

EIP



License to heal

The hallmark of 5G is extremely low latency speeds. In theory, robotics could be controlled from long distances with just 0.1 seconds of a delay.

In a medtech context, this means, for example, that a highly-skilled doctor in an economically developed country could perform remote surgery almost anywhere on Earth, provided the 5G infrastructure is in place.

Surgeons could react to a bleed with the kind of speed required when operating in real-time. It is not hard to imagine how this could benefit patients, for example, in less economically developed economies which do not have a comparable standard of health infrastructure or trained personnel.

Procedures of this type will require a major expansion in the existing 5G infrastructure.

One feature of 5G is that it requires many more base stations per square mile than previous generations of cellular technology. But the technical capabilities are there.

In 2019, Huawei, one of the world's leading providers of 5G technology, performed the first live experiment with 5G-enabled surgery on an animal.

A collaboration with a hospital in Fujian and a local robotics company, Huawei reported that the operation achieved "neat" surgical wounds with "no trace of blood in the whole process", while the animal's vital signs were stable following the procedure.

The possibilities for healthcare do not end there. The automotive industry, another sector that has engaged with the potential of 5G perhaps more than any other, is developing driverless vehicles. And the benefits of this work will not just be limited to consumer cars. We may also see 5G-connected ambulances, which have already been the subject of extensive research.

In Milan, Vodafone has been trialling the use of 5G to connect ambulances with hospitals, offering a higher standard of care than previously thought possible.

5G can allow paramedics to send 360° images to hospitals in real time, and instantly review patients' medical histories. It could also transform the scale of care that can be offered in an ambulance before a patient reaches the hospital.

Using emerging technologies such as artificial intelligence and augmented reality (AR), powered by 5G's low-latency speeds, doctors can instruct paramedics on performing operations which normally would require a patient to be present in the hospital.

Similar trials carried out in the UK by Ericsson, King's College London, and the National Health Service allowed clinicians to perform surgery remotely using an AR headset and a joystick.

The rest of this article is available to download as part of our 'what's next for medtech' whitepaper. Download for free [here](#).