What Our Customers Say

ePlex® Blood Culture Identification Panels (BCID) Improving Clinical Outcomes for Patients with Sepsis and BSI

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AdventHealth, Orlando
Orlando, Florida

- Major healthcare system with 8 region-based divisions; Orlando division is the main campus serving 1200 beds
- Rated #1 Hospital in Greater Orlando by U.S. News & World Report 2020-2021
- The Infectious Disease & Microbiology lab has ~70 full-time employees focused on virology, immunology, bacteriology, molecular testing, microbiology and mycology.

The Urgent Need

We had been using another multiplex PCR platform for blood culture identification (BCID) for more than 5 years that was able to provide organism identification and resistance markers, but it wasn't meeting our needs. With our diverse patient population, we found that there were several gram-negative pathogens that we were missing. We needed a technology upgrade that offered us expanded panels, more flexibility and was easier to work with.

The Solution

In June of 2020, AdventHealth Orlando chose to implement the ePlex Blood Culture Identification (BCID) Panels because they offer the broadest pathogen and resistance gene inclusivity compared to other rapid molecular panels, detecting about 95% of the organisms commonly isolated from their blood cultures. They also recently implemented the ePlex Respiratory Pathogen Panel 2 (RP2).

Jose Alexander, MD
Clinical & Technical Director of the Microbiology, Virology and Immunology Laboratories

What drove you to choose the ePlex BCID Panels for your hospital?

Based on our evaluation, we found the GenMark BCID panels to be the most comprehensive for the mix of pathogens we see across our system. Ultimately, it came down to 3 factors for consideration:

1. We had a group of gram-negative organisms that we were observing in our facility, but we weren't able to rapidly identify them with our BCID platform.
2. We needed a broader gram-positive panel.
3. We wanted access to a fungal panel, which is providing significant and rapid results.

The GenMark panels met these needs and performed very well in our evaluation. We also found that it provided opportunity for us to improve patient care and antimicrobial stewardship by de-escalating unnecessary treatment, especially with the gram-positive panel, so we gave it the green light.

ePlex®

What are the benefits of ePlex BCID Panels?

First, they are simple to use compared to our previous process: one cartridge, one pipetting step, which helps our workflow, and keeps our staff from being overworked. Second, the panels have a larger spectrum of targets. We can now identify some of the organisms we had been seeing but were not able to rapidly identify with our previous BCID platform.

How has implementing the ePlex BCID Panels impacted patient care?

Having rapid identification allows you to implement policies based on results of the rapid PCR test without having to wait for susceptibilities. We implemented these policies with pharmacy which is the main driver of our antimicrobial stewardship program and saw that patients were being escalated in treatment based on a resistance marker detected or for organisms that were not covered by empirical treatment. We were also able to de-escalate patients from broad spectrum antimicrobials when the identified organism and clinical presentation strongly suggest a possible contaminant or an organism is known to be susceptible. Our capacity to cover gram-negatives extended more than 50-60 % with ePlex BCID Panels.

In the case of the gram-positive panel, we can now identify more gram-positive organisms that can be considered possible contaminants. It is helpful to have this data available to us rapidly because we know it is ideal to de-escalate therapy especially if the clinical condition of the patient is improving.

Can you provide an example of how the ePlex BCID Panels have helped you better manage care?

We recently had a case of a patient with a *Pseudomonas aeruginosa* detected that carried a metallo beta lactamase gene (VIM). Having the identification only 2 hours after the blood culture turned positive when it normally would take 72 hours to identify the organism was significant. This organism is very uncommon in blood cultures and the patient was in ICU and not on appropriate therapy since no empiric therapy includes coverage against metallo beta lactamases. We were able to adjust therapy within only 3 hours of positive blood culture, making a significant difference from the perspective of patient care.

How have the ePlex BCID Panels helped you advance antimicrobial stewardship?

Pharmacy and Microbiology form the core of the AMR stewardship team, providing multiple sources of data to create protocols for treatment and infection control. These panels allow us to trigger some of these protocols based on a particular pattern or result indicated, including the resistance mechanism detected.

The rapid fungal panel is a completely new front that we did not have before. Using the ePlex Fungal Pathogen Panel we now have protocols for treatment of fungal blood stream infections. Patients are now treated with the right antifungal within 2-3 hours of positive blood culture. These action protocols are being very well established because of these panels.

How have the BCID Panels helped you better manage patients with sepsis?

We know how important it is to have a sepsis patient on appropriate therapy, which in most cases is broad spectrum antimicrobials. The implementation of BCID is part of the rapid response for the sepsis protocol, because we are able to take action at the moment we confirm that there is an organism present. This allows for critical optimization of treatment. There is a second level optimization when full susceptibilities are returned roughly 48 hrs later. This initial tool is not a replacement for the susceptibility result, but it is an important tool that can provide the data for the initial optimization.

What has your experience been working with GenMark?

The pandemic hit the whole nation and because of it, we were forced to shift our focus from implementing the BCID panels to the Respiratory Pathogen 2 Panel with SARS-CoV-2. Even during those unprecedented transition times, the service and technical support was amazing. The support team proved to be a great asset and assisted with evaluation, installation, and technical support as well as with any issues we had, 24/7. The engagement my team has with GenMark started with the BCID panel and evolved to the RP2 panel. I appreciate how GenMark has worked with us in these hard times. We know we are working with a good partner. The service, from sales to tech support, was excellent!

For more information, visit GenMarkDX.com

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