## **MICROBIOLOGICAL** Sepsis **LABORATORY** (Multiplex Now with Extra Pathogens Tandem PCR) 1. Salmonella spp 2. Mycobacterium tuberculosis complex 3. Mycobacterium tuberculosis (Mpt64) 4. Toxoplasma gondii **Pathogens Covered** Cryptococcus neoformans . Candida sp. (C.albicans and C. glabrata) Enterobacteriaceae 6. E.faecium E.faecalis 8. Staphylococcus spp 10. P.aeruginosa 9. S.pneumo 11. P.mirabil<mark>i</mark>s A.baumannii 13. CMV C.trachomatis 16. Listeria monocytogene Details 15. Ureaplasma 17. Streptococcus spp **Drug Resistence** Sepsis **Markers** 19. pan-SHV

Sepsis is an inflammatory response to infection by bacteria /fungi, the estimated incidence of sepsis reaching approx.o.3%. The mortality of sepsis or even more, septic shock is still very high. This places sepsis/septic shock to major cause of death in the ICU world wide. Accordingly, there is an urgent need to reduce the uncertainty & time of today's blood culture diagnosis for pathogens to reduce morbidity & mortality of patients.

21. mecA

23. KPC

25. oxa1 27. oxa48

Molecular Biological methods, particularly POLYMERASE CHAIN REACTION(PCR), are generally accepted as a promising means of culture-flanking methods for early sepsis diagnosis, mostly because of its rapidity of time-to-result & independence of the growth of strains. SEPSIS PANEL is a direct blood PCR test, designed for the needs of fast routine sepsis diagnosis.<sup>3</sup>



20. CTX-M group1

VIM/NDM-1

28. CTX-M group9

22. CMY/DHA

Right Patient with Right drug at Right dose at Right time



## Dossier

Methodology

Multiplex Tandem PCR

Whole Blood(EDTA)

**Volume**:

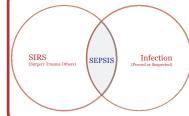
## **Rapid Dx Intervention**

Antibiotic Resistance G(-) Sepsis 153 Patients Pre-Rapid (81hrs) Dx vs. 112 with Rapid (23 hrs) Dx

With Rapid Dx

Time to Optimal Therapy	3.5x	Faster
Length of Stay	34%	Shorter
Mortality	>50%	Lower

Adapted from data presented in : Perez K et al.J Infect 2014, 69 (13) : 216-225



Venn diagram illustrating that sepsis lies at the intersection of infection and the systemic infection response syndrome (SIRS). Culture-proven infection is not a requirement, but a high clinical suspicion of infection suffices to define sepsis. The source of infection need not be blood/bacteremia but could be respiratory or abdominal or involve other sites. Many other noninfectious clinical conditions can lead to a clinical picture of SIRS, including major trauma or surgery, extensive burns & pancreatitis to name a few.

## Reference

 $\label{lem:http://www.ausdiagnostics.com/qilan/ADMainGeneList.jsp?ProductID=1589\&CatNo=3109601.1\\ Journal ASM.org/Laboratory Diagnosis of Sepsis? No SIRS, Not just yet.html. 2 Journal of Medical Microbiology (2013), 62, 223–231 DOI 10.1099/jmm.0.050385-0.3$ 

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