The British sector of the Western Front, 1914-18

**Topic 1: The British Sector of the Western Front**
- Outline of major events of World War One – The British Expeditionary Force sent to northern France to stop German advance through Belgium. Trench warfare began after the Battle of the Marne.
- 4 Key Places: Ypres (maintained control of the English ports, three battles, third battle muddy conditions hard to access casualties, 245,000 casualties), Arras (25,000 men could be stationed in tunnels, had functioning hospital), Cambria (landscape full of craters hard to transport men and bacteria in soil led to infections), and the Somme (led to 400,000 casualties, more than expected).
- The Trench System of the Western Front – the frontline trench depth 2.5 meters > the support trench 80 meters behind frontline > dugouts for men to take cover and rest > the reserve trench 100 meters behind support trench > the communication trench > at the very rear artillery replacements. Trenches dug in zigzag pattern, hard for stretcher-bearers to manoeuvre.
- The impact of the terrain on help for the wounded – terrain at Ypres and Cambrai meant it was hard to get to casualties and therefore more likely for person not to survive.

**Topic 2: Illnesses and wounds**
- Illnesses in the trenches: trench fever (flu like symptoms caused by contact with lice, affected half a million men), trench foot (caused by standing in muddy water, but could be prevented by wearing dry socks and rubbing whale oil into feet, although if gangrene appeared, only solution amputation), NYD.N. (shell shock – 80,000 cases, not well understood).
- Weapons of war: major weapons - rifles, machine guns, artillery, shrapnel (high-explosive shells and shrapnel were responsible for 58% of wounds) 60 % of injuries from these weapons were to arms and legs.
- The nature of wounds – bullets 39% wounds - take in fabric of uniform spreading infection. Steel helmets introduced to reduce head wounds by 80%.
- Infection – Soil contained the bacteria for both tetanus and gas gangrene, no cure for gas gangrene, could kill a person in a day.
- The impact of gas – Chlorine, Phosgene (suffocated victims) and mustard gas (internal/external blisters).

**Topic 3: Helping the wounded**
- The evacuation route- stretcher bearers, regimental aid posts (RAP) 200m from frontline in communication trench, field ambulance and dressing stations, casualty clearing stations (CCS) used triage system 24 CCS in Ypres alone, base hospitals for those in need of hospital treatment.
- Effectiveness of evacuations route – efficient system.
- Nurses and Doctors- roles and significance of RAMC (field ambulances and dressing stations) and FANY (drove ambulances, drove supplies, had a mobile bath unit and kept up morale).

**Topic 4: Medicine in the early 1900s**
- Infection and aseptic surgery – by 1900 most operations were carried out using aseptic surgery. Since 1861 germs were known and Joseph Lister had developed carbolic spray, Koch had proven use of steam to kill off germs. However, aseptic surgery was impossible in the CCS of the Western Front.
- X-rays – developed by Wilhelm Roentgen in 1895, may problems to start off i.e. took 90 minutes!
- The problems of blood loss – loss of blood results in shock. In 1901 Landsteiner discovered blood groups.

**Topic 5: Impact of Western Front on medicine**
- Treating wounds and infections – major problem was dealing with infection caused by gas gangrene. Three options, firstly wound excision or debridement (cutting away infected tissue), the Carrel-Dakin method (sterilised salt solution to the wound via a tube), if these failed then amputation.
- Thomas Splint – this was designed to stop joints moving and reduce blood loss and infection. Its
use from 1915 increased the survival rate for leg wounds from 20% to 82%.

- Mobile x-ray machines – used from the start of war to help identify accurately the location of shrapnel and bullets in body. Portable machines used at CCS. Some problems i.e. the tubes used in the machine were fragile and could overheat, therefore only be used for an hour then had to be left to cool down.

- Blood transfusions and the storage of blood – Lawrence Bruce Robertson used method of a syringe and tube to transfer the donor blood to patient. Geoffrey Keynes designed a portable blood transfusion kit and device to regulate flow of blood to prevent it clotting. Blood type O was identified as a universal blood type, reducing risk of being transfused with wrong blood group. In 1915 Richard Lewisohn discovered sodium citrate could be used to stop blood clotting. In 1916, Francis Rous and James Turner found adding citrate glucose solution could enable blood to be stored for up to four weeks. Stored blood was used in 1917 at the battle of Cambrai. Blood was now being stored at CCS.

- Plastic surgery – Harold Gillies devised new operations to deal with new wounds. Due to nature of operations and recovery time, plastic surgery was carried out in Britain, Queen’s Hospital Sidcup, Kent.

- Brain surgery – Harvey Cushing, an American neurosurgeon, used a magnet to remove metal fragments from the brain. He also used a local anaesthetic rather than a general anaesthetic as the latter caused brain to swell. Operations were carried out at CCS as this meant men could be operated on quickly.

### Key Terms I must know:

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<th>Radiology department: The hospital department where x-rays are carried out.</th>
<th>Universal blood group: This blood group can be used in a transfusion to a recipient with any other blood group.</th>
<th>Salient: An area of a battlefield that extends into enemy territory, surrounded by enemy therefore vulnerable.</th>
<th>FANY: First Aid Nursing Yeomanry. Voluntary organisation since 1907. Frontline support i.e. driving ambulances.</th>
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<td>‘Blighty’ wounds: A ‘Blighty’ wound, was a wound serious enough to get soldiers away from the fighting and back to Britain via the chain of evacuation.</td>
<td>Neurosurgery: Surgery carried out on the nervous system, especially the brain and spine.</td>
<td>Local anaesthetic: Keeping a patient awake during an operation, with the area being operated on numbed to prevent pain.</td>
<td>General anaesthetic: Putting a patient to sleep during an operation.</td>
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RAMC: Royal Army Medical Corps. This branch of the army was responsible for medical care and was formally founded in 1898.