



BIOFIRE FILMARRAY

INTRODUCTION

The Clinical Microbiology Laboratory is establishing a new paradigm for improvements in healthcare for patients suffering from infectious diseases, thanks to the efforts of teammates, leaders, and directors. Over the past 8 months, teammates have been working hard validating and implementing new rapid diagnostic technologies, one of them being the BioFire FilmArray Blood Culture Identification (BCID) panel. This instrument has significantly improved turnaround time, providing better care for CHS patients.

FILMARRAY BCID ASSAY

The FilmArray BCID assay has decreased turnaround time for patient results through the use of multiplex, real-time polymerase chain reaction (PCR) technology. This assay, validated for positive blood culture bottles, can detect 24 of the most common causes of bloodstream infections and has decreased time to identification from 48 hours to approximately 4 hours. Process improvements are still being evaluated for an even faster identification. Additionally, the test can detect the 3 most common DNA markers of antibiotic resistance: *mecA*, which confers methicillin resistance to *Staphylococcus*, *vanA/B*, which confer vancomycin resistance to *Enterococcus*, and KPC which confers carbapenem resistance to the *Enterobacteriaceae*. In practical terms, this means that a patient will likely spend less time in the hospital and receive appropriate antibiotic therapy in a more timely fashion, based on the results of this test.

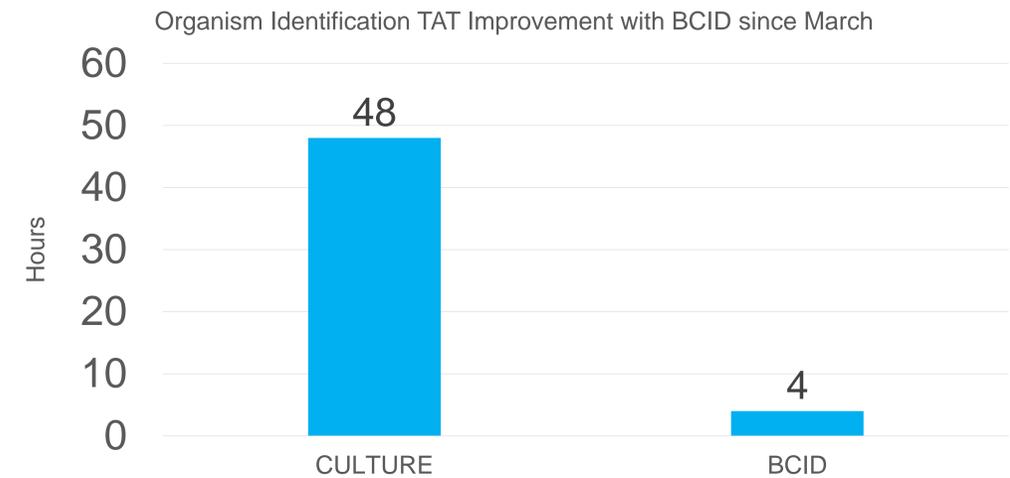
BIOFIRE FILMARRAY TORCH



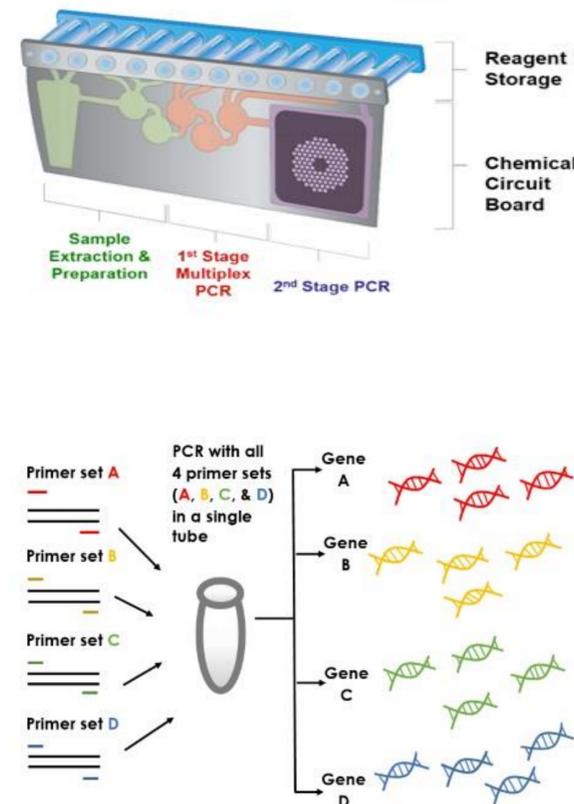
TARGETS

- Enterococcus* spp.
 - Listeria monocytogenes*
 - Staphylococcus*
 - Staphylococcus aureus*
 - Streptococcus*
 - Streptococcus agalactiae*
 - Streptococcus pyogenes*
 - Streptococcus pneumoniae*
 - Acinetobacter baumannii*
 - Haemophilus influenzae*
 - Neisseria meningitidis*
 - Pseudomonas aeruginosa*
 - Enterobacteriaceae*
 - Enterobacter cloacae* complex
 - Escherichia coli*
 - Klebsiella oxytoca*
 - Klebsiella pneumoniae*
 - Proteus* spp.
 - Serratia marcescens*
 - Candida albicans*
 - Candida glabrata*
 - Candida krusei*
 - Candida parapsilosis*
 - Candida tropicalis*
- mecA* – methicillin resistance
vanA/B – vancomycin resistance
 KPC – carbapenem resistance

BLOOD CULTURE IDENTIFICATION TAT IMPROVEMENT



PROCESS MULTIPLEX PCR



MILESTONES

IMPLEMENTATION TIMELINE

January 30th

- 1) Biofire Film Array go-live

February

- 1) Processes developed to track Turn-Around-Time (TAT) of positive blood cultures from receipt to BCID result.

March

- 1) BioFire Film Array 100% operationalized with all sites sending positive bloods to Core Lab

April:

- 1) Average TAT for positive blood culture organism identification has reduced by 1.6 days (34.7% improvement)

June:

- 1) Standard work for positive bloods resulted in a 10 minute reduction in overall processing time (23.7 hrs. benefit per week).