

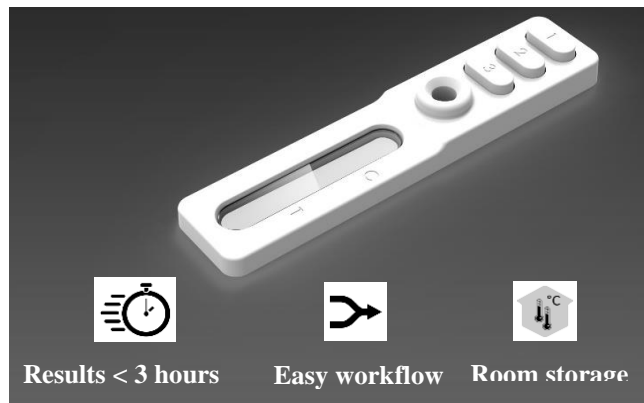


### Problem description




Sepsis is a condition characterized by the body’s inflammatory response to an infection. The rapid identification of the blood infection is key because, if sepsis is not treated with antibiotics, it can progress to severe sepsis or septic shock, and can lead to multiple organ failure and death. In the world, sepsis is estimated to be responsible for 27 million of hospital admissions and 8 million deaths per year. During the first 6 hours of inpatient, less than 50% of the sepsis patients have started the antibiotic therapy, increasing 10% of the mortality rate each hour without treatment. Blood culture is considered the gold standard for the identification of bloodstream bacteria and fungi infection. However, it has been estimated that, after 15 hours of blood culture, only 30–60% of blood cultures taken from patients with sepsis are positive.

### Solution concept

SeptiBell is a diagnostic device aids emergency physicians make better clinical decisions and optimize sepsis management. The first rapid test that identifies bacterial infections in the blood through immune activity, activating the Sepsis Code. Our approach explores how the immune system responds to an invading pathogen; in fact, detecting the specific immune response can determine infection earlier and more accurately than the bacterial identification techniques like blood culture or molecular methods directly from blood. Septic patients suffer from excess inflammation during 1-2 hours that leads to an immune-compromised phase. SeptiBell is a technological solution focused on improving clinical practice, health management efficiency, and benefit in early decision making of the sepsis patient.



### Team

 <p><i>Loop dx was founded in 2018 and is a Biodesign company based in Barcelona. The company specializes in discovering cost effective, accurate and timely methodologies and biomarkers for medical related problems that the global healthcare systems face every day.</i></p>	 <p><i>The ICAI School of Engineering of Comillas Pontifical University (Comillas) carries out research, development and innovation projects in several industry sectors. Specifically, the Bioengineering area at IIT has proven experience in design, development and prototyping of electronic devices.</i></p>	 <p><i>RJ was founded in 2014 and is an Industrial Design Engineering studio based in The Netherlands. It's main focus is to design and develop products for healthcare and sports, from first idea to production. At RJ products are always designed on consumers insights.</i></p>
--	---	---