



History Revision Booklet

Medicine in Britain and the Western Front

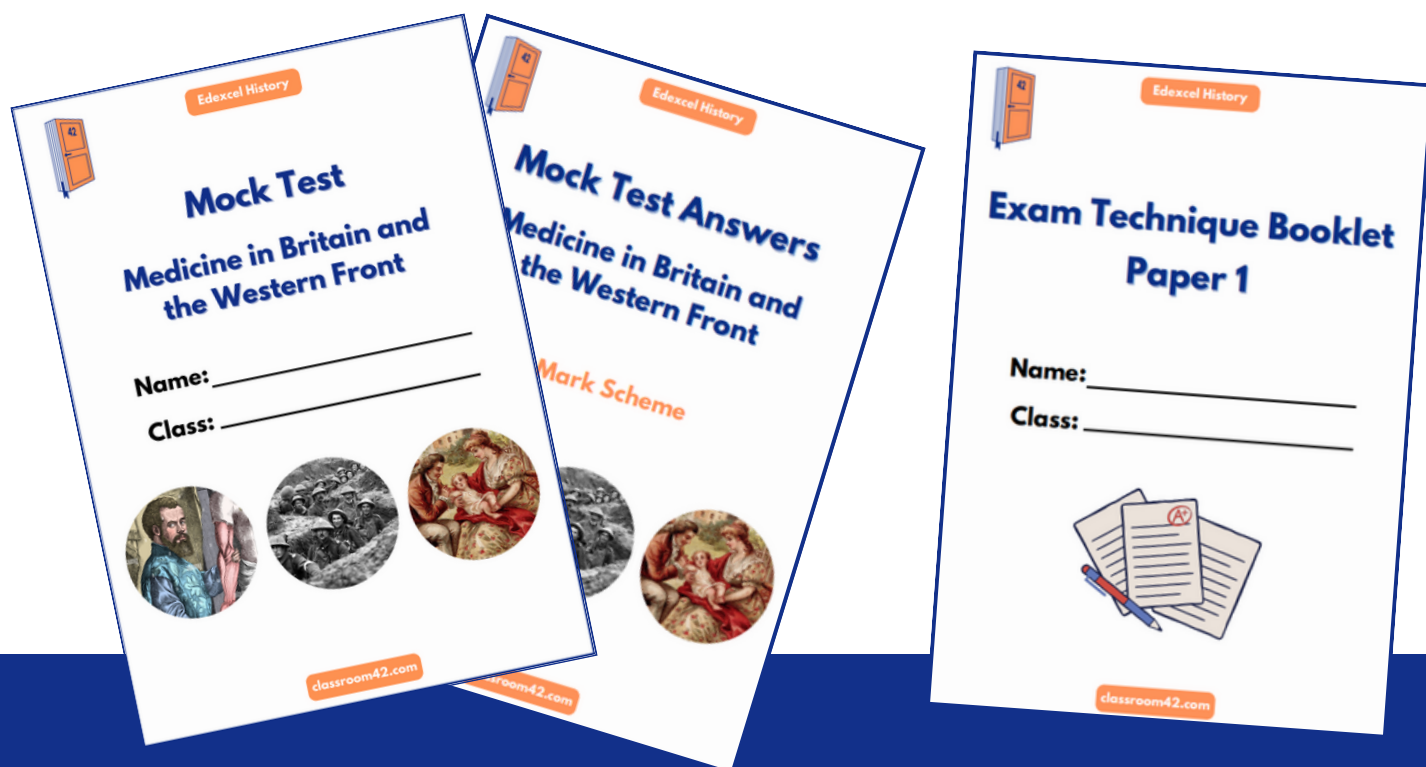
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MEDICINE IN BRITAIN & THE WESTERN FRONT TIMELINE

Ancient Greece & Rome - Hippocrates & Galen influencing natural medicine



1300s

1348 - Arrival of Black Death in Britain



1400s

c1439 - Invention of printing press

1500s

1536-40 - Dissolution of monasteries

1543 - Vesalius' The Fabric of the Human Body published



1628 - Publication of Harvey's An Anatomical Account of the Motion of the Heart and Blood

1600s

1665 - The Great Plague

1660 - Royal Society established



1676 - Thomas Sydenham's Observations Medicae published



1700s

1796-98 - Jenner's development of smallpox vaccine

1800s

1854 - John Snow discovered cholera was being spread through water pump

1847 - Simpson discovered chloroform as anesthetic

1859 - Florence Nightingale's Notes on Nursing Published

1857 - Mary Seacole published 'The Wonderful Adventures of Mrs Seacole in Many Lands'



1861 - Pasteur's discovery of Germ Theory

1860 - Opening of Florence Nightingale's School of Nursing



1866 - Lister began use of carbolic acid

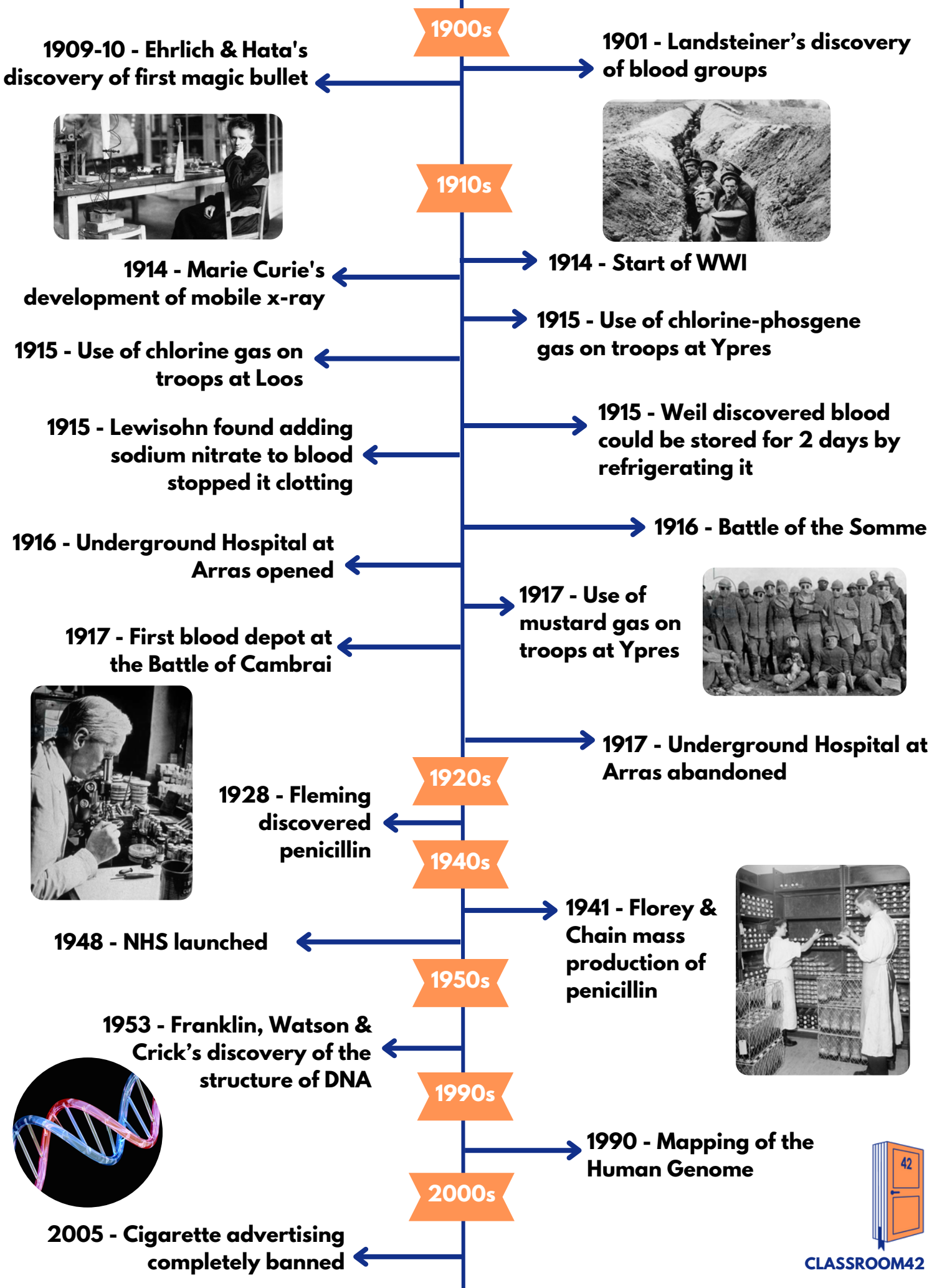
1875 Second Public Health Act

1876 - Koch discovered bacteria that causes anthrax

1895 - Röntgen's discovery of x-rays



MEDICINE IN BRITAIN & THE WESTERN FRONT TIMELINE



Trained at universities in Hippocrates, Galen and Arab medical writers (e.g., Rhazes), fewer than 100 in England in 1300 and charged high fees

Barber Surgeons



Not trained, learned through practice and carried out bloodletting and amputations and also cut _____

Apothecaries



Sold herbal remedies - cheaper than doctors

Hospitals



Ran by _____, the most ill were not admitted due to fear of disease spreading



- **Purging** - Swallowing herbs and fat to make patient _____ or taking a laxative to empty bowels
- **Blood-Letting** - Done by a surgeon who drew blood out often with _____
- **Zodiac Charts** - It was believed the body was linked to the _____ and zodiac charts showed doctors when to avoid treating each part of body



Put forward the idea of clinical _____

Focused on natural causes

Born in 460BC in Ancient Greece

Hippocrates

Theory of the Four _____

- Black Bile
- Yellow Bile
- _____
- Phlegm

Patient was ill if humours out of balance - to be cured must restore balance

MEDICINE IN BRITAIN c1250- c1500



Doctor in Ancient Rome

Built upon Hippocrates' Theory of the Four Humours

Theory of _____

Patient must be treated with something opposite to restore balance

Galen

Not allowed to _____

humans so difficult to disprove him

Very influential ideas as supported by _____

Herbal Remedies
Many remedies did actually help the sick, such as honey and plantain used in cuts which help fight _____



- ### The Black Death
- Reached England in 1348
 - Spread via rats' fleas, however no one knew this
 - Believed to be a punishment from _____, so people would practice self-flagellation
 - Some thought it had an astronomical cause
 - Others thought the cause was _____ - bad air

Sufferers of the Black Death had:

- Fever
- Headache
- Vomiting
- _____

Disease developed very quickly



Black Death killed over **20 million people** in Europe, which was 1/3 of population



Medicine in Britain c1250-c1500

Quiz Questions

Take 5 minutes to study the Cheat Sheet on this topic, then see how many questions you can get right without looking!



1. Hippocrates' Four Humours were....

2. What fraction of Europe's population were killed by the black death?

3. What theory did Galen propose, building on Hippocrates ideas?

4. When did the black Death reach England?

5. What was the belief that disease spread through bad air?

6. What kind of surgeons were untrained and carried out amputations, as well as cutting hair?

7. What did apothecaries sell?

8. What was the practice of getting patients to swallow herbs and fat to make them sick?

9. Who ran hospitals in c1250-c1500?

10. Give one symptom of the black death:

/10

- Herbal remedies were still popular, many were written in a book called _____
- Healers had more access to travel to access ingredients such as rhubarb and tobacco from Asia and America
- Hospitals were run by monasteries so closed when _____ dissolved them in the 1530s
- Hospitals were then run by physicians rather than monks and focused on _____

Royal Society
 Founded in _____ and sponsored scientists to study physics, astronomy, botany and medicine

Printing Press invented in c1439 - scientists could _____ their discoveries

- Paracelsus - Swiss doctor in early 1500s
- Criticised Theory of Four Humours and argued illness was caused and should be treated by chemicals
- Ideas were rejected



Catholic Church forbade human dissection

A judge allowed Vesalius to dissect executed criminals

Vesalius

Vesalius used _____ to disprove Galen's theories e.g. that the jawbone was made of two bones as this was true for the animals he dissected

Demonstrated importance of anatomical knowledge

In 1543 Vesalius published 'The Fabric of the Human Body'



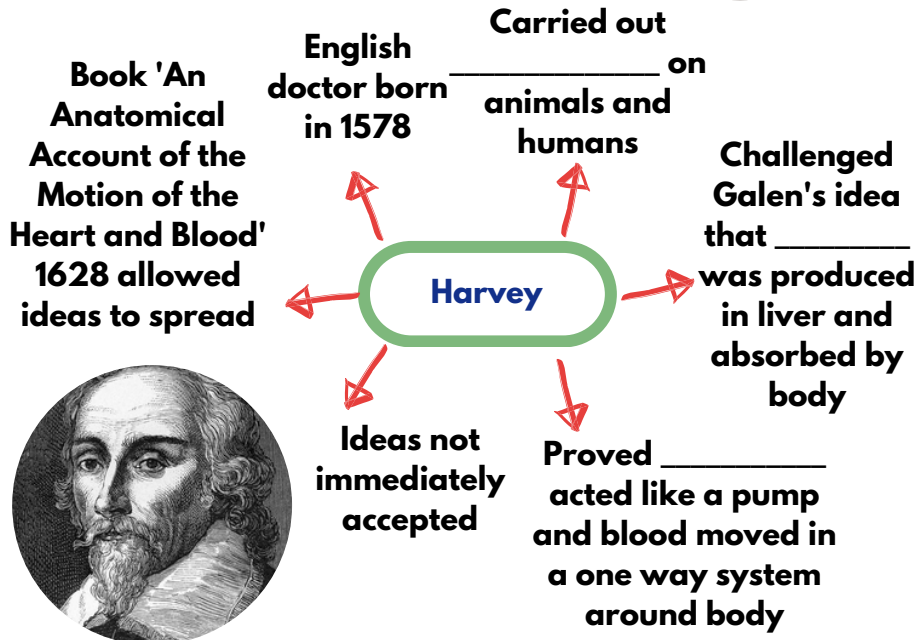
MEDICINE IN BRITAIN c1500- c1700

Thomas Sydenham - English doctor in late 1600s Believed observation was essential and wrote book *Observationes Medicae* which described how to _____ disease



Great Plague of 1665

- Cause of spread was still not understood
- Approx. 75,000 people died from the Great Plague in London
- Miasma still popular belief
- Stray animals were killed but this made plague spread faster as cats killed _____



Medicine in Britain c1500-c1700

Quiz Questions



Take 5 minutes to study the Cheat Sheet on this topic, then see how many questions you can get right without looking!

1. When was the Royal Society founded?

2. Who ran hospitals after 1530s?

3. Name one aspect of the heart that William Harvey proved.

4. Approximately how many people died from the Great Plague in London?

5. What was invented in c1439 that helped medicine develop?

6. What book did Vesalius publish in 1543?

7. True or False? Vesalius used animal dissection to disprove some of Galen's theories.

8. Which doctor wrote the book 'Observationes Medicae'?

9. When did Harvey publish his book 'An Anatomical Account of the Motion of the Heart and Blood'?

10. Which Swiss doctor argued that illness was caused by chemicals and should be treated with chemicals in 1500s?

/10

- In **1842** **Chadwick** compiled a report on _____ conditions of poor citizens
- Argued there should be organised drainage and refuse collection and clean _____
- **1848** outbreak of cholera pressured government to pass **Public Health Act** - but was not compulsory
- **Second Public Health Act 1875** - forced authorities to provide clean water and sewerage systems

Published _____
_____ **in 1861**
but spontaneous
generation belief still
popular



French chemist
and micro-
biologist in mid-
late 1800s



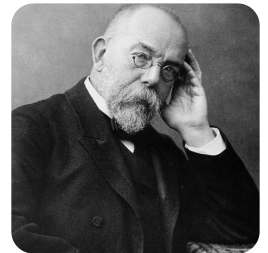
Louis Pasteur

Discovered that
bacteria could be
killed with heat -
pasteurisation

In 1879 discovered
exposing the germ that
caused chicken cholera
to air weakened it and
injecting this
weakened version
prevented chickens
catching the disease -
vaccine

Robert Koch

- German doctor and microbiologist in late 1800s
- Applied Germ Theory to prove how bacteria caused disease and identified bacteria that caused anthrax, TB and _____
- Found a way of isolating _____ making it easier for future scientists
- Discovered using dyes to stain microbes



In 1847 Simpson first used
_____ successfully
and was used for
childbirth and operations



Mary Seacole

- In **1854** she travelled to England and asked to be sent to _____ to care for soldiers but was refused
- Funded her own trip and established the **British Hotel** to provide care for soldiers
- In 1857 published 'The Wonderful Adventures of Mrs Seacole in Many Lands'

**MEDICINE IN
BRITAIN c1700-
c1900**

John Snow

Published 'On the Mode of
Communication of Cholera'
1849
Cholera outbreak in 1854 in
Soho
Discovered a _____
was cause of spread, when
pump was removed spread
reduced
However, could not explain
why cholera was
waterborne



Jenner heard _____
would not catch smallpox, but
a milder form of cowpox

Very
influential -
_____ had French
army
vaccinated
by 1805

Edward Jenner



In 1796, Jenner injected James
Phipps with pus from a
milkmaid's sores, then
smallpox - Phipps developed
cowpox but not smallpox

- Florence Nightingale**
- In **1854** during the Crimean War she went to Turkey and cared for wounded soldiers
 - She significantly **improved** _____ in the hospital e.g., washing bedding
 - She also suggested opening the windows to circulate air and better quality food
 - In 1859 wrote 'Notes on Nursing' which was a bestseller



Medicine in Britain c1700-c1900

Quiz Questions

Take 5 minutes to study the Cheat Sheet on this topic, then see how many questions you can get right without looking!



1. Who published Germ Theory in 1861?

2. Who applied Germ Theory and identified the bacteria that causes TB, anthrax and cholera?

3. What was successfully used as an anesthetic in 1847 for childbirth and operations?

4. Who first used the anesthetic mentioned above?

5. What did John Snow discover was the cause of a major cholera outbreak in 1854?

6. Which disease did Jenner create a vaccine for in 1796?

7. What was the name of the child Jenner successfully tested his vaccine on?

8. Name one improvement Florence Nightingale suggested in hospitals during the Crimean War:

9. What was the name of the establishment Mary Seacole opened to help soldiers during the Crimean War?

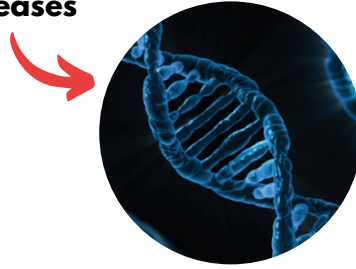
10. When was the Second Public Health Act that forced authorities to provide clean water and sewerage systems?



People better understood how _____ can cause disease: can cause disease:

- Smoking
- Poor diet
- Alcohol
- Pollution
- Stress

Franklin, Watson & Crick mapped out structure of _____ in 1953 - led to better understanding of genetic diseases



Magic Bullets - idea of killing germs inside body without harming _____ tissue

Ehrlich and Hata tested various substances that could be used to cure a _____ from **syphilis**. They found Salvarsan worked - this was the first magic bullet which went onto the market in 1910

Booth and Rowntree published reports to demonstrate need for a _____

Bevan (Minister of Health) launched creation of _____ in 1948

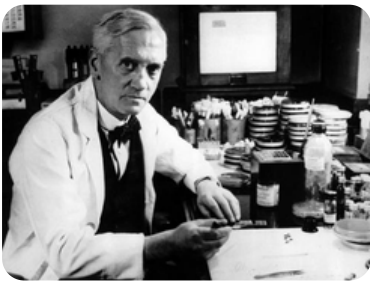


Introduced healthy living campaigns - Smokefree and Change4Life

Made healthcare _____ at the point of delivery

- **Blood Groups** discovered in 1901 by Landsteiner
- Röntgen discovered **X-rays** in 1895
- Hounsfield created **CAT scanners** in 1972
- **Self monitoring** - patients can measure own blood pressure and blood _____ levels with tech such as Apple Watches

MEDICINE IN BRITAIN c1900- PRESENT



Lung Cancer

- In 1950 the British Medical Research Council published research connecting lung cancer to _____
- Each lung cancer patient costs the NHS more than £9000
- In 2005 _____ advertising was completely banned
- In 2012 cigarettes were removed from display in shops



Alexander Fleming

In 1928 Fleming left a window open in his lab and bacteria had been killed by a _____ - penicillin

Margaret Hutchinson Rousseau

Developed technology to mass produce _____

Florey & Chain

They were given funding by government to produce penicillin for war. In 1941 USA entered war and gave \$80 million to fund research. By 1943 penicillin was mass produced



Current treatments for lung cancer:

- Radiotherapy
- Chemotherapy
- Transplant
- Immunotherapy



Medicine in Britain c1900-Present

Quiz Questions

Take 5 minutes to study the Cheat Sheet on this topic, then see how many questions you can get right without looking!



1. When was the NHS launched?

2. Who discovered blood groups in 1901?

3. Give one current treatment for lung cancer.

4. How much does each lung cancer patient cost the NHS?

5. What did Fleming accidentally discover after leaving a window open in his lab?

6. Name one individual who published a report demonstrating the need for a welfare state.

7. The first magic bullet helped to cure which disease?

8. Which individuals mapped out the structure of DNA in 1953?

9. Name one lifestyle aspect that is now understood to cause disease.

10. When did Röntgen discover X-rays?





X-Rays

Discovered by Röntgen in 1895

Used in _____
from 1896
Not fully understood

Aseptic Surgery
Lister used carbolic acid to kill infection from 1865
Required to wash self and surgical instruments _____

Medical Developments Before WWI

Blood Transfusions
First performed by Blundell in 1818
In 1894 Wright found chemicals which prevented it from _____
In 1901 Landsteiner discovered blood groups

Shelling → Destroyed roads

→ Used to be farmland so bacteria from fertiliser remained

Ambulance Wagons → Drawn by _____ but shaky so worsened injury

Base Hospitals → On the coast, had operating theatres



The Underground Hospital at Arras

- Opened in 1916
- Fully operational
- 700 spaced for stretchers and beds
- Operating theatre, electricity and water
- Abandoned when water supply was destroyed in Battle of Arras 1917



BRITISH SECTOR OF THE WESTERN FRONT 1914-18 P1

Chain of Evacuation

Stretcher Bearers - collected wounded from frontline

Regimental Aid Posts - gave immediate _____, aimed to get soldiers back to combat

Main Dressing Stations - dealt with more serious injuries in _____ and tents

Casualty _____ Stations - dealt with more critical injuries in old factories or schools

Base Hospitals - near the coast so wounded could travel back to _____, doctors specialised in specific injuries



Royal Army Medical Corps (RAMC)

- included _____, ambulance drivers and stretcher bearers

First Aid Nursing Yeomanry (FANY)

- sent _____ volunteers to work as nurses on Western Front



Trench Foot - caused by standing in cold water and _____ for long periods

Trench Fever - caused by _____

Shrapnel and Bullet Injuries - caused by explosions and combat

Medical Conditions

- caused by stress of warfare

Gas Injuries - caused burning _____, blisters & suffocation

Gas _____ - wounds infected by bacteria from soil

3 Ways of Dealing with Infection:

1. **Debridement** - removing dead or infected tissue
2. **Carrel-Dakin Method** - killed infection using sterilised _____ solution
3. _____ - removing infected limbs



Blood Banks - in 1915 **Lewisohn** found adding sodium nitrate to blood prevented it from clotting, and **Weil** discovered it would be stored for 2 days by refrigerating it

- ➔ **Thomas Splint** kept limbs and joints _____ during surgery - wounded soldiers often died from wounds in legs if not kept still as lost so much blood and infections
- ➔ **Improved survival rates** from _____ injuries from **20% to 82%**

- ➔ **Blood Transfusions** - used from 1915 on Western Front
- ➔ A British doctor in RAMC - **Keynes** - designed a portable kit so could be carried out near _____

Marie Curie - spent WWI building mobile _____ units to be used to detect shrapnel on the frontline

The Battle of Cambrai

- November - December 1917
- 1st successful, large-scale use of _____ (nearly 500)
- Advanced on German position
- Success limited by lack of infantry



BRITISH SECTOR OF THE WESTERN FRONT 1914-18 P2

1st Battle of Ypres

- Oct-Nov 1914
- Salient = 3 sides of the area surrounded by enemy
- British lost >50,000 troops

The 2nd Battle of Ypres

- April - May 1915
- British unprepared for use of _____ as a weapon
- Used urine-soaked cloths as gas masks
- British lost 59,000 troops

The Battle of Passchendaele (3rd Battle of Ypres)

- July - November 1917
- British aimed to break out of the Ypres Salient
- The ground was waterlogged due to bad weather; many men _____ in the mud
- 245,000 British casualties



The Battle of the Somme

- July - November 1916
- 20,000 British troops died on the 1st day of the battle
- >400,000 British soldiers died altogether
- British used the creeping barrage = launching artillery from the _____ just in front of advancing British troops

The Battle of the Arras

- April - May 1917
- With help from New Zealand, Britain dug a network of underground caves at Arras
- 24,000 British troops attacked from the tunnels
- Nearly 16,000 British and Canadian casualties



British Sector of the Western Front

Quiz Questions



Take 5 minutes to study the Cheat Sheets on this topic, then see how many questions you can get right without looking!

1. When did the Underground Hospital of Arras open?

2. What is the first step in the chain of evacuation?

3. What does RAMC stand for?

4. What was gas gangrene caused by?

5. Why were ambulance wagons problematic?

6. What was the Carrel-Dakin Method?

7. Who kept limbs and joints still in surgery which greatly increased survival rates of leg injuries?

8. What did soldiers use as masks when they did not have gas masks during the 2nd Battle of Ypres?

9. What could be added to blood to prevent it from clotting for blood banks?

10. Which scientist built mobile x-ray units to be used on the frontline?

