

Exclusive: Army testing augmented reality glasses so medics can carry out remote ops in war zones

The British Army is developing a series of communication devices to ensure troops have the best medical capabilities wherever they are based

By [Hayley Dixon](#) 29 December 2020 • 9:00pm



Lance Corporal Jack Fitter RAMC wears the Microsoft HoloLens 2 glasses, which enable a field medic to confer with senior medical staff remotely anywhere in the world CREDIT: Heathcliff O'Malley

It sounds like the stuff of science fiction – a specialist carries out surgery from anywhere in the world, relaying instructions straight onto futuristic glasses.

But the technology is already being trialled by the British Army, which is developing a series of hi-tech communication devices to ensure troops have the best medical capabilities wherever they are in the world.

In the trial, codenamed Project Lara, some of the telemedicine capabilities are already being used in the field.

It includes an [augmented reality kit which allows specialists to direct operations](#) from thousands of miles of way, a secure messaging system so that

medical information can be shared and assessed from anywhere in the world and a system that remotely monitors and stream to an expert a patient's vital signs.



Lt Col Oli Bartels RAMC CREDIT: Heathcliff O'Malley

Lt Col Oli Bartels, of the The Royal Army Medical Corps who is leading the project, said: “The further forward in the battlefield you go, the more that individual medic may need support.

“Generally you have junior people further forward and more senior people further back looking after a wider area.

“That single junior medic is the one that actually needs the best communications capabilities and traditionally, the further forward you go, the lower quality of communications you have.”

But by using the telemedicine being developed by Project Lara, which has been running for 18 months, frontline doctors can tap into some of the best medical advice in the world in a matter of moments.

On deployment the Armed Forces will only normally be accompanied by two surgeons – a general and an orthopaedic surgeon – who are given basic training in but not specialist in every surgical speciality.



L Cpl Jack Fitter RAMC using a Butterfly handheld ultrasound probe, which allows teleguidance from a remote radiologist CREDIT: Heathcliff O'Malley

If they are then required to carry out neurosurgery, for example, they can use a “surgical reach back” to a “specialist who does it every day who can keep them on the straight and narrow and provide advice and support”.

This could mean cameras mounted on or around the frontline surgeon with the specialist then relaying instructions directly onto a computer or a set of augmented reality glasses that the medic is wearing.

The specialist watching remotely could even beam instructions onto the glasses, a Microsoft HoloLens 2, using an overlay to show the medic where to look.

The remote surgery capability is currently trialled in two locations overseas.

“We've had surgeons saying ‘I'm so glad that you're looking over my shoulder’. That's how they think about it, that they are operating like they would in a theatre looking over their shoulder and supporting them,” the Army anaesthetist told the Telegraph.

Lt Col Bartels said that as well as allowing remote surgery, it will also help to decide when to do nothing and treat the patient further back, leading “to a better patient outcome because a specialist has been able to be involved earlier”.

The Army is also running a similar project codenamed Morpho, which is using a tele-guidance ultrasound system to allow deployed medics to perform ultrasounds while being guided by a remote radiologist.



L Cpl Jack Fitter RAMC training in a simulated jungle environment using some of the latest technology available to Army Medics in the field including the Phillips Tempus Pro patient monitor and Masimo MightySat pulse oximeter CREDIT: Heathcliff O'Malley

Another element of Project Lara is an app which is an “enclosed area just for the MoD” which allows messages to be sent between clinicians for expert opinion. Everything that they deploy has “military grade security”.

It is currently being trialled by 1,500 personnel across the Army, Navy and Air Force and is expected to be rolled out across the services by April.

It tells the user which specialists are available immediately and has “reduced our response time from about three days when we used email, down to about 15 minutes to one hour”, Lt Col Bartels said.

By allowing a second opinion the technology also allows the Ministry of Defence to ensure that they only carry out specialist operations, or evacuations, when it is clinically necessary and that they can get the casualty to the best place as quickly as possible.

“It is about joining those dots, getting the right person to the right place at the right time, even if it's electronic, to be able to deliver the service,” said Lt Col Bartels, whose 23 years of service include three tours of Afghanistan and treating Ebola patients in Sierra Leone.

He said that the Covid pandemic, which forced people to switch to remote working, often over video, has helped people to accept that the technology can work.