

WAR AND MEDICINE THROUGH TIME

- Chaz We know that the Egyptian pharaohs took their doctors with them when they went to war. And the Greeks were always at war – you remember that very famous picture of a doctor treating Menelaus's arrow wound?
- Maz So war stimulated first aid treatment?
- Chaz Undoubtedly, but that was nothing compared to the effect it had on Roman medicine.
- Maz So it had a bigger impact there, then?
- Chaz Definitely. Firstly, all the Romans' doctors were Greek slaves, captured in war. And then the Romans invented hospitals (called 'valetudinaria') for their old soldiers, and the first nurses (called 'medici') to take care of them. These are perhaps the first specific examples of spin-offs from war into medicine.
- Maz Actually, I'd go even further. The Roman Empire depended on war and conquest. So they took really careful measures to look after the health of their soldiers – you know, telling them not to site a camp next to a marsh, and making sure they have clean drinking water.
- Chaz I remember the source, Vegetius, I think
- Maz Well, all those lessons learned with the army fed directly back into the way the Romans organised their cities, and that's why you get aqueducts, baths and sewers in Roman towns.
- Chaz You're saying that the Roman public health system was a product of war?
- Maz It had a direct influence.
- Chaz That is a huge effect, then. But what about the Middle Ages, it wasn't all good. The Crusades cut Western Europe off from the knowledge of the Muslim doctors – that was a big loss.
- Maz Well yes, as you know, Medieval medicine went backwards in every area except surgery because of Theodoric of Lucca's 'clever and ingenious' surgeons.
- Chaz Yes, but why were they clever and ingenious?
- Maz Because they getting so much practice in war!
- Chaz Remember those incredible 'wound man' diagrams, where surgeons advertised the kinds of wounds they could heal. But they also discovered painkillers such as opium and hemlock, and they found out they could use wine as an antiseptic.
- And that effect ran on into Renaissance times. There's that fabulous story about Paré riding into Turin and discovering that a soothing digestive healed gunshot wounds better than cauterising them with boiling oil.
- Maz Absolutely, that's because Paré, like many doctors, worked in the royal army.
- Chaz Vesalius too spent three years working as an army surgeon.
- Maz So what about the 19th century?
- Chaz Well, rulers in the 19th century were as driven by war and imperialism as the Romans, so I'd expect the same kind of war led improvements in medicine.
- Maz I've got one, Florence Nightingale! The lady with the lamp stuff and improvements in nursing happened because of the Crimean War and the hospital at Scutari.
- Chaz And I've got another. Henri Dunant was so horrified by the Battle of Solferino in 1859 that he started the Red Cross!
- Maz Pasteur and Koch hated each other so much after the Franco-Prussian war of 1870 that they carried on the rivalry in their research, each trying to better the discoveries of the other, and that was a major cause of the development of the Germ Theory.

- Chaz Don't forget all the developments in tropical medicine: Manson and his work on elephantiasis and Gorgas and the defeat of yellow fever in Panama. These were part of the drive by nations to expand their empires.
- Maz Also, during the Boer War, the British government found that almost half the volunteers to the army were unfit for service, so that's why they brought in many of the public welfare reforms at the beginning of the 20th century.
- Chaz Landsteiner discovered blood groups in 1900 but it was the First World War which led the government to set up the National Blood Transfusion Service.
- Maz So you're saying that war did not cause the advance, but it caused its implementation.
- Chaz Exactly. War provided the incentive for change.
- Maz And a motivation. After the horrors of failing to save soldiers suffering from blood poisoning during the First World War, a young Scottish doctor called Alexander Fleming came home determined to discover a cure for septicaemia, and in 1928, he succeeded – he discovered penicillin, which proved to be the key breakthrough in curative medicine.
- Chaz And the really weird thing is that it was only produced in tiny quantities – until the Second World War, when the needs of American soldiers led Florey and Chain to develop a process to mass-produce it.
- Maz The Second World War also led to the development of plastic surgery. Archibald McIndoe and the Guinea Pigs [were] airmen badly burned in plane crashes.
- Chaz So war helped the development of practical first aid in the ancient world, stimulated the concept of public health in Roman times, prompted the development of painkillers in medieval times, and in the modern world has stimulated advances in nursing, the Germ Theory, the welfare state, antibiotics and plastic surgery.
- Maz Yes. I don't think we can say it has been the biggest cause of medical advance, because we haven't compared its impact to other possible causes. But I think we can safely say that war has had a significant effect on medicine over the centuries.