

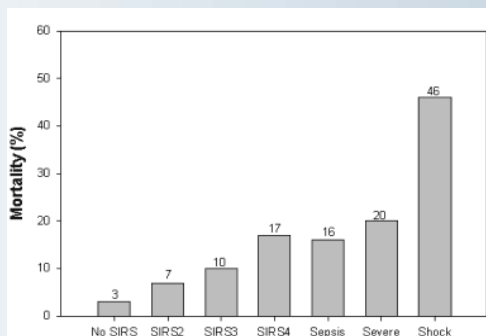
# Early detection of sepsis

## Background

Post-operative or post-traumatic sepsis remains one of the leading causes of disease and death in hospital populations. Early diagnosis is essential to avoid a high (~30%) death rate. Dstl has identified a panel of real time PCR biomarkers that can discriminate between patients with sepsis, with systemic inflammatory response syndrome (SIRS), or with neither condition, days before clinical symptoms are seen. A non-linear statistical analysis is used to discriminate between markers and predict patient outcomes.

## Technology

Utilises a panel of real time RT-PCR biomarkers that can identify patients with sepsis days before clinical symptoms are seen.



**Mortality increases with increase in number of SIRS symptoms<sup>1</sup>**

Early clinical data has been published, and a ten thousand patient, multi-site study is in progress. A validation study on a small number of samples from this larger study has been completed successfully.

## Applications

- Early diagnosis of post-operative or post-traumatic stress
- Monitoring of sepsis and SIRS clinical trials

<sup>1</sup> Rangel-Frausto, M., Pttet, D., Costigan, M., et. al. The natural history of the systemic inflammatory response syndrome (SIRS). JAMA 273:117-123, 1995

## Benefits

- Allows the identification of sepsis days before clinical symptoms are seen
- Extends the therapeutic window for sepsis and SIRS, leading to reduced mortality rates and lower treatment costs
- Can discriminate between sepsis, SIRS, and negative controls
- High sensitivity (91%) and specificity (80%) in an initial published clinical trial

## Intellectual Property

Patents pending in USA and Europe:

WO 2006/061644.

Publication:

*Presymptomatic prediction of sepsis in intensive care unit patients.* Lukaszewski RA et al. Clin Vaccine Immunol. 2008 Jul;15(7):1089-94.

## Licensing & Partnering Opportunity

For further information, please contact:

Taj Mattu, DPhil

T:01794 301329 M:07775 812895

E: [tajmattu@ploughshareinnovations.com](mailto:tajmattu@ploughshareinnovations.com)