August 2012

bioMérieux Connection Newsletter

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BIOMÉRIEUX

MALDI-TOF Draws Crowd at ASM 2012

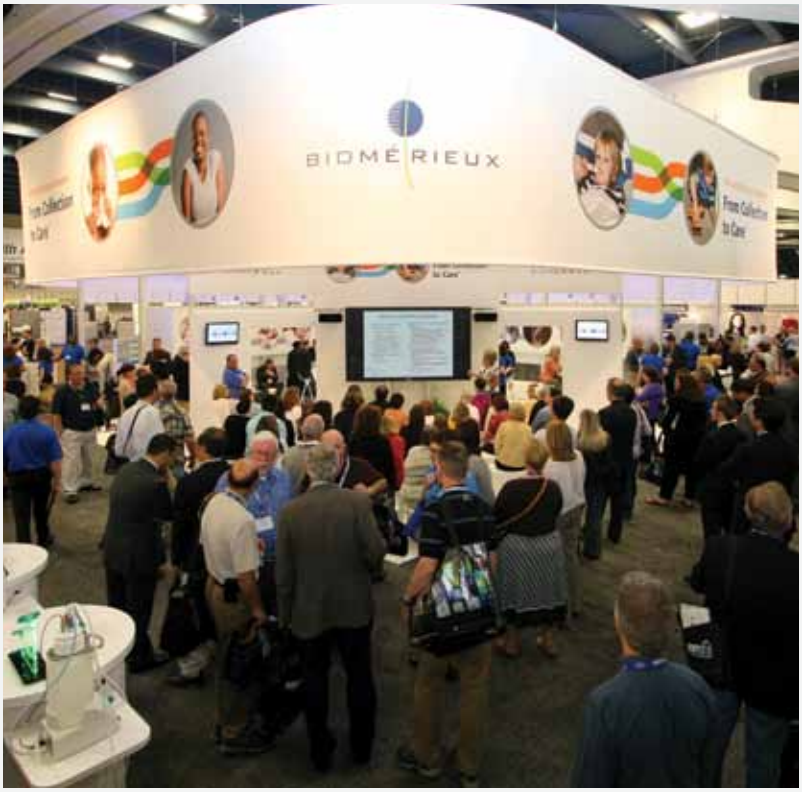
bioMérieux's In-Booth Knowledge Forum at the 2012 ASM featured two exciting talks on MALDI-TOF Mass Spectrometry by Dr. Melissa Miller from UNC School of Medicine, Chapel Hill and Dr. Christine Ginocchio from Hofstra University North Shore-LIJ Health System School of Medicine, Lake Success, NY.

Dr. Miller's talk centered on the "Power and Promise" of MALDI-TOF technology for future use in clinical microbiology. She demonstrated the bioMérieux VITEK® MS* system's ability to consolidate the accurate identifications of a breadth of different organism groups. The performance of those studied ranged from routine Gram negative rods and Gram positive cocci, various genera/species of Yeast and non-fermenting Gram negative rods isolated from Cystic Fibrosis patients.

Dr. Ginocchio's presentation focused on the "Positive Impact on Results and Workflow" of the VITEK MS. She shared her experiences with an elegant workflow aided by the system's Prep Station. The Prep Station's graphical software, simple sample acquisition and identification result reporting make the VITEK MS easy to use. Her talk also focused on impressive results generated across Gram negative and Gram positive organisms including several anaerobic species.

The interest in VITEK MS MALDI-TOF technology was very high as evidenced by the "standing-room-only" setting for both talks with attendees spilling into the periphery of the presentation area. Both presentations can be viewed online at www.biomerieux-usa.com/education > Symposia > 2012 ASM.

*Research use only. Not for clinical use.



COMING SOON:

New VITEK® 2 GN AST cards will be available October 1, 2012!

We are pleased to announce that the new formulation of Piperacillin/Tazobactam (Pip/Tazo) has been granted market clearance by the FDA, and will be offered on new Gram negative antibiotic susceptibility testing (GN AST) cards for both the VITEK® 2 and VITEK® 2 Compact systems. The new GN AST cards will also offer re-developed Imipenem with improved performance and new MIC calling ranges.

The new VITEK 2 GN AST cards will require software version 5.04. This mandatory software update should only be applied to VITEK 2 systems installed with VITEK 2 Systems Software 5.01. The VITEK 2 5.04 product update includes:

- *Piperacillin/Tazobactam with new formulation*
  - *MIC calling range ≤ 4 - ≥ 128*
- *Imipenem with expanded calling range*
  - *New MIC calling range ≤ 0.25 - ≥ 16*

A multi-center evaluation of the new Pip/Tazo for use on the new GN AST cards for VITEK 2 and VITEK 2 Compact systems was performed using both clinical and challenge isolates. Performance was strong compared to a standard broth microdilution method using CLSI breakpoints, showing 94.8% essential agreement, and 94.3% categorical agreement.

The **AST Configurator** is an interactive tool that will help you and your clinicians choose which new GN AST card is right for your institution. Simply plug in the antibiotics that meet your formulary needs, and the AST Configurator tool will recommend the most logical VITEK 2 card for you. Please visit the link below, and begin using the AST Configurator tool today!

www.totalast.com

AVAILABLE OCTOBER 1, 2012

VITEK® 2 Gram Negative Susceptibility Test Cards

Software Requirements: Version PC5.04
For electronic menu and the most current VITEK 2 information, please visit www.biomerieux-usa.com/vitek2
Please note: Your customer number is needed to access this site.

AST-GN66 (413398)	AST-GN67 (413399)	AST-GN68 (413431)	AST-GN69 (413400)	AST-XN06 (413944)*
Ampicillin	Amikacin	Amikacin	Amoxicillin/Clavulanic Acid	Amikacin
Ampicillin/Sulbactam	Ampicillin	Ampicillin	Ampicillin	Aztreonam
Cefazolin	Ampicillin/Sulbactam	Ampicillin/Sulbactam	Ampicillin/Sulbactam	Cefalotin
Cefepime	Cefazolin	Cefazolin	Cefazolin	Cefotaxime
Cefoxitin	Cefepime	Cefepime	Cefepime	Cefotetan
Ceftazidime	Ceftazidime	Ceftazidime	Ceftazidime	Cefoxitin
Ceftriaxone	Ceftriaxone	Ceftriaxone	Ceftriaxone	Cefpodoxime
Ciprofloxacin	Ciprofloxacin	Ciprofloxacin	Ciprofloxacin	Ceftizoxime
Ertapenem	Ertapenem	Doripenem	Ertapenem	Cefuroxime
ESBL Confirmation Test	ESBL Confirmation Test	Ertapenem	ESBL Confirmation Test	Doripenem
Gentamicin	Gentamicin	ESBL Confirmation Test	Gentamicin	Meropenem
Imipenem (new formula)	Imipenem (new formula)	Gentamicin	Imipenem (new formula)	Moxiflaxacin
Levofloxacin	Levofloxacin	Levofloxacin	Levofloxacin	Nalidixic Acid
Nitrofurantoin	Nitrofurantoin	Nitrofurantoin	Nitrofurantoin	Norfloxacin
Piperacillin/Tazobactam	Piperacillin/Tazobactam	Piperacillin/Tazobactam	Piperacillin/Tazobactam	Piperacillin
Tobramycin	Tobramycin	Tobramycin	Tobramycin	Tetracycline
Trimethoprim/Sulfamethoxazole	Trimethoprim/Sulfamethoxazole	Trimethoprim/Sulfamethoxazole	Trimethoprim/Sulfamethoxazole	Ticarcillin
				Ticarcillin/Clavulanic Acid
				Tigecycline

** Links with AST-GN69*

AST-GN70 (413401)	AST-GN71 (413402)	AST-GN72 (413403)	AST-GN73 (413404)	AST-GN74 (413941)
Amikacin	Amikacin	Amoxicillin/Clavulanic Acid	Amikacin	Amikacin
Ampicillin	Ampicillin	Ampicillin	Ampicillin	Ampicillin/Sulbactam
Ampicillin/Sulbactam	Ampicillin/Sulbactam	Cefalotin	Ampicillin/Sulbactam	Aztreonam
Aztreonam	Aztreonam	Cefazolin	Cefazolin	Cefazolin
Cefazolin	Cefazolin	Cefepime	Cefepime	Cefepime
Cefepime	Cefepime	Cefoxitin	Cefoxitin	Cefoxitin
Ceftriaxone	Ceftriaxone	Cefpodoxime	Ceftazidime	Ceftazidime
Ciprofloxacin	Ciprofloxacin	Ceftazidime	Ceftriaxone	Ceftriaxone
Ertapenem	Ertapenem	Ceftriaxone	Ciprofloxacin	Ertapenem
ESBL Confirmation Test	ESBL Confirmation Test	Cefuroxime	ESBL Confirmation Test	Gentamicin
Gentamicin	Gentamicin	Ciprofloxacin	Gentamicin	Levofloxacin
Meropenem	Imipenem (new formula)	Gentamicin	Levofloxacin	Meropenem
Nitrofurantoin	Meropenem	Levofloxacin	Meropenem	Nitrofurantoin
Piperacillin/Tazobactam	Moxifloxacin	Nitrofurantoin	Nitrofurantoin	Piperacillin/Tazobactam
Tigecycline	Nitrofurantoin	Piperacillin/Tazobactam	Piperacillin/Tazobactam	Tetracycline
Tobramycin	Tigecycline	Tetracycline	Tobramycin	Tigecycline
Trimethoprim/Sulfamethoxazole	Tobramycin	Tobramycin	Trimethoprim/Sulfamethoxazole	Tobramycin
	Trimethoprim/Sulfamethoxazole	Trimethoprim/Sulfamethoxazole		Trimethoprim/Sulfamethoxazole

AST-GN75 (413432)	AST-GN76 (413433)	AST-GN77 (413434)	AST-GN78 (413435)	AST-GN79 (413436)
Amikacin	Amikacin	Amikacin	Amikacin	Amikacin
Ampicillin	Ampicillin	Amoxicillin/Clavulanic Acid	Ampicillin	Ampicillin
Ampicillin/Sulbactam	Cefazolin	Ampicillin	Ampicillin/Sulbactam	Ampicillin/Sulbactam
Cefazolin	Cefepime	Aztreonam	Cefazolin	Cefazolin
Cefepime	Cefoxitin	Cefazolin	Cefepime	Cefepime
Cefoxitin	Ceftazidime	Cefepime	Cefoxitin	Cefoxitin
Ceftazidime	Ceftriaxone	Cefoxitin	Ceftazidime	Ceftazidime
Ceftriaxone	Ciprofloxacin	Ceftriaxone	Ceftriaxone	Ceftriaxone
Ciprofloxacin	Ertapenem	Ciprofloxacin	Ciprofloxacin	Ciprofloxacin
Ertapenem	ESBL Confirmation Test	Ertapenem	Ertapenem	Ertapenem
ESBL Confirmation Test	Gentamicin	Gentamicin	ESBL Confirmation Test	ESBL Confirmation Test
Gentamicin	Imipenem (new formula)	Imipenem (new formula)	Imipenem (new formula)	Gentamicin
Levofloxacin	Levofloxacin	Levofloxacin	Moxifloxacin	Meropenem
Meropenem	Nitrofurantoin	Nitrofurantoin	Nitrofurantoin	Nitrofurantoin
Nitrofurantoin	Piperacillin/Tazobactam	Piperacillin/Tazobactam	Piperacillin/Tazobactam	Piperacillin/Tazobactam
Piperacillin	Tigecycline	Tigecycline	Tigecycline	Tobramycin
Tobramycin	Trimethoprim/Sulfamethoxazole	Tobramycin	Trimethoprim/Sulfamethoxazole	Trimethoprim/Sulfamethoxazole
Trimethoprim/Sulfamethoxazole		Trimethoprim/Sulfamethoxazole		

AST-GN80 (413437)	AST-GN81 (413438)	AST-GN82 (413439)	AST-GN83 (413440)	AST-GN84 (413410)
Ampicillin	Amikacin	Amikacin	Amikacin	Amoxicillin/Clavulanic Acid
Ampicillin/Sulbactam	Amoxicillin/Clavulanic Acid	Ampicillin/Sulbactam	Amoxicillin/Clavulanic Acid	Ampicillin
Aztreonam	Ampicillin	Aztreonam	Ampicillin	Aztreonam
Cefazolin	Cefazolin	Cefazolin	Ampicillin/Sulbactam	Cefazolin
Cefepime	Cefepime	Cefepime	Aztreonam	Cefepime
Ceftazidime	Cefoxitin	Ceftazidime	Cefazolin	Ceftriaxone
Ceftriaxone	Ceftazidime	Ceftriaxone	Cefepime	Ciprofloxacin
Ertapenem	Ceftriaxone	Ciprofloxacin	Cefotaxime	Ertapenem
ESBL Confirmation Test	Ciprofloxacin	Ertapenem	Cefoxitin	ESBL Confirmation Test
Gentamicin	Ertapenem	Gentamicin	Ceftazidime	Gentamicin
Levofloxacin	Gentamicin	Imipenem (new formula)	Ceftriaxone	Imipenem (new formula)
Meropenem	Levofloxacin	Levofloxacin	Cefuroxime	Levofloxacin
Nitrofurantoin	Meropenem	Meropenem	Ciprofloxacin	Meropenem
Piperacillin/Tazobactam	Nitrofurantoin	Piperacillin/Tazobactam	Gentamicin	Nitrofurantoin
Tigecycline	Piperacillin/Tazobactam	Tigecycline	Meropenem	Tetracycline
Tobramycin	Tobramycin	Tobramycin	Nitrofurantoin	Piperacillin/Tazobactam
Trimethoprim/Sulfamethoxazole	Tetracycline	Trimethoprim/Sulfamethoxazole	Piperacillin/Tazobactam	Trimethoprim/Sulfamethoxazole
	Trimethoprim/Sulfamethoxazole		Trimethoprim/Sulfamethoxazole	

AST-GN85 (413874)	AST-GN86 (413942)	AST-GN87 (413943)	AST-GN89 (414367)
Amikacin	Amoxicillin/Clavulanic Acid	Amikacin	Amoxicillin/Clavulanic Acid
Ampicillin	Ampicillin	Ampicillin/Sulbactam	Ampicillin
Ampicillin/Sulbactam	Ampicillin/Sulbactam	Cefazolin	Aztreonam
Aztreonam	Cefazolin	Cefepime	Cefalotin
Cefazolin	Cefepime	Ceftazidime	Cefazolin
Cefepime	Ceftazidime	Ceftriaxone	Cefipime
Cefpodoxime	Ceftriaxone	Ciprofloxacin	Ceftazidime
Ceftazidime	Cefuroxime	Ertapenem	Ceftriaxone
Ceftriaxone	Ciprofloxacin	ESBL Confirmation Test	Ertapenem
Ciprofloxacin	Ertapenem	Imipenem (new formula)	Gentamicin
Doripenem	ESBL Confirmation Test	Levofloxacin	Levofloxacin
Ertapenem	Gentamicin	Meropenem	Meropenem
Gentamicin	Imipenem (new formula)	Nitrofurantoin	Nitrofurantoin
Meropenem	Levofloxacin	Piperacillin/Tazobactam	Piperacillin/Tazobactam
Nitrofurantoin	Nitrofurantoin	Tobramycin	Tetracycline
Piperacillin/Tazobactam	Tetracycline	Trimethoprim/Sulfamethoxazole	Tobramycin
Tigecycline	Tobramycin		Trimethoprim/Sulfamethoxazole
Trimethoprim/Sulfamethoxazole	Trimethoprim/Sulfamethoxazole		

Agar-Based Testing by an MIC Method Critical to the Management of Cystic Fibrosis Patients

The cause of cystic fibrosis (CF) is a mutation to the cystic fibrosis transmembrane conductance regulator (CFTR) gene, which is a common recessive mutation among those of European descent. In individuals that are homozygous, the mutation disrupts ion transport in the epithelial cells lining the passageways of the lungs, digestive system, pancreas, and many other organs. In the lungs, this leads to the buildup of a thick mucus that fosters chronic infections.

Treatment involves antibiotic therapy to inhibit the progression of these infections. Patients typically visit their CF clinic every three months, during which the antibiotic susceptibility of their lung flora is assessed and their antibiotic therapy re-evaluated. Because of the unique properties of bacteria growing in the CF lung, evaluation of their antibiotic susceptibility requires special protocols and techniques instead of the high-throughput automated methods employed for most samples in hospital microbiology laboratories.

bioMérieux spoke with **Dr. Blake Buchan**, Associate Director of Microbiology at Dynacare Laboratories, Milwaukee, WI and Instructor of Pathology at the Medical College of Wisconsin about the specific issues surrounding antibiotic susceptibility testing for CF isolates.

bioMérieux: Do some labs specialize in CF sample testing? If so, why? Is it the equipment, location, lab staff specialty?

Dr. Buchan: There are a number of hospitals/labs that are accredited by the CF Foundation. These centers are reviewed periodically to be sure that they are adhering to CF Foundation guidelines for patient management and monitoring/treatment of CF. These centers typically have CF specialists on staff who see patients but may also have faculty involved in active research programs relating to CF and CF microbiology. Both Children's Hospital of Wisconsin and Froedtert Hospital /Medical College of Wisconsin are CF Foundation accredited centers.

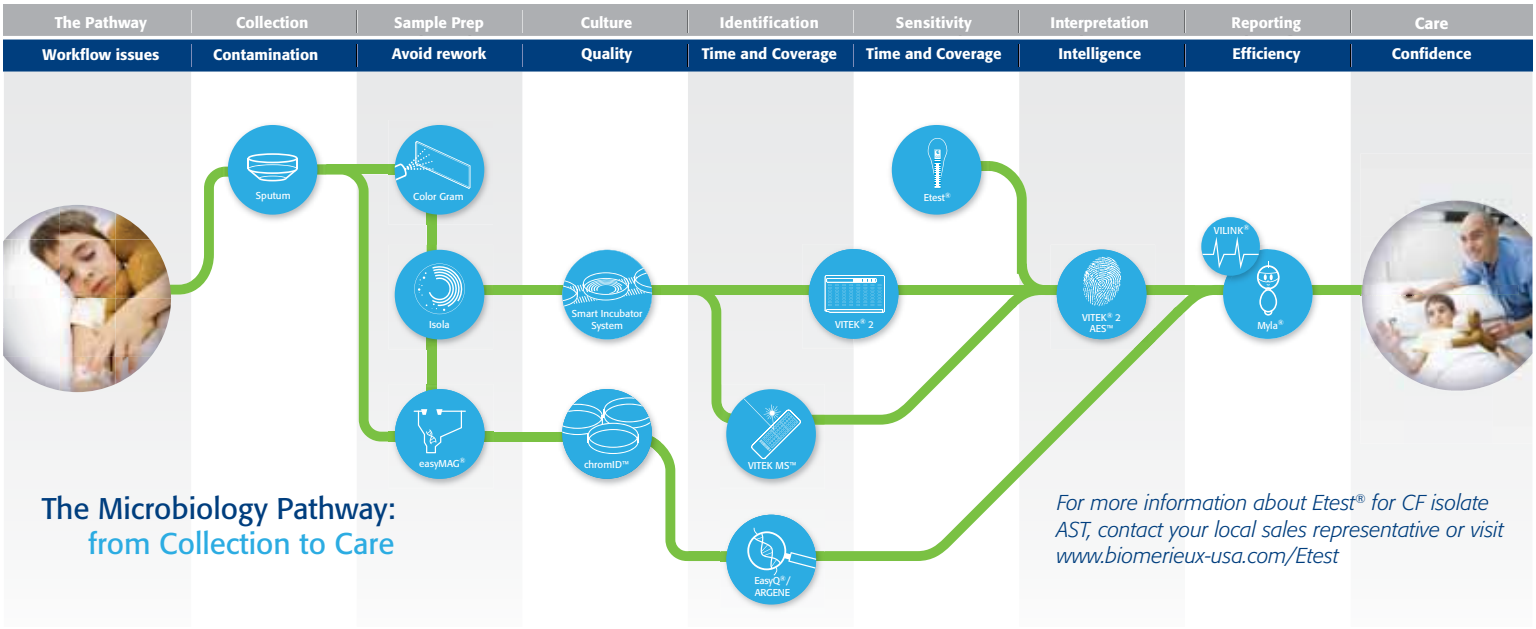
bioMérieux: Explain the problems that arise when relying on automated AST to test CF samples.

Dr. Buchan: Automated AST systems are an effective method to determine MICs for many of the pathogens encountered in the clinical lab. Interval monitoring of microwell cultures to detect growth in the presence of various concentrations of antibiotic can reduce the time it takes to establish an MIC. However, these systems are not ideal for assessing MIC of isolates from the CF lung.

Growth characteristics of these isolates can be quite abnormal and very different from "wild type" strains. Recurrent/continual exposure to antibiotics can lead to mutations that significantly reduce the growth rate of some of the bacteria present. A great example is the small colony variants (SCVs) of *S. aureus* that arise in response to sulfamethoxazole/trimethoprim therapy. Similar reductions in growth rate can be seen in *P. aeruginosa*, resulting from mutations that confer resistance, or as the result of growth as a biofilm. Automated AST systems can be under-calling of resistance in these strains. This occurs because no growth is detectable within the sampling timeframe established in the AST system algorithm.

Another major difference between isolates obtained from the CF lung and those obtained from other infections is modality of growth, specifically growth as a biofilm. *P. aeruginosa* in particular will tend to grow as a biofilm in the CF lung which leads to wholesale changes in gene expression including the overproduction of alginate. When isolated in culture these strains grow as extremely mucoid colonies. This can cause two problems. First, there is a general reduction in growth rate as the bacteria expend a disproportional amount of energy producing all of this alginate. Second, the colonies are composed of far less viable bacteria. That is, most of the mass of the colony is alginate. When making standard dilutions of these isolates for automated AST, you may significantly underestimate the actual CFU/ml present and thereby significantly under inoculate the automated AST. Similar to the effect of slow growing bacteria, the net effect can be under-calling of resistance.

bioMérieux: The Cystic Fibrosis Foundation has recommended using agar-based



The Microbiology Pathway: from Collection to Care

For more information about Etest® for CF isolate AST, contact your local sales representative or visit www.biomerieux-usa.com/Etest

methods such as disk-diffusion or Etest®. What are the benefits to such methods over the alternatives?

Dr. Buchan: Several things come to mind. Agar-based methods of AST are based on end-point observations (be it 18 or 24 hours) rather than algorithms aimed at determining if growth occurred over consecutive time intervals. It prevents calling "susceptible" too early and potentially missing growth of slower growing bacteria at later time points.

Another advantage of agar-based methods pertaining specifically to isolates from CF patients is the growth modality on solid medium versus in broth microwells. Growth on solid medium better mimics the environment of the CF lung. Specifically, it allows the growth of *P. aeruginosa* as a biofilm. For various reasons ranging from physical properties (reduced diffusion of antibiotics) to metabolic properties (generally reduced rate of metabolism in a biofilm), isolates growing as a biofilm are more resistant to antibiotics than free-living or "planktonic" counterparts. It makes sense to assess the susceptibility of isolates growing as a biofilm rather than planktonically in broth since this is the form that antibiotic therapy must be effective at treating during CF exacerbations.

Another characteristic of *P. aeruginosa* growing in biofilms is the evolution of different colony morphotypes and a trend toward increased antibiotic resistance. One of the manifestations of this can be "heteroresistance". This occurs when there is a subpopulation within a culture that has increased resistance to a drug due to a recent mutation or reduced growth rate. This phenomenon is more common in Gram-positive organisms but is also seen in *P. aeruginosa* isolated from CF lungs. On solid media, heteroresistance is observed as tiny isolated colonies within the disk or Etest strip zone of inhibition. When subcultured, these colonies will often demonstrate elevated resistance as compared to the parent strain. Strains displaying heteroresistance could be refractory to therapy due to the resistant subpopulation. With broth-based testing this resistant subpopulation is easy to overlook since it is only a minor constituent of the bacterial population and may not achieve sufficient growth to be detected by automated AST systems.

Agar-based disk or Etest methods also allow the lab to be nimble in response to changes in hospital formulary, new antibiotics, and changing breakpoints. Revision of breakpoints can be a major problem for automated AST panels that typically have a narrow range of dilutions for each antibiotic to maximize the number of antibiotics that can be included on a single panel. If breakpoints are revised out of this range, manufacturers need to develop new panels that need to be evaluated by the FDA through clinical trials. This can dramatically slow time to market and delay adoption of new breakpoints by clinical laboratories. In contrast, disk diffusion method and Etest are capable of much wider gradients of antibiotic concentration allowing flexibility in adjusting to changing breakpoints.

Early in CF, the isolates are relatively susceptible to many antibiotics. As resistance increases, MIC data can be used to change or optimize therapy.

TO READ THE FULL INTERVIEW WITH DR. BUCHAN, please visit Connection Online, www.biomerieux-usa.com/connection

Blake W. Buchan, PhD, is Instructor of Pathology at the Medical College of Wisconsin and Associate Director of Microbiology at Dynacare Laboratories, Milwaukee, WI. His interests include MALDI-TOF MS, PCR, and Microarray-based diagnostics for the detection of bacterial, viral and fungal pathogens, as well as detection of those etiologies directly from specimens and the use of novel techniques for antimicrobial susceptibility testing.

Baby Boomers and Sepsis: The Looming Crisis and the Tools to Avert It

Mark Oltermann, M.D., is director of the Medical ICU and Vice Chairman of the Department of Internal Medicine at John Peter Smith Hospital, a 430-bed Level 1 trauma center in Fort Worth, Texas. He manages four full-time intensivists at the hospital, which is home to the country's largest Family Practice Residency.

The number of sepsis cases in the United States is increasing and, due to an aging population, an increase in underlying conditions that can cause immunosuppression and the growing problem of antibiotic resistance, the sepsis-vulnerable community is getting larger.

Those 65 years of age and older account for one-eighth of the total U.S. population, yet this group accounts for two-thirds of all sepsis cases—and the Baby Boomer generation is now increasing this patient demographic exponentially. Fortunately there are tools such as procalcitonin (PCT) testing, along with Early Goal Directed Therapy (EGDT) for sepsis that hospitals can rely on to save lives. The challenge is getting more hospitals to use these tools.

"The first U.S. Baby Boomers will turn 65 in 2011, inaugurating a rapid increase in the older population during the 2010 to 2030 period. The older population in 2030 is projected to be double that of 2000, growing from 35 million to 72 million," according to a study published by the U.S. Dept. of Census in 2005 titled "65+ in the United States: Current Population Reports Special Study."

Data presented at the 2011 CHEST conference demonstrate the impact sepsis is having on patients 65 and older who have an underlying medical condition that leads to immunosuppression. The study by Fernandez et al. concluded that elderly patients with severe sepsis and immunosuppression, lung metastasis, neutropenia, and cisplatin therapy have a 30-day mortality rate much higher than sepsis patients in this age group who do not have these conditions or therapies. These immunosuppressed patients represented extremely common (and growing) disease states and therapies including cancer and steroid therapy.

Without additional biomarkers like lactate and PCT, doctors attempting to diagnose sepsis at the bedside are only about 70-80% accurate.

Two steps could be taken immediately to help prevent this looming crisis:

1. Require hospitals to make sepsis a core measure and push for standardizing protocols and reporting mortality rates. Until that happens, sepsis will be one of hundreds of problems competing for scarce resources and priority status.

2. Adopt screening tests for sepsis, such as PCT, as standard blood tests for all elderly patients who are admitted to the hospital. As noted earlier, this population is at increased risk, and may not always display the classic SIRS (systemic inflammatory response syndrome) criteria because of comorbid conditions and concomitant medications.

PCT is one of the more useful biomarkers for sepsis. It will rise well before lactate levels, allowing early therapy prior to the development of shock for septic patients. PCT could become another marker to bring patients into EGDT besides blood pressure and lactate levels. PCT also provides an earlier diagnosis of infection in patients already in the hospital for other reasons. Early appropriate antibiotics may be the most important effector of mortality in sepsis, and PCT will often rise before clinical diagnosis of infection is made, allowing for earlier initiation of antimicrobials. PCT will also help distinguish sepsis from non-sepsis SIRS. And finally, PCT can assist in defining the cause of shock or lactic acidosis in unstable patients that present but for whom diagnosis is still unclear. PCT rises with bacterial sepsis, but usually does not in cases of hypovolemic, cardiogenic, or obstructive shock.

For the truth to be told, we physicians are just not as good at diagnosing sepsis as we think we are. Without additional biomarkers like lactate and PCT, doctors attempting to diagnose sepsis at the bedside are only about 70-80 percent accurate. For such a deadly (but treatable) condition, this simply isn't good enough. I believe that through more widespread use of procalcitonin, 95 percent accuracy is very attainable.

"Mortality of Elderly Patients With Immunosuppression and Severe Sepsis," Juan Fernandez, MD; Andrew Shorr, MD; Eric Mortensen, MD; Antonio Anzueto, MD and Marcos Restrepo, MD, CHEST 2011, abstract.

Every 3-4 seconds someone dies of sepsis.

Join the fight against sepsis – World Sepsis Day September 13, 2012.

For more information, visit www.world-sepsis-day.org or www.SepsisKnowFromDay1.com.

September 13 2012 World Sepsis Day

SEPSIS KNOW FROM DAY 1

SEPSIS

KNOW FROM DAY 1™

Severe Sepsis Strikes 750,000 Americans Every Year.*

The first hour is critical – the first 24 hours can be decisive.
Procalcitonin provides critical biomarker information that can help increase the accuracy of early sepsis diagnosis.

Procalcitonin, a new biomarker with rapid results in 20 minutes for clear indications of:

- *Systemic bacterial infections*
- *Severe Sepsis*
- *Septic Shock*

Learn more at: www.SepsisKnowFromDay1.com

Visit us at IDWeek 2012, October 17-21, in San Diego at Booth #421.

VIDAS B·R·A·H·M·S PCT

*Angus DC, Linde-Zwirble WT, Lidicker J, et al. Epidemiology of severe sepsis in the United States: Analysis of incidence, outcome, and associated costs of care. Crit Care Med 2001; 29: 1303-1310.

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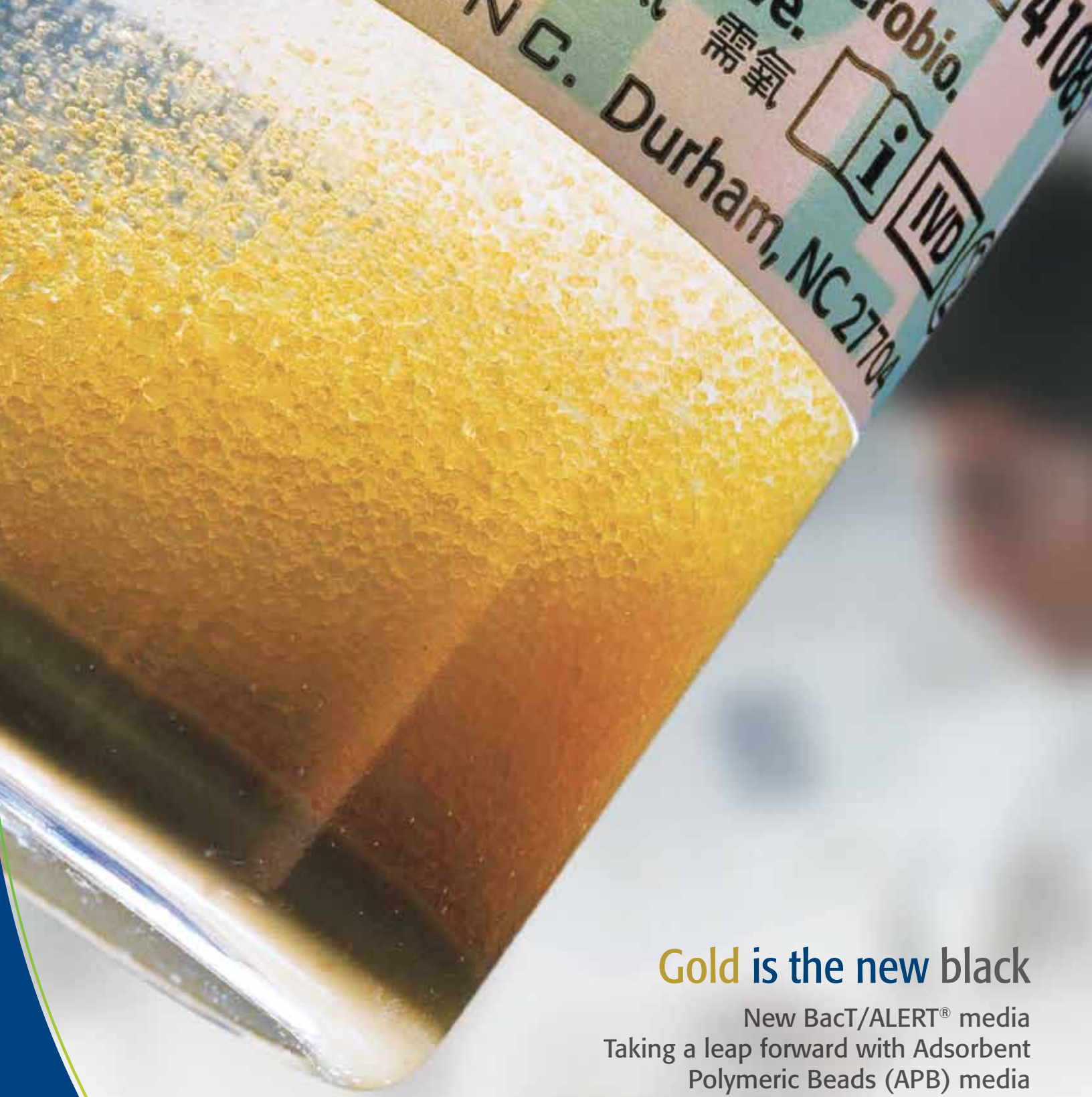

Gold is the new black

New BacT/ALERT® media
Taking a leap forward with Adsorbent
Polymeric Beads (APB) media

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COMING SOON:

BacT/ALERT 3D™ B.40 Firmware Upgrade

bioMérieux will begin shipping out the latest firmware update for the BacT/ALERT® 3D system.

The following features are included in the BacT/ALERT 3D Version B.40 firmware update:

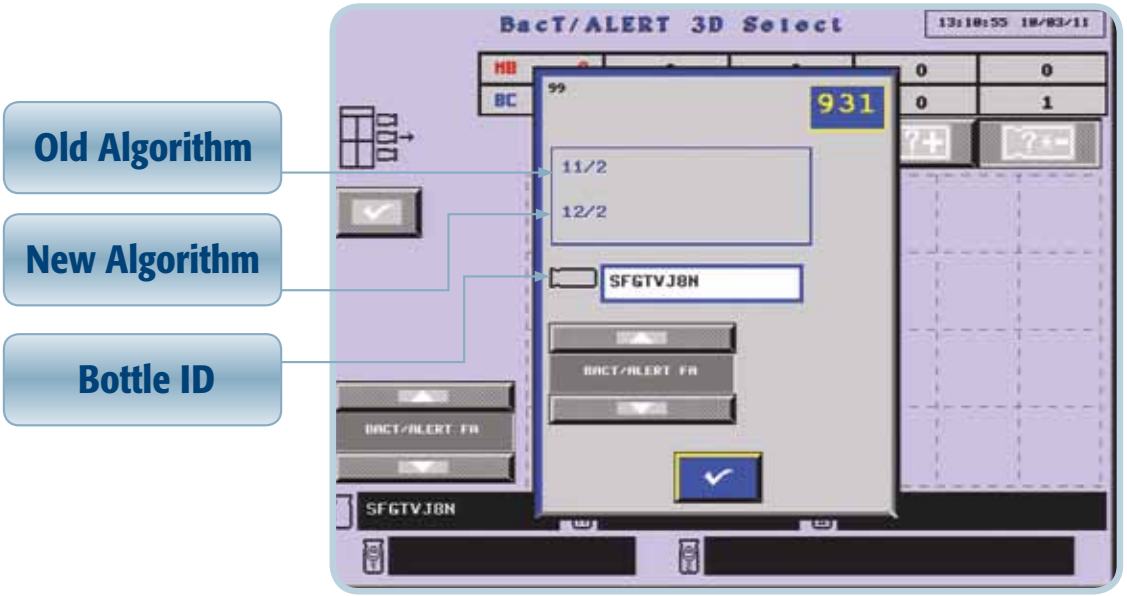
- Streamlined method for updating BacT/ALERT® 3D firmware
- Keyboard navigation on the Edit Data Relationships screens
- Electronic record of firmware updates and barcode customizations
- For SelectLink configurations only: Time-to-Detection result included when sending preliminary results to the Laboratory Information System (LIS)
- Bottle readings recalculated in the event of an algorithm change when identifying anonymously loaded bottles

The firmware update has a new "Algorithm Recalculation" feature that decreases the number of false positives due to anonymously loaded bottles. Once an anonymously loaded bottle is scanned, a new message box will appear.

When bottles are loaded anonymously, readings are analyzed using the standard default algorithm. With the B.40 firmware update, when anonymous bottles are identified, the firmware will re-analyze the bottle readings using the algorithm specific for that bottle type.

When the BacT/ALERT 3D Version B.40 firmware recognizes that the bottle type uses an algorithm other than the standard default algorithm, an alarm sounds and a Code 931 operator message appears to inform the operator that the test result will be recalculated.

New operator message box appears once anonymous bottle is scanned:



Keep this article as a reminder of the Algorithm Recalculation message.

100 Rodolphe Street
Durham, North Carolina 27712

www.biomerieux-usa.com

ADDRESS SERVICE REQUESTED

2012 EVENTS **CALENDAR**

bioMérieux Connection Newsletter

Date		Event and Location
AUG	**30**	**Denver Signature Event,** Denver, CO, Denver Aquarium Ballroom
SEPT	**5-7**	**PSS Medical Expo,** Orlando, FL
	9-12	**ICAAC,** San Francisco, CA
	26-29	**Intermountain State Seminar (IMSS),** Jackson Hole, WY
	26	**bioMérieux Sponsored Dinner at IMSS,** Jackson Hole, WY
OCT	**8-11**	**American College Emergency Physicians (ACEP),** Denver, CO, Booth #636
	17-20	**Northwest Lab Symposium,** Portland, OR
	17-20	**IDWeek/IDSA,** San Diego, CA, Booth #421
	25-27	**Association for Molecular Pathology,** Long Beach, CA

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