



Founded by Dr Elaine Spain and Dr Kellie Adamson, Irish company **Novus Diagnostics** first product **SepTec** is a point-of-care diagnostic device that screens blood for sepsis associated blood-stream infection, detecting and identifying pathogens within 15 minutes.

The test aims to prevent millions of deaths each year from sepsis. According to the founders, 49 million patients are diagnosed annually with sepsis with 11 million deaths; 80 per cent of these deaths could be prevented with rapid diagnosis and treatment. SepTec has received funding from Enterprise Ireland (EI), Science Foundation Ireland (SFI), and the European Innovation Council (EIC).

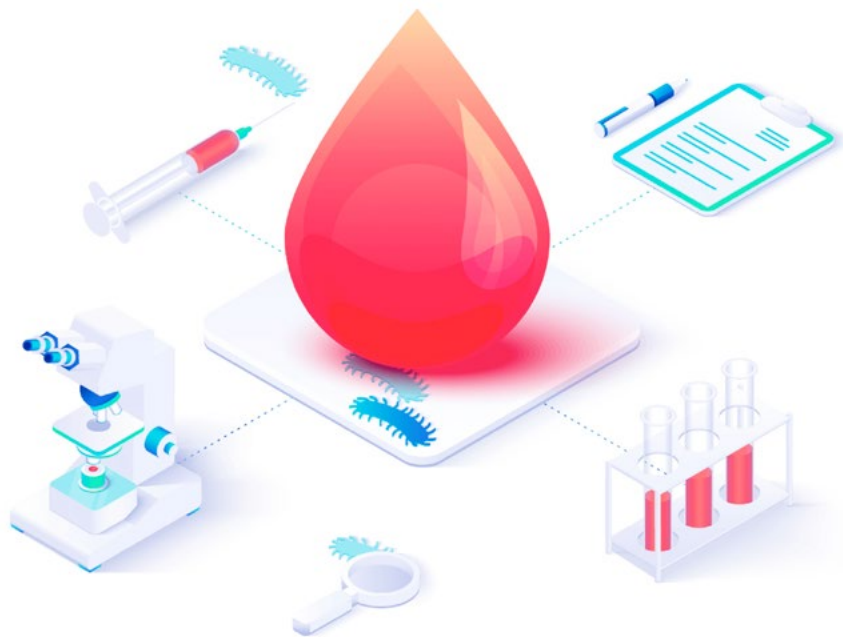
<https://septec.ie/>

## About Health Innovation Hub Ireland

Health Innovation Hub Ireland (HIHI) was established by the Department of Business, Enterprise and Innovation and the Department of Health, supported by Enterprise Ireland (EI) and the Health Service Executive (HSE) to drive collaboration between the health service and enterprise.

We offer companies the opportunity for pilot and clinical validation studies and the health service access to innovative products, services and devices that they may not otherwise be exposed to.

HIHI is built on the recognition that collaboration with enterprise can benefit patient care, patient pathways and outcomes.



## The Healthcare Challenge

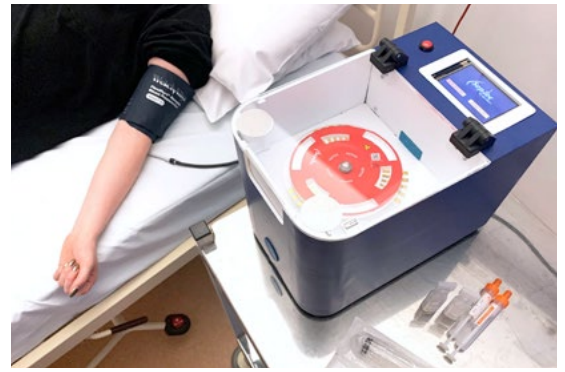
Sepsis is an often-fatal condition: the body launches an overpowering immune response to an infection that can lead to organ damage and in some cases death. An insidious condition, sepsis symptoms are non-specific, and patients present with flu-like symptoms such as shivering or aches/pains. Early diagnosis and treatment of sepsis are critical for patient outcomes. A critical unmet need in combating sepsis is a diagnostic system that increases

the speed of diagnosis and pathogen identification. **Current clinical diagnosis times are one to five days** depending on the pathogen type. Current protocol requires clinical staff to prescribe a broad spectrum antibiotic for any patient that is suspected of having sepsis- however patient outcomes are impacted by time (after symptom onset) of antibiotic administration and the specificity of treatment against the infecting pathogen.

# The Healthcare Solution

SepTec addresses the critical issues of time and accuracy for sepsis. It combines screening and pathogen family identification in one compact, near-patient instrument. By being at the bedside rather than lab-based, SepTec is more cost-effective, portable, easier-to-use and enables more testing in a greater range of care settings.

SepTec aims to improve patient outcomes by providing rapid sepsis causing blood-stream infection identification, impacting early intervention and reducing the inappropriate use of antibiotics that leads to the proliferation of antibiotic resistant pathogens.



## HIHI Role

HIHI provided critical access to clinical teams as part of the design stage of SepTec's development pathway. HIHI organised and facilitated a focus group for SepTec and Dolmen Design with staff from the Emergency Department (ED) at St James's Hospital. Key contact points from across the ED were recruited to discuss their role in the diagnosis and treatment of sepsis in the ED and map the patient journey.

The HIHI project enabled SepTec to gain insight into the diagnosis and treatment of sepsis in an ED setting. It was originally envisaged that the product would be predominantly used in the Intensive Care Unit. Subsequent to the focus group in St James's Hospital, it became clear that a rapid sepsis test would be invaluable in the ED, thereby identifying a potential secondary market for the product.



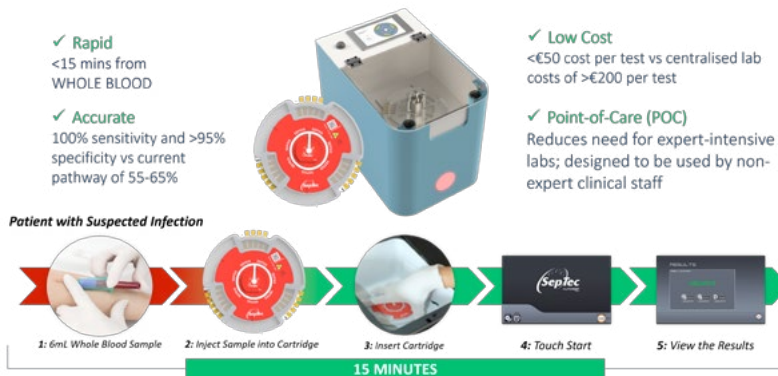
## Outcome Report

The purpose of the exercises carried out in the focus group was to gain an understanding of the typical clinical processes involved when treating a suspected case of sepsis in the ED. This includes mapping of current processes and understanding the time between each stage, from registration to testing and referral.

SepTec gained an understanding of what is required from a pathogen testing device in an Emergency Department context,

this information informed the design of their product.

HIHI connected SepTec with clinical individuals at St James's. The connections made at the HIHI focus group opened up the opportunity for further research to be undertaken; namely two 'Shadowing' days - one in the Microbiology Lab with a Chief Medical Scientist and Senior Lab Scientist, and the other in the ED with a Clinical Nurse Manager and Nurse Practitioner.



## Testimonial

*"We were delighted to have the opportunity to work with the Health Innovation Hub. As a company with a potentially disruptive innovative point of care technology in the early stages of development it was critical for us to map the patient/user journey, define clinical needs and better understand sepsis management within the clinical setting to inform our product design, positioning and critical user requirements.*

*The focus group and shadowing of the microbiology lab and ED achieved these goals and really focused the team on the next stages of development prioritising end user need outcomes which would not have been achieved without the HIHI team. We cannot thank the HIHI enough for this fantastic opportunity and would highly recommend any healthcare driven company that aims to benefit patient care, patient pathways and outcomes to apply to the HIHI."*

Kellie Adamson and Elaine Spain  
Co-founders Novus Diagnostics



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