, but he did not develop smallpox. Jenner provides a fact-based account of his work which makes it reliable to the historian as it outlines, without any apparent bias, how he carried out his experiments with inoculation. This makes it very useful to the historian.

Step 2: Explain the content of Source E and link it to your knowledge of the topic area. Make and support judgements about the reliability of the author.

Source E is considerably less reliable as it is a humorous cartoon produced by the famous cartoonist James Gillray in 1802. It is a contemporary reflection upon attitudes towards Jenner's work. It shows people in a panic about the idea of injecting a person with cowpox and the effects it could have upon them. The cartoonist has highlighted the level of concern that existed to the idea of inoculation and vaccination by drawing parts of cows growing out of the arms and heads of some of the people who have already been vaccinated. While the cartoon was intended to entertain and therefore exaggerates the level of concern, it does reflect the reality of the opposition which faced Jenner. People did object to inoculation due to a belief that people would turn into cows. The source is reliable to the historian in part as it provides evidence of opposition to inoculation and vaccination but it does not reflect in any accurate way the actual effects of inoculation.

Step 3: Conclude with a final reasoned judgement - which of the two sources is the most reliable and why.

Of the two sources, Source D is clearly the more reliable to the historian studying the development of vaccination as it is based on fact. It records the research notes of one of the pioneers of vaccination. Source E has little reliability as it is humorous and what it actually shows is not reality. However it can still be useful in mirroring contemporary concerns and the arguments that were put forward against vaccination.

Question 3 – Describe the development of..... (5 marks)

Marks available

How to answer

Band descriptors and mark allocations

AO1(a) 5 marks		
BAND 3	Demonstrates detailed knowledge to fully describe the issue set within the appropriate historical context.	4-5
BAND 2	Demonstrates knowledge to partially describes the issue.	2-3
BAND 1	Demonstrates limited knowledge to describe the issue.	1

- You need to identify and describe at least two key features
- Only include information that about the focus of the question
- Avoid general descriptive comments

Example answer: Describe the development of methods used combat the spread of the plague during the Black Death

5/5

Step 1: Identify and develop a key reason/feature, supporting it with specific detail.

The Black Death spread rapidly across Europe during 1348–49 causing the death of up to 40 per cent of the population. It was highly contagious and various methods were developed to try and prevent its spread. One common method was that of quarantine. Travellers were placed in quarantine zones before being allowed to enter a town. Another method adopted to stop the spread of disease from dead bodies awaiting individual burial was to speed up the process by taking the dead away to be buried in one large plague pit outside the town walls. They needed to be buried as quickly as possible. Infected families had to board up doors and windows to prevent infecting neighbours.

Step 2: Identify and develop other key reasons/features. Aim to cover two to three reasons/features in some detail.

Other methods developed included the increasing use of potions like theriac or the carrying of scented flowers and herbs, in the belief that they would kill off the plague. The clothes of diseased people were burnt in the hope it would kill off the infection. In an attempt to appeal to God for salvation flagellants whipped themselves in a display of suffering, hoping this penance would cause the disease to pass them by. In an attempt to stop catching the plague doctors developed protective clothing, wearing gowns and hoods when making house calls, their hood containing a beak which was stuffed with herbs.

Question 4 – Explain why developments inwere important in..... (9 marks)

Marks available

How to answer

Band descriptors and mark allocations

AO1(a+b) 2 marks			AO2 7 marks		
			BAND 3	Fully explains the issue with clear focus set within the appropriate historical context.	5-7
BAND 2	Demonstrates detailed knowledge and understanding of the key features in the question.	2	BAND 2	Partially explains the issue within the appropriate historical context.	3-4
BAND 1	Demonstrates some knowledge and understanding of the key features in the question.	1	BAND 1	Mostly descriptive response with limited explanation of the issue.	1-2

- Give details such as names, dates, events, developments and effects
- Always support your points with examples
- Provide a judgement on the importance of a person or advance in medical knowledge

Example answer: Explain why the work of Pasteur and Koch was important in the advancement of medical knowledge during 19th and 20th Centuries.

Step 1: Provide several reasons to support the view that the factor mentioned in the question was important/significant. Include specific factual detail to support your judgement.

The work of Louis Pasteur and Robert Koch was very important in the development of medical knowledge in the nineteenth and twentieth centuries. Pasteur developed the 'germ theory, which suggested that germs were the cause of disease. Through examining the causes of diseases he discovered that the process of heating liquids helped to kill germs, a process that came to be known as pasteurisation. Pasteur went on to develop vaccines for diseases like chicken cholera, anthrax and rabies, and experimented in methods of vaccination and immunisation. His research had a significant impact upon the treatment of illness.

Step 2: Make sure you provide a reasoned judgement upon the degree of importance/significance. Make links to the longer-term impact.

Koch developed Pasteur's work further by isolating the bacteria responsible for TB, cholera and anthrax. He pioneered the new science of bacteriology, proving that a specific germ caused a specific disease, and in 1905 he was awarded the Nobel Prize for his research work. Through their experiments with germs, both Pasteur and Koch played a very important and significant role in the development of medical knowledge. Later scientists were able to use their methods to develop a vaccine for diphtheria and syphilis.

Question 5 – Outline howhave changed from c500 to the Present day (16 + 4 marks) page1

Marks available

How to answer

Band descriptors and mark allocations

	AO1(a+b) 6 marks		AO2 10 marks	
BAND 4	Demonstrates very detailed knowledge and understanding of the key issue in the question.	5-6	Provides a fully detailed, logically structured and well organised narrative account. Demonstrates a secure chronological grasp and clear awareness of the process of change.	8-10
BAND 3	Demonstrates detailed knowledge and understanding of the key issue in the question.	3-4	Provides a detailed and structured narrative account. Demonstrates chronological grasp and awareness of the process of change.	5-7
BAND 2	Demonstrates some knowledge and understanding of the key issue in the question.	2	Provides a partial narrative account. Demonstrates some chronological grasp and some awareness of the process of change.	3-4
BAND 1	Generalised answer displaying basic knowledge and understanding of the key issue in the question.	1	Provides a basic narrative account. Demonstrates limited chronological grasp and limited awareness of the process of change.	1-2

- **Make sure your answer covers 4 historical time periods**
- **Include facts and details like names, dates, key methods/developments**
- **Start a new paragraph for each time period**
- **Link the points you make back to the question**
- **Comment on the amount of progress made in any time period/ speed or scale of change**
- **Check spelling punctuation and grammar for accuracy**

Example answer: Outline how the methods of caring for patients have improved between c500 and the present day

16/16

Step 1: Introduce the topic area to be analysed and discussed in the answer.

The care and treatment of patients has changed significantly over the centuries. At some times the pace of change has been faster, particularly in recent centuries and, generally speaking, these changes have resulted in an overall improvement in the quality of care provided for patients.

Question 5 – Outline howhave changed from c500 to the Present day (16 + 4 marks) page 2

Step 2: Select one time period and discuss the state of medical provision at that time. Provide specific factual detail and make links to the question.

During the medieval period the body that was mainly responsible for caring for the sick, elderly and those in need of medical attention was the church. Over 1100 hospitals were set up across England and Wales during the medieval period, most of them attached to monasteries. Most monasteries had infirmaries which tended to the sick but they were not hospitals like the ones we have today. They provided a place of 'hospitality' which was a place of rest and recuperation rather than a place to be cured from illness or disease. Some specialised in looking after certain types of peoples such as lepers, unmarried pregnant women, young orphaned children and the elderly. They did not treat the sick but aimed to make patients as comfortable as they could. People who were seriously ill and in need of constant care were often not allowed into the hospital. Life in the hospital was very religion based and patients were expected to spend a proportion of their time praying to God for forgiveness of their sins, the belief being that it was their sinfulness that had caused their illness. During this period the quality of the care was not based upon treating the nature of the illness but upon saving the soul of the patient.

Step 3: Select a second time period and discuss the improvements/changes in some detail. Make links to the previous time period to show the improvements/changes or lack of improvements/changes that had taken place.

A change in the quality and type of care offered to patients began to take place during the early modern period. The decision by Henry VIII to dissolve the monasteries in the 1530s seriously reduced the number of hospitals, which resulted in the church no longer playing the leading role in caring for the sick. During the sixteenth and seventeenth centuries this role was taken on by voluntary charities and individuals. Although these charities were often religion based, endowing hospitals such as St Bartholomew's, St Thomas' and St Mary's in London, their role and function in caring for the sick changed. Even some towns outside London, such as Norwich and Cambridge, set up endowed voluntary hospitals. These institutions were developed further during the eighteenth century by being supported with endowments granted by wealthy individuals such as Thomas Guy and John Addenbrooke, which resulted in the founding of Guy's hospital in London in 1724 and Addenbrooke's hospital in Cambridge in 1766. These institutions marked a turning point in the development of patient care. They employed doctors to treat patients and nurses to care for them on wards. They also issued medicine. This was a significant improvement upon the type of care offered during the medieval period.

Question 5 – Outline howhave changed from c500 to the Present day (16 + 4 marks) page 3

Step 4: Select a third time period and discuss the improvements/changes in some detail. Make links to the previous time periods to show the improvements/changes or lack of improvements/changes that had taken place.

During the nineteenth century the major developments in patient care were the building of purpose-built hospitals such as Great Ormond Street in 1852, the development of surgical procedures, the advancement of medical knowledge and the creation of a professional nursing staff. Of these the one which had a dramatic impact upon the quality of patient care was the work of Florence Nightingale, who pioneered new methods of nursing. Upon her return from treating the wounded soldiers in the Crimean War Florence set up the Nightingale School of Nursing. This created a professional nursing corps, a move which revolutionised how patients were looked after in hospital. Florence was also heavily involved in the design of new hospitals. As the twentieth century dawned the government began to take on some of the responsibility for tending to the sick and injured. The 1911 National Insurance Scheme devised by Lloyd George enabled members to receive medical treatment if they contributed into the National Insurance Scheme. The Beveridge Report of 1942 forced the government to take on a more direct control of looking after the nation's health and in 1948 the National Health Service was created. This was a radical change which brought about significant improvement in the care of patients, particularly as it now meant patients received free treatment in return for a compulsory National Insurance contribution.

Step 5: Write a conclusion which contains a reasoned judgement upon the question. Remember to check through your answer for correct spelling, punctuation and grammar.

The biggest change in patient care over the centuries has been a move away from just caring for patients to actually treating the nature of their illness or injury. There has also been a move away from private institutions such as the church or voluntary charities fulfilling the role of providing patient care to the state taking on that role, the result being the creation of the Welfare State and a National Health Service.

Question 6a – Describe two main features of..... (8 marks)

Example answer: Describe two main consequences of the visit of the Great Plague to Eyam in 1665 -66.

8/8

Step 1: Identify and develop a key reason/feature, supporting it with specific factual detail.

A major consequence of the visit of the Great Plague to Eyam was the extreme loss of life. In 1665 Eyam's population stood at around 800 people and by the autumn of 1666 it had been reduced by at least one third. The months of July and August 1666 witnessed the high point of the epidemic with 134 deaths recorded. In total over 260 people in Eyam died as a result of the plague. The loss of life had a dramatic impact upon the lives of those who survived, all of whom had lost family members.

Step 2: Identify and develop a second key reason/feature, supporting it with specific factual detail.

A second major consequence was the impact this high death toll had on the local economy. Seventy-six families were affected by the plague, some paying a very high price. All the members of the Thorpe family died out, leaving their farm empty and the land uncultivated for some time. The Talbot family was almost wiped out, the only exception being a son who was working away from the village at the time. He later returned to take over the smithy which had stood idle since his father's death. It took the village many years to recover economically from the impact of the plague.

Marks available

How to answer

Band descriptors and mark allocations

AO1(a) 8 marks		
BAND 3	Offers detailed knowledge to fully describe two main features of the historic site set within its appropriate historical context.	6-8
BAND 2	Offers some knowledge to describe two main features of the historic site set within its historical context.	3-5
BAND 1	Offers a generalised description with limited knowledge of two main features of the historic site.	1-2

- You need to identify and describe two key features
- Only include information directly linked to the focus of the question

Question 6b – Explain why (12 marks) page 1

Marks available

Writing structure

Band descriptors and mark allocations

AO2 12 marks		
BAND 4	Offers a sophisticated and reasoned explanation and analysis of the historic site and its relationship with historic events and developments. The answer fully addresses the position of the historic site in showing changes in health and medicine set within the appropriate historical context.	10-12
BAND 3	Offers a reasoned explanation and analysis of the historic site in showing changes in health and medicine set within the appropriate historical context.	6-8
BAND 2	Offers some explanation and analysis of the historic site in showing changes in health and medicine set within the appropriate historical context.	3-5
BAND 1	Offers a generalised explanation and analysis of the historic site with limited reference to changes in health and medicine.	1-2

- Identify the key reasons which show a change or improvement
- Write about each reasons in detail using supporting evidence
- Explain how and why the environment helped cause these changes
- Were these changes improvements or not
- Write a judgement which links back to the question

Example answer: Explain why the environment of Eyam during the Great Plague was significant in influencing methods used to limit the spread of disease in the 17th Century.

12/12

Step 1: Introduce the topic under discussion, providing historical context to outline the type of environment being studied.

An analysis of the environment of Eyam during the Great Plague of 1665–66 reveals that it was partially significant in influencing methods used to limit the spread of disease in the seventeenth century. One of the biggest concerns was the highly contagious nature of the disease which spread at a rapid rate and resulted in a high death rate among infected persons. There was also the impact this had upon the removal and prompt burial of the dead. The methods adopted by the villagers at Eyam in Derbyshire to tackle these problems did show that it was possible to limit the rate of infection and contain disease within a controlled area.

Question 6b – Explain why (12 marks) page 2

Example answers

12/12

Step 2: Discuss one element of change in some detail, explaining how the environment helped cause the change/improvement.

The Great Plague of 1665 had its biggest impact in London. The first reported death occurred in April and by July the Plague had spread across the whole city. During September over 26,000 people died. The most pressing problem facing the authorities was how to limit the spread and contain the outbreak. The disease first reached Eyam in August 1665 following the arrival of a parcel of cloth from London which was infected with rat fleas carrying the deadly Black Death disease. By early September the first deaths were recorded in the village. This caused many of the wealthy inhabitants to leave, possibly taking the disease with them, which was a concern to neighbouring settlements.

Step 3: Discuss other features of the environment which caused change in medical procedures, evaluating their significance and importance.

Medical knowledge about how the disease was spread was limited and there was no known cure. Some people carried sweet-smelling flowers in the belief they would kill off bad-smelling air, while others bought herbal medicines, but they had no real impact. A more successful method was that of imposing isolation, boarding up windows and doors in order to confine infected families within the house. As the plague spread through Eyam during the early spring of 1666, two clerics, William Mompesson and Thomas Stanley, decided to take the lead and they persuaded the villagers to impose a quarantine zone around the village. The immediate impact of this was to stop the spread of the plague to neighbouring villages.

Question 6b – Explain why (12 marks) page 3

Example answers

12/12

Step 4: Continue to discuss other features of the environment which caused change in medical procedures, evaluating their significance and importance.

What made the quarantine zone effective was the fact that all the villagers agreed to follow it. It was decided that all persons who died of the plague were to be buried as quickly and as near to their homes as possible in order to reduce the risk of contamination to others. The church was locked and all services were to be held in the open, again to reduce contamination within confined spaces. A quarantine zone was placed around the village. Food supplies from neighbouring villages were left at agreed boundary posts and money was deposited in pans of water or vinegar to try and reduce the risk of infection.

While the death rate in Eyam was high, a consequence of the quarantine was that it stopped the spread of the disease to the nearby settlements of Bakewell, Buxton and Chesterfield. The disease was successfully contained but at a high cost to the villagers of Eyam. Several families were completely wiped out and many experienced the loss of many family members. Of the Hawksworth family, only the wife, Jane, survived out of an extended family of 25.

Step 5: Conclude with a reasoned judgement, demonstrating how the environment under study resulted in changes in health and medicine.

The important lesson that was gained from the events in Eyam was that the introduction of an enforced quarantine zone could serve as an effective means of stopping the spread of disease. The quick disposal of the dead together with the decision to bury them as close to the actual spot of death also helped to reduce infection rates. The banning of meetings in confined spaces such as the church also helped to limit the risk of infection. When the plague and other highly infectious diseases occurred in later centuries the lessons of what had been done at Eyam to limit the spread of disease were acted upon.