



Medicine Through Time: The British Sector of the Western Front: 1914-1918

Name:



Learning Outcomes

1. How developments in medicine in the early 20th century contributed to treatment of soldiers
2. Understanding the types of injuries that were experienced by soldiers in the British sector
3. Understanding of the different developments in surgery and medicine used to treat soldiers



Knowledge Organiser - Topic : The British Sector on the Western Front, 1914-18

Timeline

1	Oct – Nov 1914	First Battle of Ypres – the British stopped the Germans from capturing the port of Calais.
2	Apr – May 1915	Second Battle of Ypres – A German attack using Chlorine gas for the first time.
3	July – Nov 1916	Battle of the Somme – Major attack led French and British to move German troops from Verdun.
4	Apr – May 1916	Battle of Arras – large scale Allied attack. Very high casualties.
5	Jul – Nov 1917	Third Battle of Ypres – Aim to capture Passchendaele ridge near Ypres. The ground turned to mud.
6	Nov-Dec 1917	Battle of Cambrai – first use of a large number of tanks by the British. 40,000 British casualties.
7	Spring 1918	The German Spring Offensive – Large scale German attack to bring the war to an end before the Americans arrived.
8	Summer – Autumn 1918	The final months – the Allied army, reinforced by the fresh US troops broke through German lines.
9	11 Nov 1918	Germany surrendered and the war ended.

Types of Sources

10	National Army records for individual soldiers	14	Photographs
11	National newspaper reports	15	Hospital records
12	Government reports on aspects of war	16	Army statistics
13	Medical articles by doctors or nurses who worked in the war	17	Personal accounts of medical treatments by soldiers, doctors, nurses or others involved.

Key Words/Terms

18	Terrain	The type of ground – was it hilly, muddy, flat, easy to walk and run on?
19	Front line Trench	The firing line –the trench nearest the enemy.
20	Communication Trench	Linked the firing line with the command support and reserve trench.
21	No Man's Land	Area between the enemy front line trenches where the fighting took place.
22	Trench Fever	Spread by lice and caused headaches, shivering and pain in joints. Lasted 5 days.
23	Trench Foot	From standing in waterlogged trenches, feet became numb and swollen. Some cases became gangrenous and needed amputation.
24	NYD.N.	Army code for shell shock.
25	Shrapnel	Fragments of metal or lead designed to cause maximum injuries.
26	Artillery	Heavy fire causing half of all casualties.
27	Steel Helmets	Introduced to British troops by autumn 1915 & widely available by Summer 1916 to reduce head wounds.
28	Gas	Weapon causing blindness, loss of taste and smell and coughing.
29	Evacuation Route	How injured soldiers accessed medical treatment from front line fighting. Stretcher bearers, Regimental Aid Post (RAP), Field Ambulance and Dressing Station, Casualty Clearing Station (CCS) and Base Hospital.
30	Thomas Splint	A splint to help fractured bones heal in the leg - 1916
31	Plastic Surgery	Improved during WW1, led by Harold Gillies, who opened a specialist hospital in Kent in 1917.

4 Mark Source Follow Up Question Guide

Having done the source utility question, this question is just picking out something you find interesting and want to find out more about from the source

This is the layout of the question
1 mark per line

To explain, lets use this example

How would you follow up Source B to find out more about the problems the medical services faced transporting injured soldiers?

Detail in the source I would follow up

Question I would ask

What type of source could I use?

How might this help answer my question?

Source B: An extract from an article in the Journal of the Royal Army Medical Corps, 1915.

Admirable as was the organisation of the large base hospitals, the transport of the wounded from the fighting line seems to have been very badly managed during the advance of the Germans through Belgium and northern France. The supply of motor ambulances proved totally inadequate and the slightly wounded had to shift for themselves and squeeze into goods trains.

Step 1: Link the detail to the enquiry

Start by identifying the focus of the enquiry – Use the question itself to help you!

For this question, the problems the medical service faced transporting injured soldiers.

Read the source and identify a detail (quote) from it to follow up

Detail in Source B that I would follow up: *the supply of motor ambulances was inadequate*

Step 2: Link the question to the detail

The question you choose must be linked to the detail you are following up from the source.

If we were following up the detail about motor ambulances we could use:

Question I would ask: *'Why was there a lack of motor ambulances on the Western Front?'*

Step 3: Link the type of source to the question

You now need to choose a type of source that would be useful for following up that question. Look at the list in the box opposite.

Make sure you choose a source that would help with the question and be as specific about the type of source
e.g. Hospital records from Arras Underground Hospitia

What type of source I could use: *Government records from 1915 would provide a useful insight into the problems faced by the medical service in providing adequate numbers of motor ambulances.*

Different types of sources:

- National army records for individual army soldiers
- National newspaper reports
- Government reports on aspects of the war
- Medical articles by doctors and nurses who took part in the war.
- Personal accounts of medical treatments by soldiers, doctors, nurses or others who were involved
- Photographs
- Hospital records
- Army statistics

Step 4: Link this with your own knowledge

Explain the advantages of using this type of source to your enquiry.

How this might help answer my question: *Government records were produced for use within the government, meaning they provided an accurate picture of the situation on the Western Front. The reports were not produced for propaganda purposes unlike newspapers*

Example Answer: How could you follow up Source A to find out more about the system for dealing with injured soldiers on the Western Front?

Study Source A

Source A: From the writings of Henry Buckle, a soldier on the Western Front. He wrote a diary while he was in the trenches and typed it up after the war. Here he describes his situation after being injured in 1915.

I am lying in the barn with a damaged leg, the result of being too near a bursting shell. My leg is not bleeding but it got sort of buried in the trench and twisted up. My sergeant was also injured. Our stretcher people were busy so I told them we could manage to get back by ourselves. It took us all night to get back here to the barn, with lots of sit-downs. The RAMC staff keep coming in but don't seem able to mend me up. The Medical Officer has been in and says I shall have to go to a Field Hospital for a week.

Detail in the source I would follow up

"The RAMC staff keep coming in, but don't seem to be able to mend me up."

Question I would ask

How quickly were injured soldiers treated?

What type of source could I use?

Army Medical records, from a dressing station

How might this help answer my question?

It might give the information on how many soldiers were in the barn, and How they were treated, and how bad their injuries were and how long they had to wait.

4 Mark Source Follow Up Question Guide

These source could be available to historians for an enquiry, complete the table like the example given.

Type of Source	Useful for learning about...	Advantages
National Army records for specific soldiers		
National newspaper Reports		
Government reports on the war		
Medical articles by doctors and nurses from the war		
Personal accounts by soldiers, doctors, nurses		
Photographs		
Hospital Records	<ul style="list-style-type: none"> • <i>Telling us about conditions in front line hospitals</i> • <i>Specific information on the treatment of soldiers</i> • <i>The number of casualties during one battle</i> 	<ul style="list-style-type: none"> • <i>Official records, accurate and reliable</i> • <i>Not propaganda</i>
Army Statistics		

4 Mark Features Up Question Guide

Question 1 on this paper asks you to 'Describe two features of...'

There are 4 marks in total, 2 for each feature you describe. It is an easy question, simply identify the feature and describe it



- Do not spend more than five minutes on this question, or write too much!
- Make sure you read the question clearly and remain focused on it
- Features just mean the 'main characteristics', so what you can simply remember in detail
- Do not go into explanation, judgement or analysis

Example Answer

Example Answer

This is a sample 4/4 answer based on the question on the right.



Describe two features of the Trench System in the British Sector on the Western (4 Marks)

<p>Feature 1</p> <p>The Trench System contained the frontline trench, where attacks would be launched from and defend against, it was the most dangerous part of the trenches</p> <p>Feature 2</p> <p>The trench system also contained the support trench, this was 80m behind the frontline trench, troops would retreat here if under attack using the communication trenches</p>

- Identify**
Identifies the feature (1 mark)
- Description**
Describe the feature in detail (1 Mark)

8 Mark Source Utility Question Guide

This question asks you to analyse how useful two sources are in supporting an enquiry into a topic. You will need to discuss the content of the source, its provenance and use your own subject knowledge



So to get top marks (8/8) What should I do?

- One paragraph for each source
- Always focus on **WHY** the source is useful, especially at the end of each paragraph.
- Discuss how content of the sources are useful (use evidential quote/description) and compare to your knowledge
- Discuss how provenance of the source makes it useful
- You can include 1 sentence on why the source is not useful

Mark Scheme

AO3: Specific and relevant subject knowledge
 AO3: Judgement made on how useful source is, focussing on the provenance & content
 AO3: Use of the content of the source

Level	Mark
1	1-2
2	3-5
3	6-8

- A simple judgement on how useful the source are
- Basics comprehension of the source using a quote or paraphrase used
- Limited subject knowledge is used which links to the source.
- A judgement on how useful the sources are is made, using what the sources tells us (content) **and/or** the provenance (nature, origin, purpose)
- Uses evidence from source (quotes/description) in answer
- Used clear subject subject knowledge throughout to support comments on the usefulness of the content of the sources and/or their provenance.
- Clear judgement on how useful the sources are, using both the content **AND** the provenance of the source to make a comment.
- The sources content is analysed to argue about how useful the source is
- Specific knowledge is used throughout to back up how useful sources are for both content and provenance

Provenance

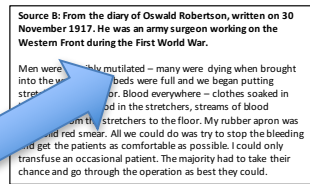
To find out how useful a source is, we look at its provenance

Provenance = who wrote or created the source, when, and for what purpose

We can use **NOP** to help use look at a sources provenance

- **N – Nature;** What type of source is it? (e.g. photo, diary)
- **O – Origin:** When was the source produced and by whom?
- **P – Purpose:** Why was the source made? What for? Does it have a message?

To find the provenance look at the **CAPTION** of the source



Source A: From an account by Reverend Leonard Pearson, who was the army chaplain at Casualty Clearing Station 44 during the Battle of the Somme (1916).

I spent most of my time giving anaesthetics. I had no right to be doing this because I had no medical qualifications, but we were simply so rushed. We couldn't get the wounded into the hospital quickly enough and the journey from the battlefield was simply terrible for these poor lads. It was a question of operating as quickly as possible. If they had to wait their turn in the normal way, until the surgeon was able to perform the operation with a doctor giving the anaesthetic, it would have been too late for many of them. As it was, many died. We all simply had to help and do anything that was needed.

Source B: From the diary of Oswald Robertson, written on 30 November 1917. He was an army surgeon working on the Western Front during the First World War.

Men were horribly mutilated – many were dying when brought into the ward. All the beds were full and we began putting stretchers on the floor. Blood everywhere – clothes soaked in blood, pools of blood in the stretchers, streams of blood dropping from the stretchers to the floor. My rubber apron was one solid red smear. All we could do was try to stop the bleeding and get the patients as comfortable as possible. I could only transfuse an occasional patient. The majority had to take their chance and go through the operation as best they could.

Example Paragraph
 This is one paragraph of an 8/8 answer to the question on the right. The key parts have been identified.

How useful are Sources A and B for an enquiry into the problems involved in performing operations on the Western Front?
 Explain your answer, using Sources A and B and your own knowledge of the historical context. (8 marks)

Source B is particularly useful for an enquiry into the problems involved in performing operations on the Western Front as it is from Oswald Robertson, an important army doctor who created the first blood bank in 1917 using sodium nitrate to prevent blood from clotting. The source is also from November 1917, the month of the Battle of Cambrai which we know was part of the action in trench warfare. This battle also resulted in 45,000 casualties. Again we see how poor transportation worsened wounds as "men were horribly mutilated" and "dying when brought into the ward". This shows how taking too long to transport the wounded made the operations much more difficult. As it is from November horse drawn ambulance were probably used over motor ambulances that couldn't handle muddy terrains; these ambulances worsened hands through shaking operations also seem difficult as these were unseen wounds and blood loss seems nearly impossible to prevent – "blood everywhere, clothes...pools of blood in the stretchers". Robertson himself could only "transfuse an occasional patient" still knowing that transfusions hadn't been perfected and couldn't be done quickly or effectively. The source does not contain statistics which is a drawback but it is expected as it is a diary entry and overall, the source is very useful as it shows problems associated with blood loss that made performing operations harder.

- Utility**
Argues why the source is useful
- Content**
Discuss the content of the source and uses evidence
- Provenance**
Discuss the provenance of the source
- Knowledge**
Subject knowledge used

A reintroduction to sources

Lets have a practice looking at sources, complete the below 3 steps

1. Content: Annotate the source, what do you see, what can we learn from the source?



Source A: Trenches of the 11th Cheshire Regiment at the Somme, July 1916.

2. What do you already know about Trenches, does it support the 'message' of this source?

**2. Provenance: Look at the caption
What makes this source useful to historians?**

Nature

Origin

Purpose

The First World War: Western Front

Britain declared war on Germany on August 4th 1914 when Germany invaded France through Belgium. The British government sent the B.E.F (British Expeditionary Force) to northern France to try and stop the German advance. By the end of 1914, much of Belgium and northern France had been occupied by the Germans.

After the initial fighting, both the British and Germans pulled back their forces and this is when 'Trench Warfare' began as both the British and Germans pulled back their forces. It became a defensive war using trenches with some offensive attempts to capture the enemy trenches and land



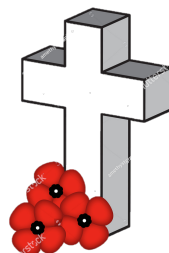
The British Sector

Between 1914 and 1918, most of the fighting done on the Western Front (France/Belgium) was trench warfare.

The British sector (in red) includes the strategic areas of Ypres, Arras, Albert and the River Somme and many of the largest battles in the war were fought in this sector.

The medical impact of WW1

- There were 2.7 million casualties in the British sector of the Western Front during the war
- 1/4 (700,000) of these casualties were not seen by medical services because they were killed/prisoners.
- The remaining 2 million were treated by medical services in France or back in England.
- Of those treated, 5.6% (150,000) died from their wounds.
- Therefore the vast majority of those treated survived their wounds and illnesses: a testament to the successes of the medical care during WW1 (of course, many of these might be killed later in fighting).



Timeline 1914 -1918

Key Events of the Western Front

Sept 1914: WW1 Begins

Oct 1914 Motor Ambulances sent to the front.

1915 Lawrence Robertson pioneers use of blood transfusions



1915 First gas masks introduced

1915 L. Robertson pioneers use of blood transfusions

1915 Richard Lewisohn stops blood clotting

1915 Richard Weil discovers how to store blood for 2 days

1916 Francis Rous and James Turner discover how to store blood for 4 weeks

Jul 1916 Battle of the Somme

Jul 1917 3rd Battle of Ypres

Oct 1917 Battle of Cambrai

1917 Transfusions widely used in CCS's

1918 Delousing Stations set up

Nov 1918: WW1 Ends

Oct 1914 1st Battle of Ypres



Apr 1915 2nd Battle of Ypres – 1st use of gas

Apr 1915 Battle of Hill 60

1915 Brodie Helmets introduced



Dec 1915 Thomas Splint taught to medical practitioners

Jan 1916 FANYs allowed to drive ambulances

1916 Tunnels dug at Arras

1917 Battle of Arras



1917 Carrel-Dakin method agreed as best method to stop infection

Aug 1917 Gillies opens Queen's Hospital for plastic surgery

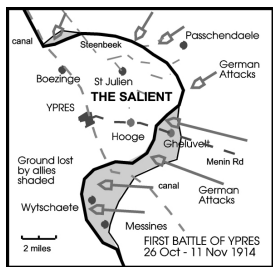


The Four Key British Battles in WW1

The Ypres Salient 1914-15



The 'Salient' was an area under British control surrounded by Germans on 3 sides. The Germans held the high ground, whilst the British were in the low, wetter areas.



The area surrounding the town of Ypres was the scene of two major battles. The First and Second Battle of Ypres as the Germans pushed to take Ypres and get to the Channel ports.

1914; The First Battle of Ypres

In autumn 1914, the Germans attacked the British positions around east and north east of Ypres. Britain kept Ypres but lost 50,000 troops

Hill 60: Mines

The Germans held 'Hill 60' south-east of Ypres which gave them the height advantage over the British. In April 1915, British soldiers mined underneath the hill and literally blew up the German defences so the British were able to capture it.

1915; The Second Battle of Ypres

Between April to May 1915 the second battle started. It was the **first time the Germans used Chlorine Gas** on the Western Front. British losses were 59,000 men and the Germans moved 2 miles closer to the town of Ypres.

The British finally pushed back the Germans in the rainy 1917 battle of Passchendaele. It was a costly victory, with 245,000 casualties.

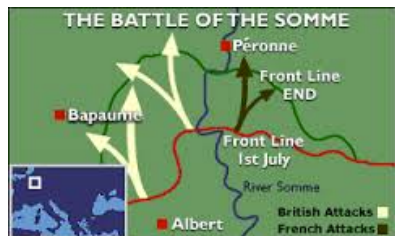
The Somme, 1916

Largest British attack in WW1 which lasted from July to November, 1916. It aimed to take ground from the Germans.

Huge casualties on both sides but especially for the British, with 57,000 casualties and 20,000 dead on first day alone.

The battle was significant for two reasons, which would help contribute to more casualties in the war:

- **First use of tanks** – Used but not effective yet.
- **Use of creeping barrage** – Artillery bombardment that moved towards the German trench as the British approached it.



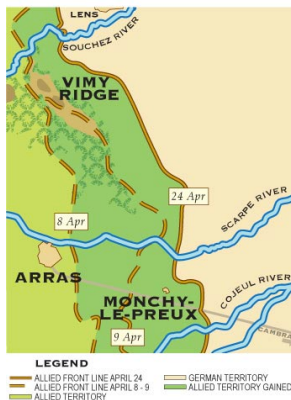
Arras, 1917

The allies (Britain, New Zealand & Canada) build over 2.5 miles of tunnels as shelter to prepare to attack the German line. It was a new tactic used by the British.

The tunnels could shelter 25,000 men, contained accommodation, a railway, water and electrical supplies and a hospital big enough for 700 beds.



THE BATTLE OF ARRAS 8 - 24 APRIL 1917



Initially the attack in April 1917 was a success as the British advanced 8 miles into enemy territory.

However, by May 1917 the attack had virtually stopped with the Allies suffering 160,000 casualties.

Cambrai, 1917

First large scale attack by British tanks to attack the German front line, over 450 tanks were used.



No artillery bombardment used, which surprised the Germans. The British attack succeeded at first, helped by tanks.



However, the Germans counter-attacked after the British attack stopped.

All land taken by the British was lost.

Tasks:

1. Read through the information.

2. Highlight all of the terrain (geography) issues you can see on the Western Front

3. List below the new types of warfare seen in these battles

4. List below the problems you can see the British army would face with medicine and it's soldiers

5. What did the British do at Arras?

6. What was unique about the Battle at Hill 60?

The Trench System



Remember!

Important!

Trenches were different from one place to another across the Western Front.

So not every soldiers had the same experience in the trenches.

Trenches were first dug by the British and French Armies in Northern France in 1914. The aim of trenches was to act as a barrier to stop the rapid advance of the German army.

At first trenches were temporary and built quickly using sandbags and shovels in existing ditches.



As the war went on, trenches became part of the 'stalemate', used to defend & launch attacks.

Trenches became more complex with bunkers, drainage, hospitals and accommodation.

Trenches also became more dangerous with machine guns, concrete bunkers and barbed wire used as defenses.

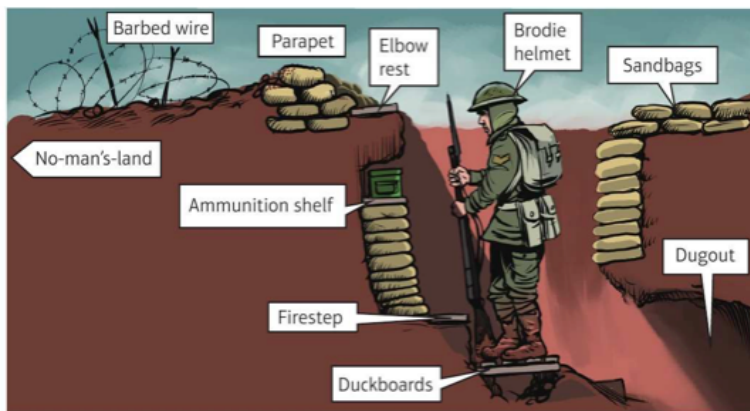
They would need to be constantly repaired due to the weather and constant bombing



With this evolved new weapons such as tanks, gas, machine guns, artillery and airplanes to fight on this terrain.

Cross Section of a trench

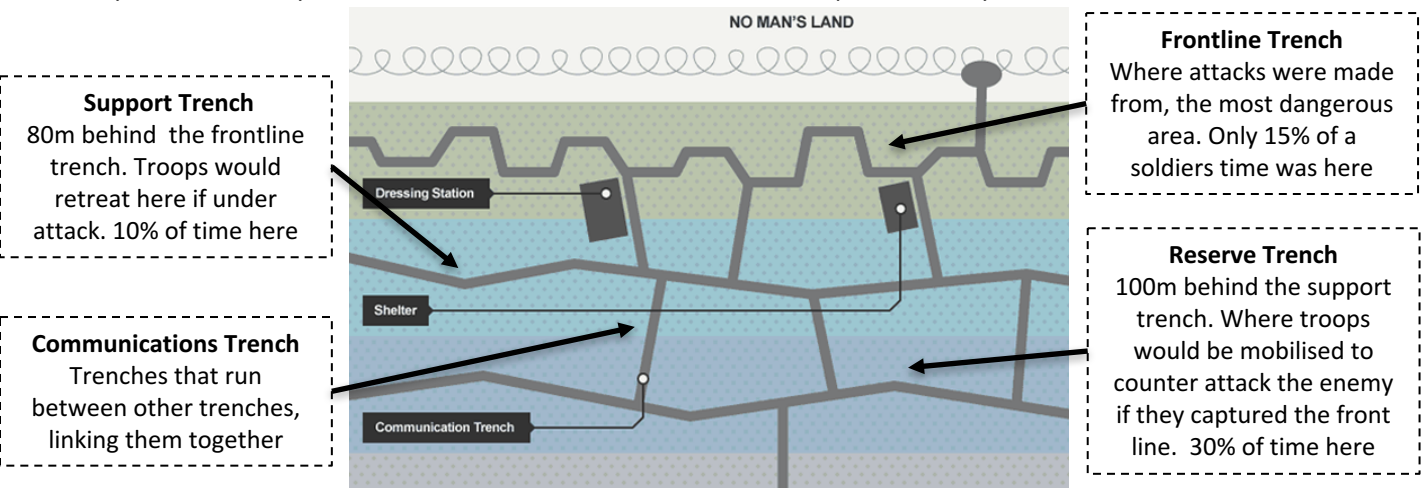
This is a typical British trench on the Western Front.



Key Features	
Firebay	Where troops did their shooting, they would be protected by sandbags
Duckboard	To prevent soldiers from standing in water. Possibly preventing Trench-foot
Firestep	Allows the soldiers to fire towards the other trench. Trenches were 2.5 m deep
Parapet	Low protective wall
Ammunition shelf	Area in which ammo was kept near the firestep
Dugout	Area dug into side of the trench where men could take protective cover

The Trench System

This shows the main features of the Trench System from the Western Front, they were often quite different but they were mostly laid out this way. No Mans Land was between the two trenches, punctuated by shell holes, death and destruction.



45% of a soldiers time was actually spent away from the trenches.

The Trench System

Advantages:

- Simple to make and cheap to build
- Easy to defend with few men using barbed wire, artillery, concrete bunkers and machine gun fire
- Provided some shelter/protection

Disadvantages:

- Hard to attack as had to cross **no mans land** (the area between the two trenches) which has been destroyed by shell fire and was a mass of mud and craters
- Trenches were very dirty and unhygienic as there was no running water or flushing toilets.
- In summer sewage, dead bodies & heat led to horrific smell and disease everywhere
- In winter bad weather led to flooding, frostbite (6000 cases in December 1914)



Conditions on the Western Front

The constant bombing and shelling often left the Western Front a landscape of craters, mud and water. All roads have also been destroyed, making it very difficult to cross and transport the wounded.



This caused issues in both transporting wounded men away from the front line and communication.

Key Problems on the Western Front

No Mans Land

The land was dangerous, wounded could only be collected at night.

The destroyed terrain was muddy, contained stagnant water filled craters with rotting corpses and unexploded munitions and chemicals waste.



Trench System

The trenches were clogged up with men and equipment, this made it hard for stretchers to manoeuvre whilst under fire.

The numbers of wounded also overwhelmed the medical system.

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

Transport Problems and Solutions

If you were injured you needed to be moved ASAP away from the trenches where they could provide better medical treatment and cover from shelling.

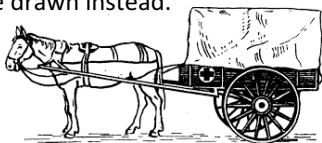
4 man stretcher bearers would carry the wounded away from the front line once they were in a stable condition. They carried the wounded during day and night, often under enemy fire.



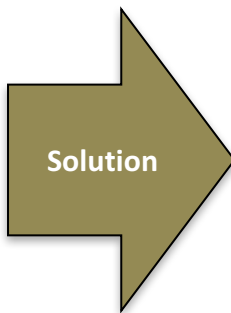
The faster a man could be evacuated and treated, the greater the chance of survival.

Horse- Drawn Ambulance Wagons

Originally the decision was made not to send motor ambulances to the frontline, they used horse drawn instead.



This was a mistake as horse drawn carriages could not cope with the number of wounded, whilst the shaky transport often made injuries worse. A lack of ambulance meant many men were left to die



Motor Ambulances

News of this reached Britain and The Times appealed for donations, as a result enough money for 512 ambulance was raised.

By October 1914 the first motor ambulances reached the front line sent by the Red Cross.



However, the worse the terrain the less effective motor ambulances were. Therefore horses continued to be used, sometimes up to 6 in horrendous conditions.

Describe two transport

Train, barge and ship ambulances

To reach the final destination, Base Hospitals on the French Coast, the **Royal Army Medical Corps (RAMC)** used specially designed ambulance trains from November 1914.



Stretchers could fit down the side of the carriage and some contained operating theatres, hundreds were evacuated. However, they were criticised for damaging the war effort as trains were blocking supply routes in France and Belgium.

As a result, canals were used. These were comfortable, slow but could often transport the wounded onto backs back to Britain.

The British Sector of the Western Front: Activities

The British Sector of the Western Front	Name the 4 parts of the Trench System	
	What was unique about the Battle at Hill 60?	
	What was the Ypres Salient?	
	<i>What was significant about the Battle of the Somme?</i>	
	Who were the RAMC?	
	Why did the land on the Western Front contribute to medical problems for injured soldiers?	
	What is a dugout?	
	Give three new weapons from WW1	
	What was unique about the Battle of Cambrai?	
	What was the problem with horse drawn ambulances?	

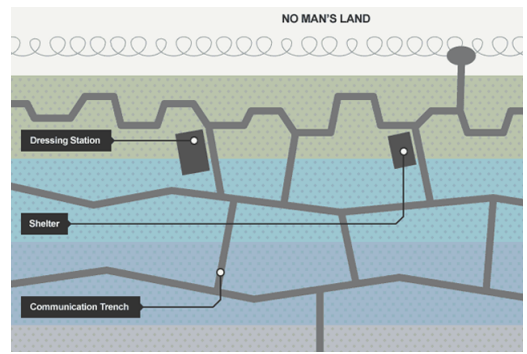
Key Battles of the First World War

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Label the Trench System Diagram



Identify in two colours the problems **facing soldiers** and **medical treatments** on the Western Front

4 Mark Question Practice



Answer the below two questions and then swap with your neighbour to mark

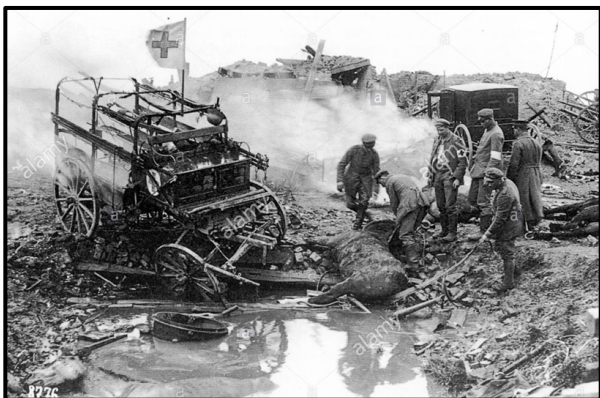
Describe two features of the Trench System in the British Sector on the Western Front (4 marks)

One key feature of _____ was _____

Another key feature of _____ was _____

Mark ____/4 Feedback:

How would you follow up the below source to find information about horse-drawn ambulances (4 Marks)



Horse drawn Ambulance hit by a shell during First World War

Detail in the source I would follow up

Question I would ask

What type of source could I use?

How might this help answer my question?

CREATE YOUR OWN

Create your own 4 mark features questions based off what we have studied in the last few lessons and then swap with your neighbour to answer, then mark it!

Describe two features of.....

One key feature of _____ was _____

Another key feature of _____ was _____

Mark ____/4 Feedback:

The British Sector of the Western Front: Exam Question

How useful are Sources A and B for an enquiry into the impact of the terrain on the transport of the wounded on the Western Front

Explain your answer, using Sources A and B and your own knowledge of the historical context.
(8 marks)

Source A: No Mans Land on the Western Front, 1917



Source B. From the recorded memories of William Easton, East Anglian Field Ambulance. He was eighteen years old in 1916. Here he described conditions near Ypres in 1917.

Up at Ypres we used to go up the line and we'd be waist deep in mud. We were carrying the wounded down near a place called Hooge, where had been a terrible amount of fighting. One trip down a trench in those conditions and you would all be all in exhausted. If you got two or three wounded men down in a day, that was all you could expect to do. We had to carry men in fours there and we had to be very careful because you could do more damage to a man than the shell if you jolted him too much or he fell off the stretcher. To make carrying easier we had slings which we put round our shoulders and over the stretcher's handles

Source A is useful because it suggest that the shell holes throughout No Man's Land caused an obstacle to the stretcher bearers who were collecting the dead and wounded. This was the case because stretcher bearers would often go into No Man's Land at night or during a break in the fighting. At these time it would have been difficult for them to get to the shell holes. The usefulness of Source A is further enhanced by its provenance. It is a photograph taken in 1917 and so it shows exactly what No Man's Land would have looked like at this point in time al could not have been altered. However, a historian must be careful because it may not be typical of No Man's Land throughout the Western Front and may not have looked the game at all locations along the line of the trenches.

Tasks:

- 1. Read the Source A paragraph**
- 2. Using three highlighters, identify the following**
 - Use of source
 - Use of own knowledge
 - Discussion of provenance
- 3. Complete the answer for Source B**

Source B is useful as it shows...

I know that

The provenance of the source is useful as....

Medical Problems on the Western Front.

Trench Foot

Trench foot was a major problem caused by standing in waterlogged trenches with no change of boots or socks. In the first stage, the feet would swell, go numb and the skin would turn red or blue. The condition could get worse quickly, leading to gangrene and amputation of limbs!



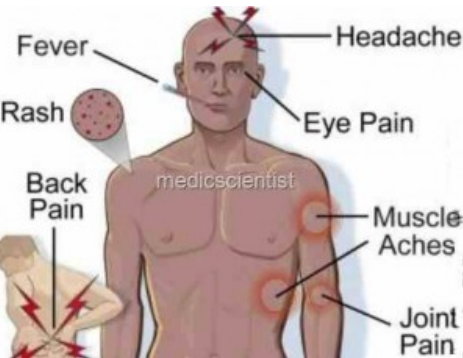
In the cold, wet winter of 1914-15 cases of Trench Foot were serious. The 27th Division of the British army experienced 12,000 cases of trench foot.

Attempted Solutions


To prevent the impact of trench foot, medical officers ordered soldiers should carry 3 pairs of socks and change them twice a day. They were also encouraged to rub whale oil into their feet.



Attempts were made to pump out trenches to reduce waterlogging and add duckboards, but constantly bombing made this hard



Trench Fever (PLO)

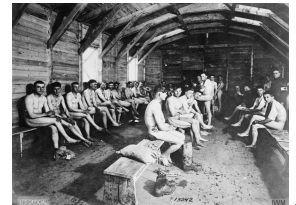
Flu like symptoms with high temperature, headache and aching muscles which was spread by lice.  Men could be ill for up to a month

Estimated half a million men on the Western front were affected by Trench Fever.

Attempted Solutions

Delousing stations were set up on the front; clothes were disinfected, men were bathed and sprayed with chemicals to prevent lice.

As a result of this, there was a decline in the numbers experiencing the condition.



Shell Shock

Symptoms included tiredness, headaches, nightmares, loss of speech, uncontrollable shaking and complete mental breakdown. It is estimated 80,000 British troops experienced shellshock



Called NYD,N (Not Yet Diagnosed, Nervous) as a code by the army for shellshock.

Attempted Solutions

This condition was not understood at the time, some soldiers who experienced shell shock were accused of cowardice and any were punished, some even shot.

New Wounds

The First World War introduced a wide range of wounds for medical staff to attend to. For example, high explosive shells and shrapnel (fragments of metal) were responsible for 58% of wounds whilst bullets were responsible for another 39%

60% of shrapnel wounds were to the arms and legs, a common treatment was amputation. Over 41,000 had their limbs amputated.



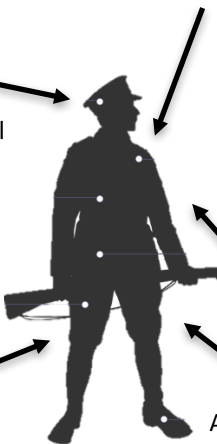
Gas gangrene could not be cured, it could often kill in a day.

Artillery, gun fire and bombs could break bones, pierce vital organs and destroy tissue. Many never made it to hospital

The high number of head wounds led to the steel Brodie Helmet being introduced, it reduced fatal head wounds by 80%. All soldiers were given it.



Most injuries often got infected due to the bacteria in the soil, causing gangrene. The impact of gangrene was reduced by tetanus injections from end of 1914.



Gas Attacks

Gas caused great panic as soldiers were unprepared for it. It wasn't a major cause of death, only 6000 soldiers died during WW1.

There were 3 types used in the war:

Chlorine: Ypres 1915

Caused death by suffocation. Before gas masks, soldiers soak cotton pads in urine and pressed them to their faces



Phosgene 1915

Used Ypres. Faster acting than chlorine, killing an exposed person within 2 days.



Mustard Gas 1917

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

Solution

British soldiers were given Gas masks from July 1915, which became more sophisticated over time



Medical Problems on the Western Front: Activities

Medical Problems on the Western Front	Give 2 illnesses caught simply from spending too long in the trenches.	
	What is gas gangrene?	
	What was shellshock?	
	What were the different effects of gas on soldiers?	
	How was Trench Fever treated?	
	What was responsible for the majority of injuries on the Western Front?	
	How many British soldiers died from gas attacks?	
	Give 2 ways people tried to avoid Trench foot.	
	What caused Trench fever?	
	Name 3 kinds of gas used in WW1.	

British Soldier Injuries

Annotate this Tommy with all the injuries he could face on the Western Front



Describe two features of the effects of poison gas attacks on soldiers. (4 marks)

One key feature of _____ was _____

Another key feature of _____ was _____

Mark ____/4 Feedback:

Cornell Notes: Conditions and Injuries on the WF

Use this Cornell Note page to condense your understanding of the problems facing soldiers
Read the last three pages and use the headers to guide you



Key Words and Q's

Write out they key words and questions to test yourself

Note Taking

Make notes/pictures on the key points, dates, people on the types of injuries, reasons for injuries and conditions on the Western Front

Summary

Simply summarise the treatments into key bullet points

Source Utility Practice

Lets practice our source utility skills – There are three sources with an **enquiry focus** above them
Spend 7 minutes analysing each source; looking at the content (what you can learn), comparing to what you know and assessing the provenance (read the caption!)



Content:

Source Content & Knowledge

Enquiry Focus

Trench conditions on the Western Front

Provenance

Nature, Origin, Purpose



Source A: Trenches of the 11th Cheshire Regiment at the Somme, July 1916.

Content:

Source Content & Knowledge

Enquiry Focus

Problems of helping the wounded on the Western Front

Provenance

Nature, Origin, Purpose

Admirable as was the organization of the large base hospitals, the transport of the wounded from the fighting line seems to have been very badly managed during the advance of the Germans through Belgium and north-France. The supply of motor ambulances proved totally inadequate and the slightly wounded had to shift for themselves and squeeze into goods trains.

An extract from an article in the **Journal of the Royal Army Medical Corps, 1915.**

Content:

Source Content & Knowledge

Enquiry Focus

Gas Attacks

Provenance

Nature, Origin, Purpose

The gangrene found amongst our wounded soldiers is directly due to the infection introduced at the time of the wound, and this is likely to occur if muddy clothing as been carried by the projectile, of if earth has been carried by the explosion

Source A: 'A report on Gas Gangrene' by Anthony Bowlby, consulting Surgeon to the British army, October 1914

Medical Progress up to WW1



In the years before WW1 many breakthroughs had occurred in medicine. These were the foundation for medical treatment and advancements in the British sector of the Western Front. These included aseptic surgery, x-rays and blood transfusions

X-Rays

X-rays were discovered by accident in 1895 by Wilhelm Roentgen.



As early as 1896 radiology (X-Ray) departments were set up, like Birmingham General Hospital where Dr. John Hall-Edwards was one of the first doctors to use x ray to locate a needle in a woman's hand.

Problems with X-Rays

- Health risks from x-rays were not understood, radiation levels were 1,500 times stronger than those today, so patients could lose hair or suffer burns
- Reontgens X Ray machine contained a glass tube which was fragile
- X Rays took about 90 minutes to complete, a long time
- Big x-ray machines were being developed but immovable

Blood Transfusions

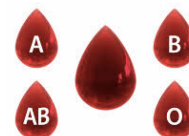
In the 19th and 20th centuries, blood loss was a huge problem in surgical operations that had got more complex. Blood loss often caused shock and death, which limited progress

James Blundell did the first experiments on human to human blood transfusions



He developed techniques/equipment so that transfusions were possible by the start of WW1.

Also, Karl Landsteiner discovered blood groups in 1901, e.g. A,B,AB and O, and O was the universal blood group.



This meant donor and patients could be matched

However there was a main problem:

- Blood could not yet be stored so had to be used straight away and the donor of the blood had to be connected directly to the recipient of the blood.

Aseptic Surgery

Joseph Lister's methods has laid the foundations for aseptic surgery after Louis Pasteur's publication of his germ theory in 1861 and by 1900 most operations were carried out using these methods. It had a huge impact on reducing infection in surgery

Aseptic Surgery included

- All medical equipment was steam sterilised whilst the room was air sterilised to kill germs
- All medical staff had to wash before entering the surgery and wore clean gowns and rubber gloves



Antiseptic surgery – killing germs in wounds

There are **germs** in the operating theatre but surgeons use methods, e.g. carbolic spray, to stop open wounds being infected.



Aseptic surgery – preventing germs reaching wounds

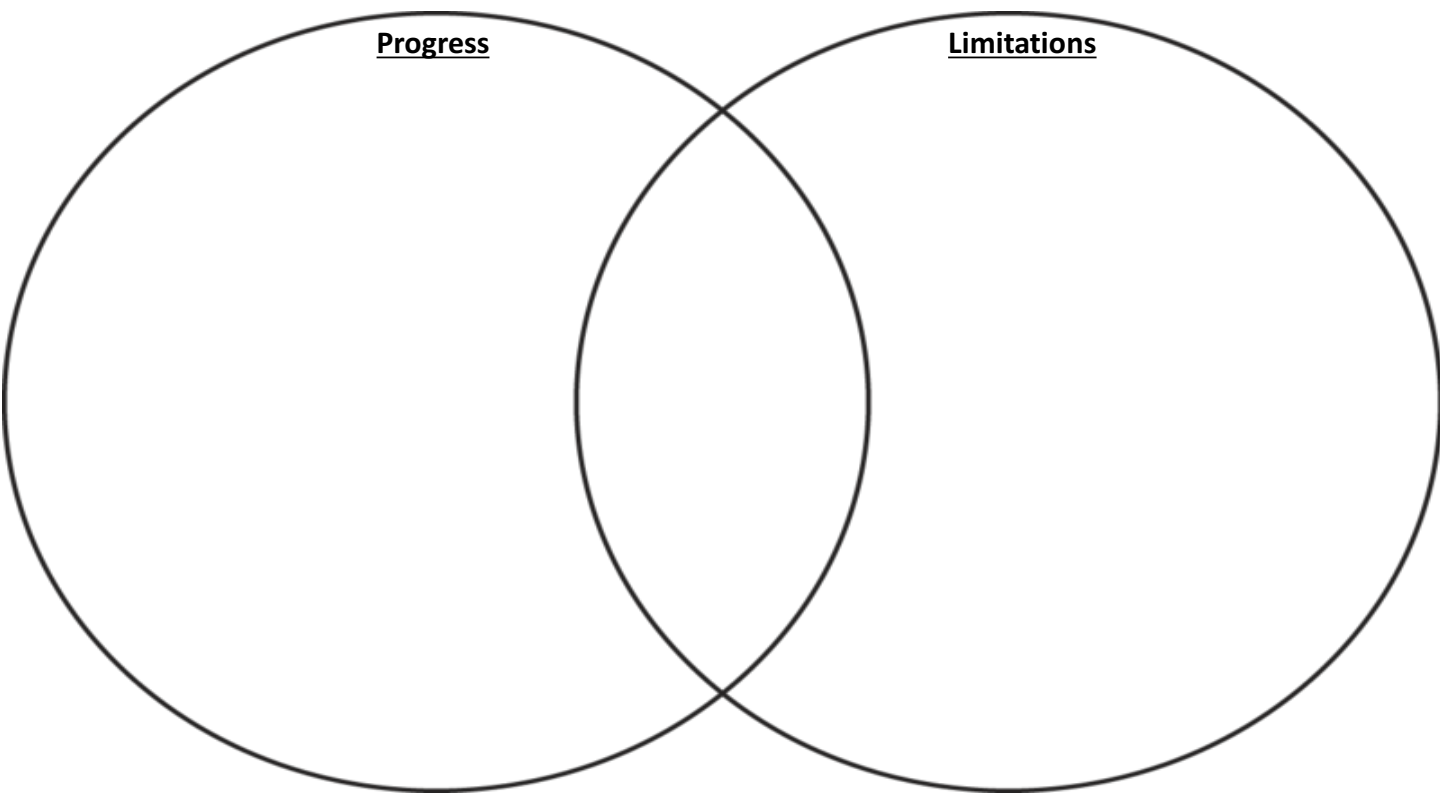
Cleaning and **sterilising** methods prevent there being any germs in the operating theatre to infect wounds.

What progress had been made up until WW1?

Fill in the progress and limitations of medical progress until the 20th century

Progress

Limitations



The role of the RAMC and FANY



The **Royal Army Medical Core (RAMC)** was the branch of the army responsible for medical care, it organised and provided medical treatment to the wounded and sick whilst being responsible for keeping men healthy.

Throughout the war, its numbers increased due to amount of wounded:

In 1914, there were 9000 men and by 1918 they had 113,000 who were doctors, stretcher bearers et.c

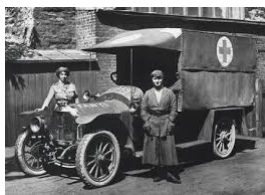
Well trained nurses from Queen Alexandria were allowed to join, but only 300 of them in 1914. By 1918, there were 10,000 and many volunteer cooks, cleaners and washers



The **First Aid Nursing Yeomanry (FANY)** was the first women's voluntary organisation to send volunteers to the Western Front.

First 6 women went in 1914 and over 500 women volunteered to provide frontline medical support

FANY help by driving ambulances, driving supplies to the frontline and setting up a mobile bath units that could bathe up to 40 men an hour!



One unit ran the Calais ambulance unit, with 22 drivers and 12 ambulances

FANY paved the way for VAD (Volunteer Aid Detachment) nurses to help medical services.



Describe two features of the Royal Army Medical Core (4 marks)

One key feature of _____ was _____

Another key feature of _____ was _____

Mark ____/4 Feedback:

How would you follow up this source to find information about the work of FANY (4 Marks)

Detail in the source I would follow up

Question I would ask

What type of source could I use?

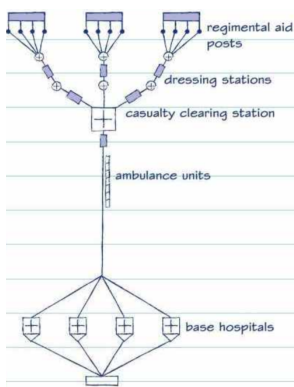
How might this help answer my question?



FANY nurses treating wounded solders, whilst wearing gas masks



The Evacuation Route



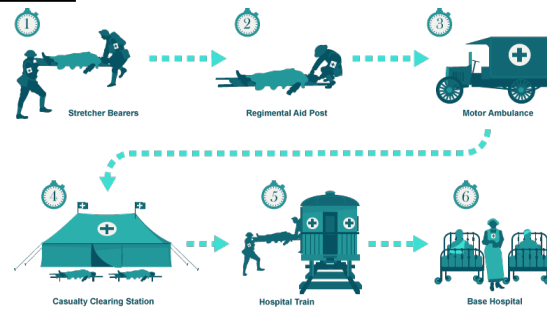
Because of the large number of casualties, the RAMC needed a quick and efficient system to get the wounded from the frontlines to a safe area where they could be treated.

This system was called 'The Chain of Evacuation'

The chain of evacuation

There were **four main stages of the chain of evacuation** but the order of these stages was not necessarily the same for each casualty.

The walking wounded would make their way to the RAP or they would be carried by stretcher bearers. Stretcher bearers would carry basic medical supplies and there were usually 16 men per battalion (1000 soldiers), so there were not enough



1. RAP: Regimental Aid Post

- Located within 200 metres of the frontline, in communication trenches
- The purpose of the RAP was to give immediate first aid and get as many men back to the front as quickly as possible. They could not deal with serious injuries, sent to ADS
- Led by a Regimental Medical Officer with some stretcher bearers

2. Dressing stations (ADS and MDS)

- There was usually an **Advanced Dressing Station (ADS)** within 400m of the RAP and a **Main Dressing Station (MDS)** about half a mile away, usually in tents or bunker to provide protection from enemy shelling. They could only look after men for a week
- They were staffed by 10 medical officers, stretcher bearers and nurses too. In total, they could deal with about 150 men but often in battles like Ypres (1917) they dealt with 1,000 casualties in 2 days at Hooze.

3. Casualty Clearing Stations (CCS)

- Around 7 miles away from the front, close to the railway and for ambulance wagons
- They had several doctors, contained operating theatres, x ray machines and wards. They could deal with up to 1000 casualties at a time, at the Third Battle of Ypres the 24 CCS treated over 200,000 casualties with only 4% dying
- The CCS treated the most critical injuries close to the front, this was important as it would stop gangrene infection and so men could be sent back to the front
- The CCS had a triage system to assess the wounded into three categories:
 - The walking wounded- Patch them up and send back to the front
 - Those in need of hospital treatment- move to a Base Hospital
 - No chance of recovery- make them comfortable

4. Base Hospitals

- Situated near the ports on the French/Belgian coast on train lines and canal rivers
- They had operating theatres, x ray machines, laboratories and even specialist centres for treating gas poisoning and head wounds. These specialist wards allowed doctors to become experts in treatment of particular wounds.
- They could treat up to 2500 patients at once
- From here, most patients were sent back to England, those with 'Blighty Wounds'



As the war went on, the efficiency of the system improved significantly and by the end of the war, 67% of men that visited to the CCS were sent back the front again

Arras Underground Hospital

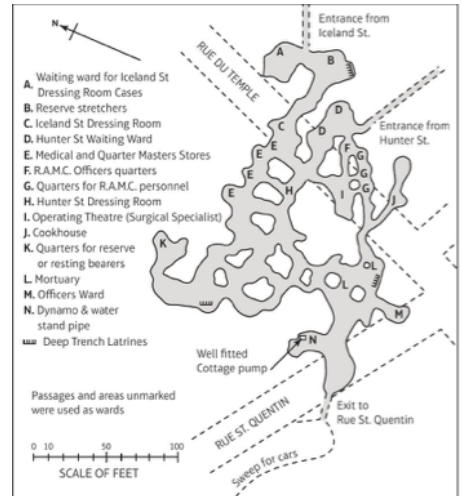
Arras Underground Hospital

- In 1916, tunnelling began under the town of Arras with a fully working hospital built in 800m of tunnels.
- It was nicknamed Thompsons Cave after an RAMC officer
- It was essentially a Dressing Station close to the front, where soldiers would move through the chain of evacuation



- The hospital included:
 - Waiting rooms for the wounded
 - 700 spaces for stretchers to be used as beds
 - An operating theatre
 - A mortuary
 - Electricity and a water supply

- The hospital was abandoned during the battle of Arras, 1917 when it's water supply was destroyed by a shell



Evacuation Route, RAMC and FANY	Name each stage of the chain of evacuation from battlefield to Britain.	
	What was Thompson's Cave?	
	Why did the role of Base Hospitals and Casualty Clearing Stations swap during the war?	
	What was the role of the RAP?	
	Who were the RAMC	
	What roles did the FANY play in helping the wounded?	
	How many men in the RAMC by the end of the war	

Key stages of the Chain of Evacuation

Features: Give me 2 bullet pointed ones for each stage

1.

2.

1.

2.

1.

2.

1.

2.

The British Sector of the Western Front: Exam Question

Study Sources A and B in the Sources Booklet.

How useful are Sources A and B for an enquiry into the system for dealing with injured soldiers on the Western Front?

Explain your answer, using Sources A and B and your knowledge of the historical context.

Source A: A photograph showing soldiers on stretchers outside a dressing station on the Western Front during the Battle of Arras, 1917. They are waiting to be transported to a casualty clearing station.



1.Source B. From the writings of Henry Buckle, a soldier on the Western Front. He wrote a diary while he was in the trenches and typed it up after the war. Here he describes his situation after being injured in 1915.

I am lying in the barn with a damaged leg, the result of being too near a bursting shell. My leg is not bleeding but it got sort of buried in the trench and twisted up. My sergeant was also injured. Our stretcher people were busy so I told them we could manage to get back by ourselves. It took us all night to get back here to the barn, with lots of sit-downs. The RAMC staff keep coming in but don't seem able to mend me up. The Medical Officer has been in and says I shall have to go to a Field Hospital for a week.

Reminder:

1. Two paragraphs, one for each source

- What about the sources **CONTENT** is useful about about 'the system for dealing with injured soldiers'
- How does your own knowledge back up the source
- What is useful about the **provenance** of the source? (Read the caption!)

Source A is useful as it shows... _____

I know that _____

The provenance of the source is useful as.... _____

Source B is useful as it shows... _____

I know that _____

The provenance of the source is useful as.... _____

Peer Assessment

Read through your partners answer and complete the following checklist for each of the paragraphs and grade answer using mark scheme

Stop. Peer Assess. Progress.

- Tasks:**
- Using three highlighters, identify the following in EACH paragraph
 - Use of source & examples from it
 - Use of own knowledge
 - Utility of provenance
 - Using the mark scheme, highlight the level they would have got and write the mark here _____/8
 - Give them feedback below

Mark Scheme	
Mark	Mark
1-2	<ul style="list-style-type: none"> A simple judgement on how useful the source are Basics comprehension of the source using a quote or paraphrase used Limited subject knowledge is used which links to the source.
3-5	<ul style="list-style-type: none"> A judgement on how useful the sources are is made, using what the sources tells us (content) and/or the provenance (nature, origin, purpose) Uses evidence from source (quotes/description) in answer Used clear subject subject knowledge throughout to support comments on the usefulness of the content of the sources and/or their provenance.
6-8	<ul style="list-style-type: none"> Clear judgement on how useful the sources are, using both the content AND the provenance of the source to make a comment. The sources content is analysed to argue about how useful the source is Specific knowledge is used throughout to back up how useful sources are for both content and provenance

Key Word Scramble

Fill the box with as many key words from the topic as you can remember

A ₁	B ₃	C ₃	D ₂		
E ₁	F ₄	G ₂	H ₄	I ₁	J ₈
K ₅	L ₁	M ₃	N ₁	O ₁	P ₃
Q ₁₀	R ₁	S ₁	T ₁	U ₁	V ₄
W ₄	X ₈	Y ₄	Z ₁₀		

Follow Up Practice



Complete these two follow up questions, use the source box at the bottom to help you with the type of source to ask!

Study Source A

Source A: From the writings of Henry Buckle, a soldier on the Western Front. He wrote a diary while he was in the trenches and typed it up after the war. Here he describes his situation after being injured in 1915.

I am lying in the barn with a damaged leg, the result of being too near a bursting shell. My leg is not bleeding but it got sort of buried in the trench and twisted up. My sergeant was also injured. Our stretcher people were busy so I told them we could manage to get back by ourselves. It took us all night to get back here to the barn, with lots of sit-downs. The RAMC staff keep coming in but don't seem able to mend me up. The Medical Officer has been in and says I shall have to go to a Field Hospital for a week.

How could you follow up Source A to find out more about the system for dealing with injured soldiers on the Western Front?

Detail in the source I would follow up

Question I would ask

What type of source could I use?

How might this help answer my question?

How could you follow up Source C to find out more about X-Rays on the Western Front?

Detail in the source I would follow up

Question I would ask

What type of source could I use?

How might this help answer my question?

Study Source C

Source C: From Radiograph and Radiotherapeutics, by Robert Knox, published in 1917. This was a textbook on the use of X-Rays written by a British Doctor

The need for portable outfits in connection with the war had led to a great development in the provision of motor wagons containing complete x ray apparatus with all accessories. The mechanism used for driving the wagon i.e. the motor is couple with a powerful dynamo which delivers a continuous current



Asking Questions

Practicing what questions you could ask is essential to this question, try to think of two questions you could ask to find about the following topics

<p>The Evacuation Route</p> <p>1.</p> <p>2.</p>	<p>The treatment of soldiers affected by gas</p> <p>1.</p> <p>2.</p>
<p>The use of brain Surgery</p> <p>1.</p> <p>2.</p>	<p>The role of the RAMC</p> <p>1.</p> <p>2.</p>

New Techniques in the Treatment of Wounds

Major problem for the RAMC was dealing with infections caused by gas gangrene.


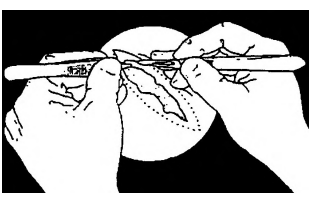
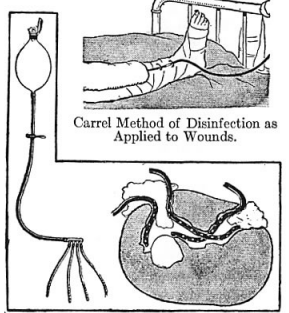


It was not possible to perform aseptic surgery in the Dressing Stations and Casualty Clearing Stations for two reasons

1. The contaminated conditions
2. The large number of wounded men

New methods had to be found to match the problems facing medics on the Western Front.



<p align="center"><u>Amputation</u></p> <p>If antibiotics or wound excisions failed to stop the spread of infection, the only way left was the amputation of limbs.</p> <p>By 1918 over 240,000 men had lost limbs to simply prevent their death</p>	
<p align="center"><u>Wound excision or debridement</u></p> <p>This was cutting away the dead, damaged and infected tissue from around the wound to reduce infection. This needed to be done as quickly as possible to prevent infection spreading.</p> <p>All shell/bullet fragments were also removed</p> <p>After the excision the wound needed to be closed with stitches, often antiseptics were used to kill infection.</p>	
<p align="center"><u>The Carrel-Dakin method</u></p> <p>Antiseptics such as carbolic lotion were inefficient when treating gas gangrene.</p> <p>By 1917 the Carrel- Dakin method was the most effective solution, this involved putting sterilised salt solution in a wound through a tube.</p> <p>The solution only lasted for 6 hours and had to be made as soon as it was needed. This was a problem if large numbers of soldiers needed treatment.</p>	

Source A From the diary of B. C.Jones, 1915-16. Jones served with the Royal Field Artillery in France until 1915.

7 December. A German shell hit the dugout of our telephone pit I remembered no more until I woke up in Bethune Casualty Clearing Station Number 33, where I find I have been severely wounded. Left hand blown off, left arm ripped up 12 inches. Scalp wound 6 inches wound on over side of knee 5 inches

9 December. Operation on upper arm for gangrene successful)

12 December. I remain here for 8 days then removed to St Omer by hospital barge very comfortable. I am then removed by train to Etaples. I am sent to England on the Hospital Ship. Return to Nottingham where I am in bed until the end of February. 3 June 1916. I am eventually transferred to Brighton where I am operated on and re-amputated. Awaiting Roehampton for artificial limb

What is useful about this source in telling us about surgery and treatment of wounds on the Western Front?

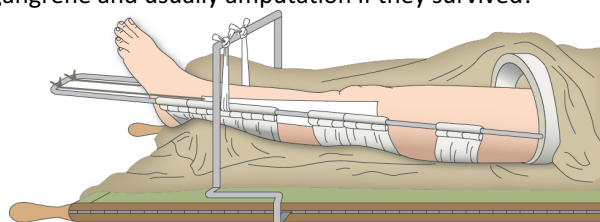
The Thomas Splint

In 1914/1915 men with a gunshot or shrapnel wound in the leg would have a very small chance of survival (20%).

The current splint that was used to secure the leg did not work, it did not keep the leg straight so by the time injured soldiers reached the Casualty Clearing Station, which causes blood loss, shock, gangrene and usually amputation if they survived!

Hugh Thomas invented the Thomas Splint, which was tested on in a hospital in London. This splint kept the leg straight so the bone healed in the correct position.

From December 1915 medical practitioners on the front were trained in on how to use the Thomas Splint. Survival rates from this type of wound increased from 20-80%.



Questions

Why did the environment mean the original splints used on soldiers did not work?

Why did wound excision need to be done quickly?

New Techniques in the Treatment of Wounds

Use of mobile X-ray units

X-rays were used from the start of the war. They were mainly used to show shrapnel and bullets, if they were removed this would help stop infection.

Two x-rays would be taken from different angles and this would help the surgeon identify the location and shape of the shrapnel, making it easier to extract.

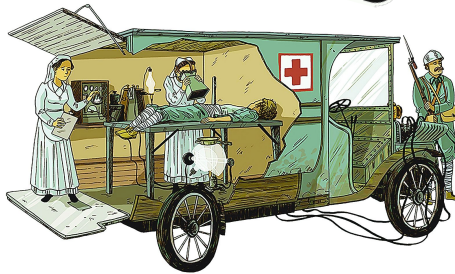
6 Mobile vans were used throughout the British sector of the Western Front, called 'Petit Curies' after Marie Curie who created them.



WEAKNESS

There were a number of weaknesses:

- X-rays could not detect all objects in the body, such as fragments of clothing in the wound
- The length of time it took to perform an x-ray
- Tubes in the x-ray overheated quickly, meaning it could be only used once an hour. To combat this, three machines were used in rotation.
- The mobile vans took a while to set up and the picture quality was poorer than in Base Hospitals but they could still see shrapnel



Blood Transfusions

In the British Sector blood transfusions were introduced Lawrence Robertson in 1915 in the base hospital at Boulogne.

He used the human to human method to prevent shock of blood loss in casualties. Many injured soldiers recovered using this method.



By 1917 blood transfusions were being carried out in the Casualty Clearing Stations because they had been so successful at the base hospitals.

Geoffrey Keynes, doctor and lieutenant in the RAMC designed a portable blood transfusion kit that was used to provide blood transfusions closer to the frontline.



This kit could store blood which could be used to take blood closer to the front line, meaning soldiers received blood sooner, stopping their bodies going into shock

From 1915 Keynes was using his kit across the Western Front in this method in casualties clearing stations on the front.

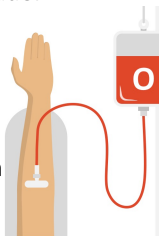
The Blood Bank at Cambrai

Due to the identification of different blood groups and the use of type O as a universal donor there was less risk of using the wrong blood type during transfusions.

There were still problems of there not being enough blood as it could not be stored.

As the war continued, some advances were made:

- In 1915, Richard Lewisohn found that by adding sodium citrate to blood stopped it clotting so it could be stored
- In 1916, Francis Rous and James Turner found that adding a citrate glucose solution to the blood meant it could be kept refrigerated up to 4 weeks.



In preparation for the Battle of Cambrai, 1917, Oswald Robertson stored 22 units of blood in the first 'blood depot'. 20 Canadians were treated using the blood, 11 survived



This was first time blood was used to treat soldiers in shock and it showed its potential to save lives.

Blood at CCS's could not be used to make a huge difference to the survival of those injured on the front line.

Questions

Why was the Blood Depot at Cambrai so significant?

Why was the work of Lewisohn so important?

What were the limitations of Mobile X Ray Units

Why were blood transfusions so useful?

New Techniques in the Treatment of Wounds

Increase in head injuries

Approximately 20% of all injuries in the Western front were to the head, neck and face,

As the war went on new methods of treatment for head injuries were developed such as surgery to the eye, face, ear, nose and throat, and brain and plastic surgery.



Brain Surgery

Injuries to the brain were almost always fatal at the start of the war because:

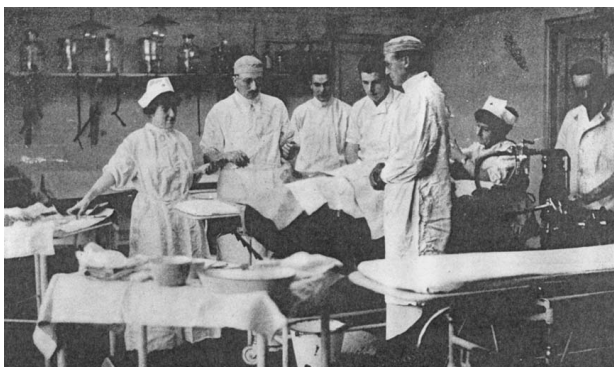
- Very few doctors who had experience of neurosurgery before the war.
- Infection in the head was common and it was difficult to move men through the chain of evacuation

An American neurosurgeon called Harvey Cushing developed new techniques.



- He experimented with use of magnets to remove metal fragments from the brain.
- He also used a local anaesthetic (patient awake but wounded area numb) instead of a general anaesthetic (patient asleep) to avoid brain swelling

Cushing operated on 45 patients in 1917 and 71% survived, compared to the usual survival rate of 50%.



Improving experience and observations of different patients quickly led to improvements in treatments.

Observation	New Method
Men who were operated on quickly were more likely to survive.	Some Casualty Clearing Stations became specialist brain surgery centres. During the Third Battle of Ypres, all head injuries went to the CCS at Mendinghem
It was dangerous to move men quickly after an operation.	Patients would stay at the CCS for three weeks after surgery
Injuries may be hiding more severe injuries.	All head wounds would be carefully examined

There was a move from Ether and Chloroform anaesthetics to Gas and Oxygen which was safer and gave better results.



Plastic Surgery

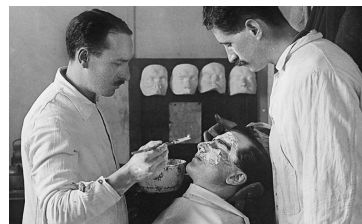
A New Zealand ear, nose and throat surgeon, Harold Giles developed the use of plastic surgery during the war.



Giles was interested in how to replace and restore those parts of the face that had been destroyed.

He devised new operations to overcome problems:

- Delicate surgery could not be completed in France, so Queens Hospital in Kent opening in 1917
- Using skin grafts (taking skin from one area to graft onto the wounded area)
- Using jaw splints, wiring and metal replacement cheeks for facial reconstruction



After the Battle of the Somme in 1916, Giles personally dealt with about 2,000 cases of facial damage.

By 1915, 7 hospitals in France specialised in plastic surgery, especially head injuries

In total, over 12,000 plastic surgery operations were carried out throughout the war.



What helped the improvement of brain surgery and plastic surgery?

Cornell Notes: Treatment on the Western Front

Use this Cornell Note page to condense your understanding of treatment on the Western Front
Read the last three pages and use the headers to guide you



Key Words and Q's

Write out they key words and questions to test yourself

Note Taking

Make notes/pictures on the key points, dates, people on how injuries were treated on the Western Front

Summary

Simply summarise the treatments into key bullet points

Source Skills

Lets practice our source utility skills – There are three sources with an enquiry focus above them
Spend 7 minutes analysing each source; looking at the content (what you can learn), comparing to what you know and assessing the provenance (read the caption!)



Content:

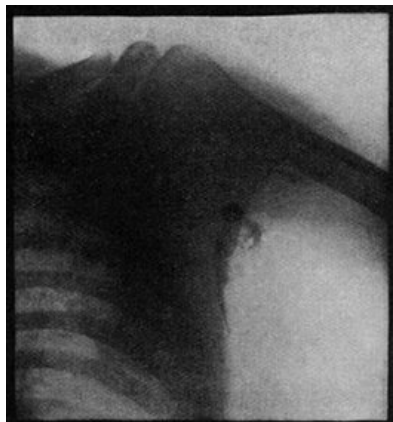
Source Content & Knowledge

Enquiry Focus

Effectiveness of medical treatment

Provenance

Nature, Origin, Purpose



Source A: An x-ray taken in 1915 showing a bullet lodged in the armpit of a British soldier

Content:

Source Content & Knowledge

Enquiry Focus

Treatment and Hospitals on the Western Front

Provenance

Nature, Origin, Purpose



Source A: A photograph of a British Base Hospital in 1916, the nurses are waiting for a visit from King George V

Content:

Source Content & Knowledge

Enquiry Focus

The work of Regimental Aid Posts

Provenance

Nature, Origin, Purpose

In our front line dugout we had first aid dressing and morphia and that was all. Several wounded got tetanus from an infection in the ground which was carried in shelled areas.

It was all first aid work. The only value of a medical officer being in a front line trench was to help the morale of the men. Medically I felt no good at all

Source A: Captain Maberly Esler, RAMC, speaking after the war in an interview about his work at a Regimental Aid Post.

Treatment on the Western Front: Activities

Treatment on the Western Front	Number of plastic surgery operations in the War?	
	What was Wound excision/debridement?	
	How did Geoffrey Keynes improve blood transfusions?	
	How did the Thomas splint improve leg injuries?	
	What percentage of wounds were suffered to the head area?	
	Give 2 new techniques developed by Harvey Cushing to deal with brain injuries.	

How would you follow up the above source to find information about plastic surgery during WWI? (4 Marks)



Four views of facial reconstruction after a war wound, July 1916

Detail in the source I would follow up

Question I would ask

What type of source could I use?

How might this help answer my question?

Describe two features of blood transfusions in British Sector on the Western Front (4 marks)

One key feature of _____ was _____

Another key feature of _____ was _____

Mark ____/4 Feedback:

Treatment on the Western Front: Exam Question

How useful are Sources A and B for an enquiry into the treatments that were available for wounded soldiers on the Western Front?

Explain your answer, using Sources A and B and your own knowledge of the historical context.
(8 marks)

Source A: From Harvey Cushing's A Surgeon's Journal 1915-18, published in 1936. Cushing, an American surgeon, is describing the conditions under which he is working during the battle of Passchendaele on August 19 1917.

My prize patient, Baker, with the shrapnel ball removed from his brain after doing well for three days suddenly shot up a temperature to 104 last night about midnight. I took him to the operating theatre, reopened the perfectly healed external wound, and found to my dismay a massive gas infection of the brain. I bribed two orderlies to stay up with him in the operating room, where he could have constant thorough irrigation over the brain and through the track of the missile passing a warm saline solution along the path taken by the shrapnel to prevent infection]. No light except candles was permitted last night.

Source B: Photograph of a mobile x ray unit taken in 1917



Source A is an account by Cushing of his wartime experiences as a brain surgeon. We can see that Cushing wanted patients to have the best possible treatment. He was prepared to bribe two orderlies to keep watch on Baker, Cushing was extremely successful in treating brain injuries in 1917 when his patients had a survival rate of 71% (compared to the 50%, which was more normal for brain surgery), so it is likely that he is not exaggerating the care he gave to his patients. Although this account was published nearly 20 years after the war, it is still very useful because it was based on Cushing's journal. As an experienced surgeon, he probably kept the journal regularly and so this final work will record quite accurately what he was doing. He also probably remembered this patient very well because he refers to him as his prize patient'. Although this extract is only describing one surgeon and one patient's experiences in one type of surgery, it does point to some other information about treatment. The reference to gas gangrene massive gas infection) is important because we know that many men, even with quite minor injuries, suffered from this. If it was not treated in time by removal of tissue or use of antiseptics, the only way to save a man's life was amputation of the infected part of the body. This source also suggests problems with the conditions under which treatment took place. The operation took place at night, and the only light came from candles

Tasks:

1. Read the Source A paragraph

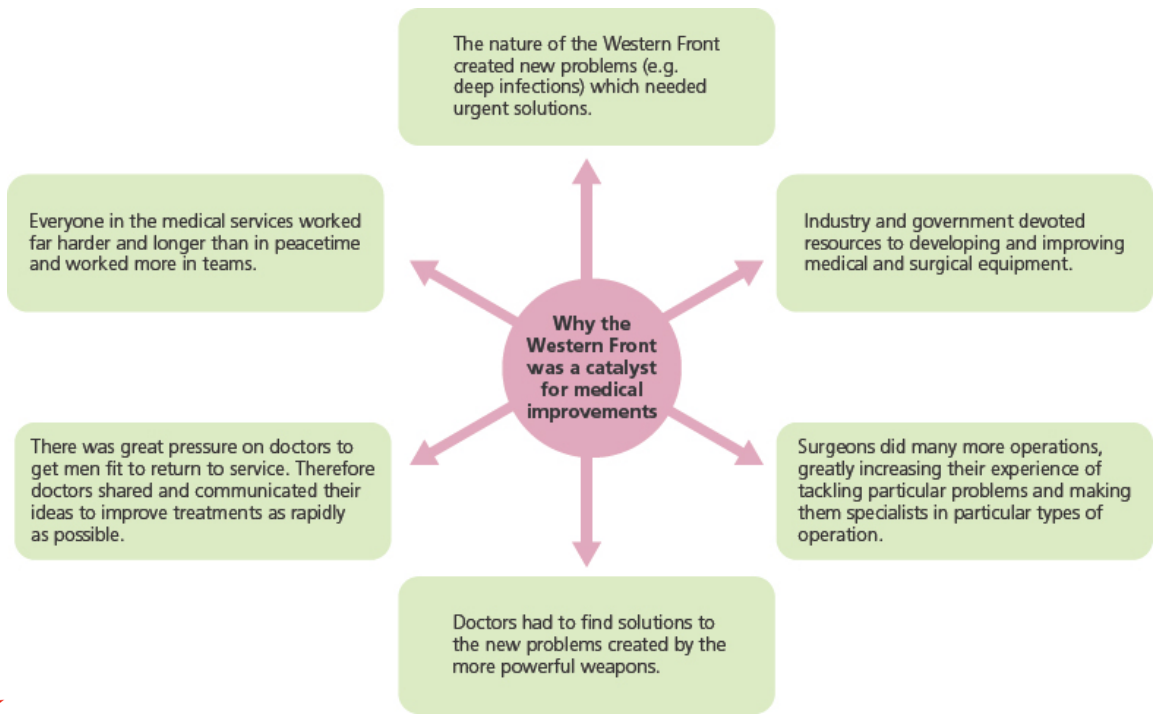
2. Using three highlighters, identify the following

- Use of source
- Use of own knowledge
- Discussion of provenance

3. Complete the answer for Source B

Source B is _____

How much progress was there during the war?



Study the advances in treatment and surgery during the First World War, think about the progress that was made from before the first world war. Complete the following table to organise your knowledge

	Before the First World War	During the First World War
War Wounds		
Infection		
X Rays		
Blood Transfusions		
Plastic Surgery		
Bray Surgery		

Features Planning


Simply plan out what you would include in the answers to these 4 mark features questions. Remember to **IDENTIFY THE FEATURE** and give **SUPPORTING DETAIL**



	Feature 1	Feature 2
Stretcher bearers		
Ambulances		
Trench Foot		
Gas Attacks		
RAMC		
FANY		
Dressing Stations		
Casualty Clearing Stations		
Thomas Splint		
Plastic Surgery		
Blood Bank at Cambrai		
Brain Surgery		
Arras Hospital		

Source Skill Practice

Read/study each of these source & simply bullet point notes for the 3 key areas of a source utility question: **Content, Knowledge, Provenance**

	Content (What can you learn)	Knowledge (What do you know?)	Provenance (Nature, Origin, Purpose)
<p>Source A: From the notebook of Lance Sergeant Elmer Cotton, who served in 1915 and is describing the effects of a chlorine attack</p> <p>It produces a flooding of the lungs. It is the equivalent of drowning, only on dry land. The effects are these – a splitting headache, a terrific thirst (but drinking eater is instant death), a knife pain in the lungs and coughing up greenish froth. It is a fiendish death to die.</p>			
<p>Source B: A photo of an advanced dressing station, taken in August 1916 during the Battle of the Somme</p> 			
<p>Source C: From Pat Beauchamp's Autobiography, published 1919. Pat worked as a nurse and ambulance driver bringing wounded in from trenches from 1916 onwards.</p> <p>'Our yeomanry nurses, who among their work, drive, clean, and manage their own ambulance cars..have done wonders along the front. One of their latest activities has been devise a and work a travelling bath, which offers the luxury of a hot bath to scores of men</p>			

Follow Up Question Planning



To practice your 4 mark follow up question, complete the sections of this table
The source and description are given to you, you need to add your knowledge to explain the context, what you might learn and what enquiry it would be useful for

SOURCE	DESCRIPTION OF THE SOURCE	THE HISTORICAL CONTEXT (What you know)	WHAT MIGHT I LEARN FROM THIS SOURCE?	WHAT KIND OF AN ENQUIRY WOULD THIS BE USEFUL FOR?
Autobiographies of people in WWI e.g. Pat Beauchamp's autobiography, 'Fanny goes to war' published in 1919 (p138 & p161)	Beauchamp worked as a nurse, bringing in the wounded from the trenches and from 1916 as an ambulance driver, taking patients to the base hospitals.	Ambulance introduced 1914 FANY were voluntary nurses and ambulance drivers	What conditions were like on the Western Front Problems of transporting the sick The role of women volunteers in helping the wounded	A enquiry into: <ul style="list-style-type: none"> the role of FANY on the Front the chain of evacuation the use of ambulances on the front
Autobiography of Geoffrey Keynes, 'The Gates of Memory' (1981) (p156)	Keynes was important in developing blood transfusions during the war			
Interviews with Soldiers/ Officers etc from WWI e.g. Interview with Gunner William Towers in 1989	A modern recollection of events from a veteran from WWI – he recalls his treatments in Ypres for a wounded leg in one part.			
Interview with Captain Maberly Esler in 1974	A medical officer in Hooze, Ypres in June 1915 – recalling problems with infection in the trenches			
Photograph of soldier wearing a cotton wool pad respirator in 1915	Image of a gas mask used at Ypres in April 1915			
Photographs of Dressing Stations and Casualty Clearing Station	From 1915 and 1916 showing conditions of the western Front			
Photographs of facial reconstructions 1916 and Gillies work	Gives photographic evidence of stages of plastic surgery on a wounded soldier's face			
Sketches of WWI trenches, terrain etc e.g. A typical trench system	An interpretation of the war (Artistic impression) – The provenance must be considered			
Poem by Wilfred Owen in 1917- 'Dulce et Decorum Est' – 'It is sweet and fitting to die for one's country'	Owen was being treated for shellshock, served on front line 1916-17 and returned in 1918 where he was killed in action.			
Diary of E.S.B. Hamilton, 19 th August 1916 – field Ambulance Service	Worked at an Advanced Dressing Station on the Somme – details of conditions			
Ward Muir – 'Observations of an Orderly' published in 1917	Worked in a London Hospital that received patients from the eastern Front at the end of the chain of evacuation			
Major-General Sir W.G. Macpherson – 'Medical Services General History' – published in 1924	Macpherson was on the Western Front from 1914. He was in charge of the RAMC from 1916-18 – Wrote this history based on official records to which he had access.			
Robert Knox 1917 – Radiography and Radiotherapeutics	A textbook published by a British Doctor on the use of x-rays			

Western Front Medicine Exam

Western Front Exam	Give three parts of a British Trench	
	What was a 'Blighty Wound'?	
	What were the benefits of Mobile X Ray Units?	
	What problems faced transport of wounded	
	What was responsible for the majority of injuries on the Western Front?	
	Name 5 different kinds of sources that could be used to learn more about medicine on the W.F.	
What was used in July 1915 to reduce the number of head injuries?		
By 1916 citrate glucose was added to donated blood. How did this improve blood transfusions		

Describe two features of casualty clearing stations in the chain of evacuation (4 marks)

One key feature of _____ was _____

Another key feature of _____ was _____

Mark ____/4 Feedback:

Study Source B. How could you follow up Source B to find out more about the problems involved in performing operations on the Western Front?

In your answer, you must give the question you would ask and the type of source you could use.

Source B: From the diary of Oswald Robertson, written on 30 November 1917. He was an army surgeon working on the Western Front during the First World War.

Men were horribly mutilated – many were dying when brought into the ward. All the beds were full and we began putting stretchers on the floor. Blood everywhere – clothes soaked in blood, pools of blood in the stretchers, streams of blood dropping from the stretchers to the floor. My rubber apron was one solid red smear. All we could do was try to stop the bleeding and get the patients as comfortable as possible. I could only transfuse an occasional patient. The majority had to take their chance and go through the operation as best they could.

Detail in the source I would follow up

Question I would ask

What type of source could I use?

How might this help answer my question?
