News story: New test for sepsis could improve survival rates thanks to Dstl scientists

A new test for sepsis, which globally claims 6 million lives a year, could soon be available thanks to an innovation by scientists at the Defence Science and Technology Laboratory (Dstl).

The ground-breaking innovation will mean that patients with sepsis stand a much better chance of survival as diagnosis and treatment can take place before symptoms even appear.

For patients that have contracted sepsis, every treatment hour is crucial as survival rates can drop by up to 8% per hour, and if detected and treated early enough there is a significant increase in recovery and survival rates. However, the current bacterial diagnosis method needs the patient to show symptoms of having sepsis by which time the condition is already well advanced. It then additionally takes a number of hours and possibly days for test results to come back during which time the patient's condition will have deteriorated further.

The new Dstl innovation can detect sepsis before symptoms appear and provides fast and accurate results to give medical teams hours or even days of critical extra time to treat this life-threatening condition.

Minister for Defence Procurement Stuart Andrew said:

> This crucial breakthrough in sepsis treatment is an outstanding example of the pioneering research carried out by Dstl scientists and highlights how lessons learned on the battlefield can have a huge impact on improving the day-to-day lives of UK citizens.
>
> We continue to see how strong investment in defence results in knock-on benefits across a huge range of areas from revolutionary medicine to advanced mechanics.

It uses 'biomarkers', or predictors, that sepsis is present and has been demonstrated to be 97% accurate, following a decade-long study of 4,385 surgery patients in Germany and the UK.

Dr Roman Lukaszewski, the lead Dstl scientist behind the innovation, said:

> This breakthrough comes from many years of work in this area to help Service personnel survive injury and infection on the front line. By detecting sepsis earlier, the therapeutic window is extended, treatments are more effective, and survivability rates

> are potentially increased.

In order to make this innovation available, Dstl has turned to its commercialisation organisation, Ploughshare Innovations, which is currently looking for a licensee to turn the invention into a product.

Dr Mark Gostock, from Ploughshare Innovations and responsible for getting this innovation into industry commented:

> This innovation is a step-change in the pre-determination of sepsis and could potentially help millions of people worldwide. We are keen to see it put to good use and are actively seeking partners to turn it into a product to allow earlier treatment of sepsis which in turn, improves survivability and reduces treatment costs.

Sepsis affects around 30 million people each year worldwide and is increasing at a rate of 8 – 13% each year. In the UK, it incurs costs of around £15 billion and is responsible for more deaths than bowel, breast and prostate cancer combined.

For more information on the licensing opportunities for this invention, please visit the Ploughshare site.