The RAMC was the branch of the army responsible for medical care founded in 1898. One of the most important priorities was to have an efficient system of communication to a safe area where they could be treated. This was known as a *chain of evacuation*. There were four main stages.

1. **Regimental Aid Posts (RAP)**
   Gave immediate first aid and return soldiers to fight as soon as possible. They were usually within 200m of the front line in a communications trench. They were staffed by a medical officer and a few stretcher bearers. Dealt with minor injuries.

2. **Dressing stations (ADS and MDS)**
   There should be an advanced station (ADS) within 400m of the RAP and a MAIN dressing station about half a mile away. They were often in abandoned buildings, dug outs or bunkers as this gave protection from enemy shelling. They were staffed by 10 medical officers and stretcher bearers of the RAMC. From 1915 there were nurses there too. Men could either walk there or be carried. The Field Ambulance unit could deal with 150 men but often in battles this was much higher.

3. **Casualty Clearing stations (CCS)**
   Located far enough away from the front line to provide safety but close enough for the ambulance wagons. The CCS closest to the front line specialised in the most critical injuries. They were often close to railway lines to enable the next stage of evacuation to take place. They developed a triage system for assessing the wounded:
   - The walking wounded - Patch them up and return them
   - Those in need of hospital treatment - move to a Base Hospital
   - Make those who will not survive comfortable.

4. **Base Hospitals**
   These were the furthest back from the front line. They were manned by troops of the Royal Army Medical Corps and were generally located near the coast. They needed to be close to a railway line, in order for casualties to arrive (although some also came by canal barge). They also needed to be near a port where men could be evacuated for longer-term treatment in Britain. There were two types of Base Hospital, known as Stationary and General Hospitals. They were large facilities, often centred on some pre-war buildings such as

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**New Techniques**

1. **Amputation**
   The only way to deal with the spread of infection was through amputation of limbs. By 1918 over 240,000 men had lost limbs. This stopped infection spreading.

2. **Wound excision or debridement**
   This was cutting away dead, damaged and infected tissue from around the wound. This again needed to be done as quickly as possible to prevent infection spreading. After the excision the wound needed to be closed with stitches.

3. **The Thomas Splint**
   In 1914/1915 men with a gunshot or shrapnel wound in the leg would have a very small chance of survival (20%). It was worse when the bone had pierced the skin. If the thigh bone was fractured, it would usually cause major bleeding into the thigh. The splint that was used to secure the leg that did not work. This increased survival rates from this type of wound from 20-80%.

4. **The Correl-Dakin method**
   Antiseptics such as carbolic lotion were inefficient when treating gas gangrene. By 1917 the Correl-Dakin method was the most effective solution. This involved putting sterilised salt solution in a wound through a tube. The solution was only effective for 6 hours so had to be done as soon as possible.

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- **X-rays**
  - Remove shell fragments to prevent infection. Could not detect all objects.
  - Tubes in X-ray were fragile and over heated which caused long waits for the injured soldiers.
  - 6 mobile X-ray units in British sector.

- **Blood Transfusions**
  - Used from 1915 in base hospitals and then 1917 used in CCS.
  - Blood bank at Cambrai following discovery that adding sodium citrate to blood prevented clotting.

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**Plastic Surgery**
A New Zealand doctor carried out most of the research regarding plastic surgery, he was called Harold Gillies. He was an ear, nose and throat surgeon. He was sent to the front in 1914 and began working with Charles Voisard in October 1914. They became interested in facial disfigurement. He was interested in trying to discover ways of replacing and restoring parts of the face that had been destroyed. He devised different operations when new injuries appeared. These detailed operations could not be carried out in France due to the horrific conditions of life on the frontline. Queen Hospital in Kent, Britain was the main hospital for this type of treatment after 1917. Gillies helped create the design for the hospital as it matched his needs.

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**Brain Surgery**
Injuries to the brain were almost always fatal at the start of the war.
- Very few doctors who had experience of neurosurgery before the war.
- Infection in the head was just as common as any other part of the body.
- Difficulties in moving men through the chain of evacuation as they were often unconscious.

Despite not many doctors having experience in these kinds of injuries, observations of different patients quickly led to improvements in treatments.

Harvey Cushing was a key person who helped new techniques in brain surgery develop. He experimented with use of magnets to remove metal fragments from the brain. He also used local anaesthetic rather than general anaesthetic. General anaesthetic often caused the brain to swell. He operated on 45 patients in 1917 and 71% survived, compared to the usual survival rate of 50%.

He concluded:
- It was too dangerous to move men too quickly after an operation.
- Man who were operated on quickly were more likely to survive.
- Injuries that looked minor may be hiding more severe injuries.

**Exam Questions**

Describe two features of ... (4 Marks)

How would you follow up Source C to find information about ...? (4 Marks)

How useful are sources ___ and ___ for an enquiry into ...? (8 Marks)
British at first advanced 8 miles but by the time the advance ended there were men hiding in the newly built tunnels near the German trenches attacked. The maintained electric lights, railways and a fully functioning hospital.

The German dugouts were well made and heavily defended. The German soldiers were able to hide in their underground bunkers until the infantry attack started. Soon, however, the weather changed and the ground became waterlogged, men even drowned, advancing 7 miles in total at a cost of 245,000 casualties.

The third battle of Ypres left craters everywhere on the landscape which destroyed many roads. It became much more difficult to get the wounded away from the front line. Also as the land had previously used for farming the soil was full of bacteria from fertiliser. This could get inside wounds and lead to infection.

The week-long artillery bombardment actually warned the enemy that an attack was coming. This gave them plenty of time to prepare for it. The German dugouts were well made and heavily defended. The German soldiers were able to hide in their underground bunkers until the infantry attack started. The bombardment had churned up the ground badly making the British advance more difficult. Many British artillery shells failed to explode, so some parts of the German defences had not even been touched. When the men went over-the-top at 7:30 am on 1st July, wave after wave were simply mown down by enemy fire.

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