

practical

# patient care

www.practical-patient-care.com

Issue 23 2019 • £31.00 €49.00 \$65.00

In association with:



## Read between the lines

How genomic sequencing is inspiring next-gen diagnostic detection

### On the offensive

Taking smart bandages from the battlefield to front-line healthcare

### Power tools

The app that provides a new approach to patient-centric care

E-CARE • ONCOLOGY • CRITICAL CARE • IMAGING TECHNOLOGY

# Integrated microbiology for better patient care

The success of any clinical microbiology laboratory is defined by its ability to accurately and rapidly test samples and report results to the medical team. Dr Danielle Brabant-Kirwan, a clinical microbiologist at Health Sciences North (HSN), talks about how **bioMérieux's** integrated solutions are helping the lab make a greater positive impact on antimicrobial stewardship and patient care.

**M**icrobiology labs are an integral part of healthcare systems faced with challenges including bloodstream infections, sepsis and multidrug-resistant organisms. Providing reliable results in the minimum amount of time is crucial. Like many labs today, Health Sciences North (HSN), in Sudbury, Canada, needed a means to refine its approach in this ever-more challenging healthcare environment.

Dr Danielle Brabant-Kirwan, clinical microbiologist at Health Sciences North (HSN), explains that to improve efficiency and workflow for identification (ID) and antimicrobial susceptibility testing (AST), and blood culture, HSN selected an integrated solution from bioMérieux, based on three platforms: BACT/ALERT VIRTUO for blood culture microbial detection; VITEK MS for microbial identification based on mass spectrometry; and VITEK 2 for antimicrobial susceptibility testing. These are complemented with powerful middleware, MYLA.

*“We’ve considerably reduced the time it takes to report ID and AST as well as negative blood cultures. We have been able to re-allocate our resources, increase productivity and extend our in-house testing menu.”*

“We’ve considerably reduced the time it takes to report ID and AST, as well as negative blood cultures,” says Brabant-Kirwan. “We have been able to reallocate our resources, increase productivity and extend our in-house testing menu.”

## Lab efficiency improves patient care

“Our average time to detection from the VIRTUO is 19.28 hours,” says Brabant-Kirwan, an improvement of 4.8 hours over the previous system. “As a fully automated

system, VIRTUO has also reduced labour-intensive hands-on steps and facilitated high-quality reports.”

Brabant-Kirwan says the lab now relies heavily on VITEK MS for identification. With a much more extensive database than the previous solution, covering most routine clinical isolates, it has greatly decreased the number of additional tests needed. For the most difficult organisms, she notes, that can mean two to four days faster identification.

AST workflow is also significantly improved with VITEK 2. “VITEK 2’s validation and reporting software programs are well designed and user-friendly,” says Brabant-Kirwan. “And quality is enhanced. Technicians really appreciate the extra layer of comfort using the validation software to recognise inconsistent antibiotic profiles.”

The flexible middleware solution, MYLA, is designed specifically for microbiology labs. “I have all the information from multiple instruments flowing into one intuitive, web-accessible software. I can customise and generate reports in minutes, or have them

on a schedule. This is key to being more efficient. It saves time and improves quality,” says Brabant-Kirwan.

“The overall integrated system has improved our turnaround time (TAT) metrics,” she adds. Total time savings for identification of an organism in a blood culture is, on average, 24 hours faster and susceptibility reporting is approximately 10 hours faster.

“This is very significant when considering the importance of time to appropriate

antibiotics for surviving sepsis,” explains Brabant-Kirwan. “Alerting the physician that their patient’s blood cultures are positive several hours earlier than what could previously be achieved can greatly improve patient care outcomes. Proper antibiotics can be administered in a timely fashion and then appropriately de-escalated.”

## Actionable information for antimicrobial stewardship

HSN’s Antimicrobial Stewardship Program (ASP) has antibiotic cascades with very limited antibiotics being released as a first line to ensure responsible antibiotic use. The VITEK 2 software enables custom rules to help technicians confidently report appropriate antibiotics. “Strategic and selective culture and AST reporting, along with interpretative comments, helps clinicians better understand the culture results for proper antimicrobial prescribing,” says Brabant-Kirwan.

As a member of HSN’s ASP committee, Brabant-Kirwan recognises MYLA’s impact for these needs as well. “We do a lot of data mining to be proactive in identifying trends and resistance patterns in bacteria,” she says. “We need to provide feedback to antibiotic stewardship committees, infection prevention and control, and our physicians, and epidemiology reports to provincial and national surveillance programmes.”

The services, training and consultancy by bioMérieux have further enhanced HSN’s capabilities and workflow. For Brabant-Kirwan, it is about relationships, “With a single company and integrated solution, you work very closely and develop a good working relationship. There’s a level of trust that develops.” ●

## For further information

[www.biomerieux-diagnostics.com](http://www.biomerieux-diagnostics.com)