Sepsis: the LightCycler SeptiFast Test MGRADE®, SepsiTest™ and IRIDICA BAC BSI assay for rapidly identifying bloodstream bacteria and fungi – a systematic review and economic evaluation

Matt Stevenson,[1]* Abdullah Pandor,[1] Marrissa Martyn-St James,[1] Rachid Rafia,[1] Lesley Uttley,[1] John Stevens,[1] Jean Sanderson,[1] Ruth Wong,[1] Gavin D Perkins,[2,3] Ronan McMullan[4,5] and Paul Dark[6,7]

[1]School of Health and Related Research, University of Sheffield, Sheffield, UK
[2]Warwick Clinical Trials Unit, University of Warwick, Coventry, UK
[3]Heart of England NHS Foundation Trust, Coventry, UK
[4]Centre for Experimental Medicine, Queen's University Belfast, Belfast, UK
[5]Belfast Health and Social Care Trust, The Royal Hospitals, Belfast, UK
[6]Institute of Inflammation and Repair, University of Manchester, Manchester, UK
[7]Salford Royal NHS Foundation Trust, Salford, UK

*Corresponding author

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Plain English summary

Three sepsis tests for identifying bloodstream bacteria and fungi

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Plain English summary

Sepsis is estimated to cause 37,000 deaths per year in the UK. Early and appropriate treatment can reduce the risk of sepsis-related death. New tests can detect bacteria and fungi in the blood much quicker than standard practice, allowing treatment changes to occur faster.

This report looked at the clinical effectiveness and cost-effectiveness of three tests: LightCycler SeptiFast Test MGRADE® (Roche Diagnostics, Risch-Rotkreuz Switzerland); SepsiTest™ (Molzym Molecular Diagnostics, Bremen, Germany); and the IRIDICA BAC BSI assay (Abbott Diagnostics, Lake Forest, IL, USA). These tests are designed to provide the clinician with a result regarding whether or not a patient has sepsis and which bacterium or fungus is the cause, and are much quicker than current methods. A review of the published literature showed that the tests are better at correctly identifying patients without sepsis than those with sepsis, but that all three tests are imperfect.

However, because of limitations in reporting and study quality, these data should be treated with caution. A review of the published literature showed that the tests can decrease the time at which the clinician received the result and decrease the time at which some patients changed to a better treatment within clinical trials. However, these benefits may not be realised in clinical practice. Furthermore, key benefits (reduced mortality, reduced length of stay in intensive care units and hospital, and reduced costs of treatment) of the new tests had yet to be proven within clinical trials. Expert clinicians were asked to provide estimates of these benefits and the answers were, on average, positive, although individual clinicians held widely different views.

Given the markedly different results produced when the published evidence of benefits were used and when the estimates from the clinicians were used, no firm conclusions could be made regarding the likely cost or benefits associated with the three tests. In order to provide better estimates, studies should be undertaken where information from the tests is allowed to change clinical practice and for these results to be compared with those from current practice.

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Editorial contact: nihredit@southampton.ac.uk

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This report

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