

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

### FANY: FIRST AID NURSING YEOMANRY

FANY was founded in 1907, the first women's voluntary organisation to send volunteers to the Western Front. It provided front line support for medical services e.g. driving ambulances and giving emergency first aid



### THE ROLE OF THE FANY

- The first six FANY's arrived in France on 27 October 1914, however the British would not make use of them so they devoted their energies to helping French and Belgian troops.
- Finally in January 1916, the British army decided to allow FANYs to drive ambulances, replacing the British Red Cross male ambulance drivers.
- The FANY drivers transported wounded troops by ambulance in the Calais region
- There were never more than 450 FANYs in France, but they did open the way for other women in other organisations to participate in the front line.
- They drove supplies such as food and clothes to the front line
- They had a mobile bath unit
- They set up cinemas to help the morale

### 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 Carrel-Dakin method

Antiseptics such as carbolic lotion were inefficient when treating gas gangrene. By 1917 the Carrel-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.

X-rays	Blood Transfusions
<ul style="list-style-type: none"> <li>◆ Remove shell fragments to prevent infection. Could not detect all objects.</li> <li>◆ Tubes in x-ray were fragile and over heated which caused long waits for the injured soldiers.</li> <li>◆ 6 mobile xx-ray units in British sector.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Used from 1915 in base hospitals and then 1917 used in CCS.</li> <li>◆ Blood bank at Cambrai following discovery that adding sodium citrate to blood prevented clotting.</li> </ul>

### Plastic and Brain Surgery

#### 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 kind 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.
- Men who were operated on quickly were more likely to survive.
- Injuries that looked minor may be hiding more severe injuries.

#### Plastic Surgery

A new Zealand Doctor carried out most of the research regarding plastic surgery, he was called Harold Giles. He was an ear, nose and throat surgeon. He was sent to the front in 1914 and began working with Charles Valadier 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 so it matched his needs.



### 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)





### YPRES 1914

Early in the war the British had moved into Ypres in Belgium to prevent Germany reaching the sea. However Germany attack their positions in the autumn which lasted almost a month. The British lost 50,000 men but held on to Ypres keeping control of the ports of the English Channel.

Offensive mining was used by the British to retake Hill 60 (a mam made Hill to the south east of Ypres). Tunnels were dug and the mines placed and exploded so the top of Hill 60 was blown off and the British gained the strategic advantage

### YPRES 1915 SECOND BATTLE

This was the first time Germany used chlorine gas on the Western Front. The British lost 59,000 men. By the end of the battle the Germans had advanced two miles closer to Ypres.

### YPRES 1917 THIRD BATTLE

The aim of this battle was to remove the German advantage of having the higher ground. They launched their main attack in July and advanced 2 miles of the first day. 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 SOMME

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.

### ARRAS

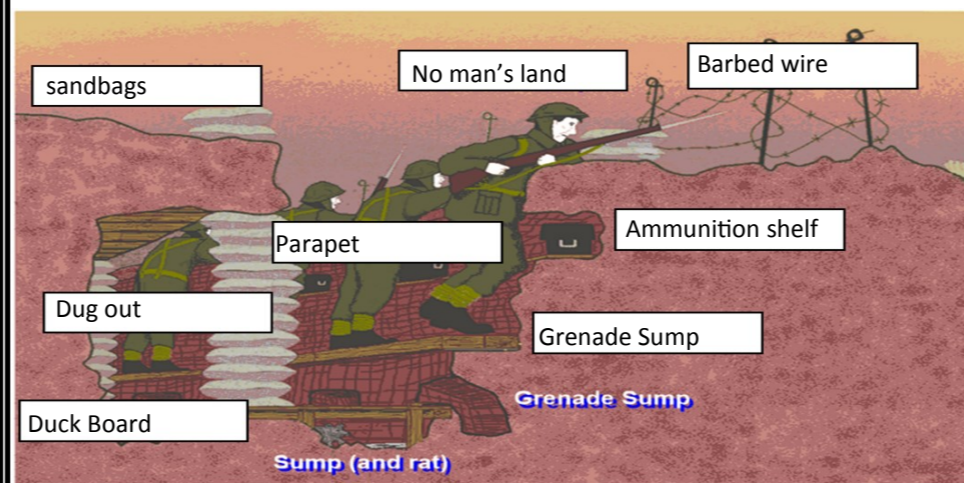
The area near Arras already contained tunnels and the British decided to link these creating 2.5 mile soft tunnels which could hold 25000 men. They contained electric lights, railways and a fully functioning hospital. In 1917 24,000 men hiding in the newly built tunnels near the German trenches attacked. The British at first advanced 8 miles but by the time the advance ended there were 160,000 casualties. Little further progress had been made.

### CAMBRAI

October 1917. Tactics were changed so the Germans had less warning of an attack. 500 tanks were used in battle which could easily cut through barbed wire. Effective use of machine guns.

### Trench System

Britain had declared war on Germany on 4<sup>th</sup> August 1914. By the end of this year much of Belgium and northern France had been occupied by Germans. Trenches were built as defence from the enemy. However attempts were made to advance in to trenches and seize enemy trenches. A line of trenches was built from the English channel in the north, to Switzerland in the south. Later in 1915 a more complex system begun to develop and trenches were about 2.5m deep.



### Why was it difficult to transport injured soldiers on the front line?

#### Horse- drawn

Originally horse drawn carriages were used but they could not cope with the amount of injuries and deaths. It was also not very secure and due to men being shaken about the injuries got worse. Many soldiers were either left to die or taken prisoner by the Germans.



#### Train, barge and ship ambulances

Might be transported to the base hospitals on the French coast. At the start of the war the RAMC actually used French good trains rather than specially designed ones. The first ambulance train came into use in November 1914. Stretchers could fit down the side of the carriage. Hundreds of soldiers were moved on these trains and they were criticised for damaging the war effort as too many were moving around France and Belgium. This led to canals being used, this meant that sometimes they missed the base hospitals and went straight to the ships home.



#### Motor Ambulances

October 1914 the first motor ambulances reached the front line. However the worse the terrain the less effective motor ambulances were. Therefore horses continued to be used, sometimes up to 6 in horrendous conditions.



### INJURIES

*The troops on the Western front were given Gas masks from 1915.*

#### Mustard Gas

1917

Odourless gas that worked within 12 hours. Caused internal and external blisters and could pass through clothing to burn skin.



#### Chlorine

1915. Led to death by suffocation. Before gas masks the soldiers soak cotton pads in urine and pressed them to their faces to stop gas entering their lungs.

#### Phosgene

1915 in battle of Ypres. Faster acting than chlorine, killing an exposed person within 2 days.

#### Shell shock

Symptoms included tiredness, headaches, nightmares, loss of speech, uncontrollable shaking and complete mental breakdown. This condition was not understood at the time. However some soldiers who experienced shell shock were accused of cowardice. Many were punished for this and some even shot.

#### Trench Fever

Flu like symptoms with high temperature, headache and aching muscles. This affected an estimated half a million men on the Western front. By 1918 the cause of this condition had been linked to contact with lice. Delousing stations were set up.

#### Trench Foot

This was an infection of the feet caused by cold, wet and insanitary conditions. In the trenches men stood for hours on end in waterlogged trenches without being able to remove wet socks or boots. The feet would gradually go numb and the skin would turn red or blue. If untreated, trench foot could turn gangrenous and result in amputation.

#### Shrapnel, explosive and wound infection

Metal would penetrate the body when men were injured by shrapnel or bullets, taking the fabric of the uniform with it into the skin. As the ground in the trench region had been fertilized it contained bacteria for both tetanus and gas gangrene. Gas gangrene infection is an infection that produced gas in gangrenous wounds. The impact of tetanus was reduced by tetanus injections from end of 1914. However there was no cure for gas gangrene. The gas gangrene spread through the body quickly and could kill a person within a day. At the start of the war the head wear worn by soldiers was soft. The Brodie helmet was introduced in 1915 which was made of metal and had a strap on to prevent it falling off in an explosion. It was estimated that it prevented fatal head wounds by 80%, this helmet was then distributed to all soldiers fighting on the western front.

