

## KQ7: How effectively were public health problems in Cardiff in the 19th century dealt with?

### Historical context : warfare on the Western Front

First World War caused much more death and injury than previous wars – 22 million.

Weapons that caused so many casualties in the First World War:

- Rifles – fired bullets over long distances, maximum damage to bones and vital organs.
- Machine guns – could fire up to 500 rounds a minute.
- Artillery – long-range shells killed or wounded through blast damage and shrapnel.
- Poison Gas – caused severe lung and eye damage.

Poor ground conditions, lack of cover in No Man's Land and barbed wire also resulted in increased casualties.

Illness and disease at the Front:

- Flesh wounds were susceptible to infections like gangrene.
- Trench fever (pyrexia) was spread by lice led to headaches and bone pain.
- Trench foot was a fungal infection caused by feet always being wet.
- Frostbite from living outside in the cold, damaged skin and muscle.
- Body lice from dirty uniforms of soldiers resulted in itching and blisters.
- Shell Shock was an extreme anxiety caused by living in terrible conditions in constant danger.

### How the First World War changed medical treatment

#### NEW TREATMENTS

- From 1915 troops were vaccinated against typhus and tetanus.
- Increased amputations led to the development of artificial limbs and joints.
- Harold Gillies, a British army surgeon, developed plastic surgery at the Queen's Hospital in Kent – facial reconstruction and skin grafts.
- American surgeon Harvey Cushing invented a surgical magnet to extract bullets from wounds.

#### MEDICAL IMPROVEMENTS

- Thomas Splint – invented in 1916 Hugh Owen Thomas; reduced injury death rate from 80 to 20 per cent; it stabilised fractures, reducing blood loss, infection and amputations.
- Aseptic surgery – carbolic acid and hydrogen peroxide to kill bacteria in operating theatres; saline solution in wounds reduced infections.
- Blood transfusions – blood groups were discovered in 1900 so blood transfusions could be given on the Western Front; Richard Lewisohn showed sodium citrate stops blood clotting; Geoffrey Keynes used a portable refrigeration machine to store blood.
- Portable X-Rays – X-rays could speed up finding bullets and shrapnel; Marie Currie developed a portable X-ray machine; by 1916 most Casualty Clearing Stations had an X-ray machine.

### Treatment and care of the wounded

1. Stretcher bearers -
  - Recovered men from the battlefield.
  - Took them to the nearest Regimental Aid Post for emergency treatment.
2. Dressing Stations -
  - Triage to assess the wounded, sorted by severity of wound.
  - Serious cases to Casualty Clearing Stations by ambulance.
3. Casualty Clearing Stations –
  - In wooden huts or tents
  - Operating theatres, mobile X-ray machines
  - Ward for 50 men
  - Wounded divided into 1) less severe sent to a base hospital 2) needing operations 3) unable to help – given palliative care.
4. Base hospitals –
  - Civilian hospital or a converted building near railways.
  - Had operating theatres, X-ray machines, laboratories.
  - Patients helped to recover either sent 'back to Blighty' (the UK) or to a recovery ward, before going back to the Front.

Medical personnel in 1914 belonged to the Royal Army Medical Corps.

Nurses in 1914 were professionally-trained Queen Alexandra's Nurses.

By 1918 there were also volunteer nurses who belonged to the Voluntary Aid Detachment.