

A commercial innovative diagnostic test for sepsis diagnosis directly from blood

Lisa Simms¹, Corey Davies¹, Nadeesha Jayasundara¹, Sumeet Sandhu¹, Alex Pintara¹, Raffaella Giardino¹, Anton Lord², Flavia Huygens¹

¹Microbio Ltd, Brisbane, Australia

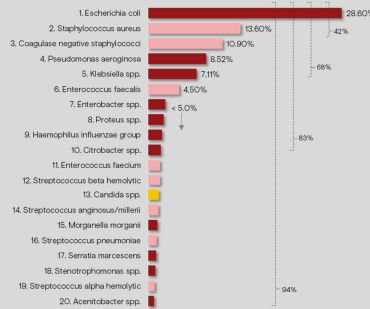
²Specdata Consultants, Brisbane, Australia

INTRODUCTION

Early and accurate sepsis diagnosis can save lives and billions in healthcare costs. The sepsis burden in Australia is 55,000 cases per year and 8,700 deaths per year, which include sepsis occurring outside hospitals¹. Adoption of InfectID-BSI could have a significant impact on clinical management of sepsis patients.

InfectID-Bloodstream Infection: Designed to improve the treatment of BSIs and sepsis

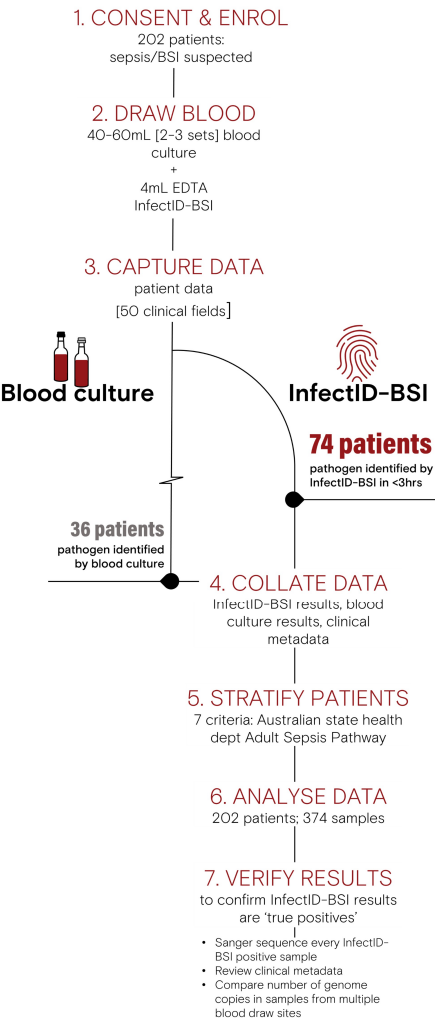
A bioinformatics approach underpins this highly discriminatory SNP fingerprint assay to detect and identify 26 of the most prevalent sepsis-causing bacteria and yeast directly from blood *in less than 3 hours*. The target pathogens for InfectID-BSI were selected based on research published by Opota and others in 2015, which identified these 20 pathogens responsible for causing 94% of sepsis cases in their multi-centre study cohort².



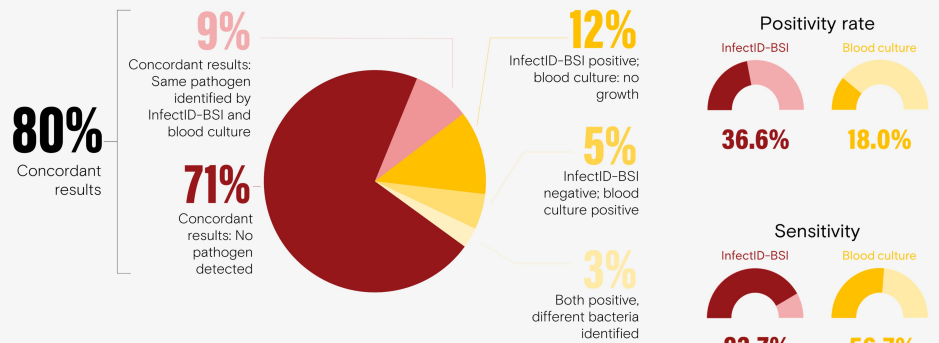
InfectID-BSI target pathogens

GRAM NEGATIVE	GRAM POSITIVE	YEAST
<i>Escherichia coli</i>	<i>Staphylococcus aureus</i>	<i>Candida albicans</i>
<i>Pseudomonas aeruginosa</i>	<i>Staphylococcus epidermidis</i>	<i>Candida auris</i>
<i>Klebsiella spp.</i>	<i>Enterococcus faecalis</i>	<i>Candida dubliniensis</i>
<i>Enterobacter cloacae</i>	<i>Enterococcus faecium</i>	<i>Candida parapsilosis</i>
<i>Proteus mirabilis</i>	<i>Streptococcus anginosus</i>	<i>Candida tropicalis</i>
<i>Citrobacter freundii</i>	<i>Streptococcus pneumoniae</i>	<i>Candida glabrata</i>
<i>Morganella morganii</i>	<i>Streptococcus mitis</i>	
<i>Serratia marcescens</i>	<i>Streptococcus agalactiae</i>	
<i>Stenotrophomonas maltophilia</i>	<i>Streptococcus pyogenes</i>	
<i>Acinetobacter baumannii</i>	<i>Streptococcus bovis</i>	
	<i>Aerococcus viridans</i>	

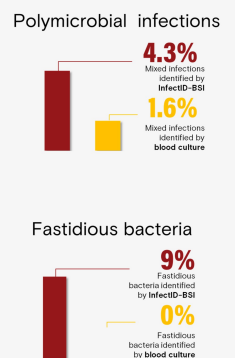
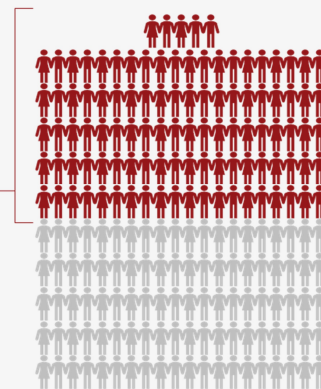
METHODS



RESULTS



For every 100 patients with a positive blood culture, **InfectID-BSI** identifies bacteria in an **additional 105 patients**



CONCLUSION

InfectID-BSI outperforms traditional blood culture in true positivity rate, detection of mixed infections, detection of fastidious bacteria and time to result.

¹ George Institute for Global Health. 2021. The cost of sepsis in Australia.

² Opota, O., Croxatto, A., Prod'homme, G., Greub, G., 2015. Blood culture-based diagnosis of bacteraemia: state of the art. Clinical Microbiology and Infection 21, 313-322. <https://doi.org/10.1016/j.cmi.2015.01.003>