bioMérieux
Connection
NEWSLETTER
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IN THIS **ISSUE:**

Message from **bioMérieux**

Welcome to the first 2010 issue of bioMérieux Connection newsletter. As you know, we ask for your feedback annually in a year-end survey. This year, we'd like to hear from you more often. If you would like to comment on an article you read or suggest a future topic, please visit *www.biomerieux-usa.com/connection* to share your ideas.

It is clear you need more information on automating your laboratories. We are listening and look forward to sharing webinars, symposia presentations and other educational offerings on Full Microbiology Laboratory Automation (FMLA) with you in 2010.

In a rapidly changing healthcare environment, laboratory professionals are faced with providing high quality results and improving productivity, all while dealing with pressures related to the lack of skilled personnel and cost containment. Laboratory automation provides a cost effective means to standardize testing processes, enhance productivity and improve patient care. In order to maximize the use of automated systems, it is important for diagnostic companies to provide high quality and rapid support. Real-time instrument system monitoring and rapid, on-line assistance improves service levels.

This month, we are excited to introduce VILINK™, a highly secure connectivity environment that optimizes instrument "up time" to improve laboratory productivity. VILINK also provides immediate access to the latest application/analysis enhancements to improve testing accuracy and new antibiotic testing capabilities, which minimize the need for more labor intensive, off-line testing procedures.

Please complete and return the form at the back of this issue to learn more about VILINK and how it can help optimize your laboratory's productivity.

BIOMÉRIEUX

INTRODUCING VILINK™

In a rapidly changing healthcare environment, laboratory professionals are faced with providing high quality results, improving productivity while dealing with pressures related to the lack of skilled personnel and cost containment. Laboratory automation provides a cost effective means to standardize testing processes, enhance productivity and improve patient care. In order to maximize the use of automated systems, it is important for diagnostic companies to provide high quality and rapid support. Real-time instrument system monitoring and rapid, on-line assistance improves service levels.

VILINK™ Capabilities – Remote Assistance

VILINK™ use will be focused on remote access to instrument devices from bioMérieux, in response to a customer call. The Local Customer Service support group in each bioMérieux subsidiary is in charge of answering calls or questions from customers. In most cases, the local support group can provide complete assistance. For some special cases, additional support from the Global System Support at the bioMérieux global level may be necessary. Occasionally, the Global System Support may also require the assistance of Research & Development or Quality Control teams for situations that require more technical expertise.

Without VILINK™, the escalation process allows bioMérieux customers to get assistance from all technical levels. However, due to the transfer processes, there may be a delay in providing the final resolution for the customer. With VILINK™, simultaneous connections from all bioMérieux support teams to the customer device, allow each group to provide online assistance. During the process, the technicians can collect instrument diagnostic data required to determine the issue and return the most accurate response in the shortest time.

VILINK™ Capabilities – Future Added Value Services

VILINK™ provides new services for the monitoring and optimization of diagnostic devices. The following capabilities are prioritized for delivery in the short-term future:
Automatic software/firmware updates: When new diagnostic application software modules are ready for deployment, VILINK™ will notify the customer and transmit the new enhancements automatically. The customer will decide if the update must be applied immediately, later (when the device is not being used) or never.

Several types of software components are in the scope of VILINK™:

- Application updates
- New/updated knowledge bases
- Instrument firmware
- Security updates

Key Functions of Remote Assistance

With VILINK™, the service support teams can connect to the diagnostic device at the request of the customer and perform the following operations:

- Interact with the users on their device (via display, keyboard and mouse), for troubleshooting and providing operator training
- Communicate with the users (chat) if no phone line is located near the device
- Transfer log or other system files between the device and the support engineer workstation to further analyze data and determine the optimal problem resolution

VILINK™ – a Secure Solution

VILINK™ uses the existing network structure within the institution. The foundation of VILINK is a standard product developed by Axeda corporation, a leader in the field of secured internet-based access to diagnostic systems. Additionally, bioMérieux has integrated a set of complementary capabilities to ensure the highest level of security.

Integrating VILINK™ into Your Institution

VILINK™ solution has been designed to be modular and firewall friendly, in order to be compatible with the security rules put in place by the institution. The key component of VILINK security is the gateway. bioMérieux recommends installing VILINK along with the instrument on a sub network separated from the customer network by using a dedicated firewall. However, the solution also works if the devices are located in a VLAN controlled by the institution, or directly on the network.

Multiple instrument connections can be made to a single gateway.

Only the gateway needs to have access to Internet. The gateway creates a periodic HTTPS connection to the VILINK server in order to verify that a connection to the instrument is possible. If remote access is requested, and the user confirms the access, a secured tunneling to the bioMérieux support teams is created. The server has a RSA 1024-bit SSL key provided by THAWTE certification authority. bioMérieux also recommends the antivirus software and OS security updates used by the institution to be installed on the gateway and PCs connected to the diagnostic devices. Qualification procedures are provided to determine that the updates did not corrupt the operation of the diagnostic software.

VILINK™ is a highly secure connectivity environment that optimizes instrument "up time" to improve laboratory productivity.

Why is VILINK™ Access Secure?

1. The customer calls bioMérieux representative for assistance and specifies the diagnostic device involved.
2. bioMérieux representative logins to VILINK server and selects the device to be reached.
3. The VILINK server waits for the next connection from the gateway and replies with a request to connect to the diagnostic device.
4. The VILINK server establishes a secured SSL tunneling between the assistance workstation and the device.
5. An acknowledgement message appears on the instrument PC that the user has to accept. If the request is rejected or if the request to access message is not acknowledged within two minutes, no connection will be created.
6. If the connection is accepted, the viewer launched on the assistance workstation interacts with the device (remote display, remote keyboard/mouse, chat, file transfer).

Security on the VILINK™ Server

A high level of security has also been put in place between bioMérieux facilities and VILINK™ server, relying on its corporate Active Directory dedicated to the management of users and privileges, the permanent follow-up of security requirements and the choice of a professional hosting provider.

- bioMérieux Active Directory also controls the access of its authorized personnel to the assistance workstations and the secured disk space.
- bioMérieux Active Directory is synchronized with VILINK server. This ensures rapid propagation of privileges settings or removal.
- VILINK server checks that the assistance workstations have the expected level of security (bioMérieux computer, antivirus up and running, software firewall activated).
- VILINK server is managed through a SLA (Service Level Agreement) and split into two interconnected data centers, in order to allow a high level of availability, even in the case of a disaster on hosting site.
- All the logins are traced, three consecutive failed attempts to login automatically cause the account to be locked and the administration team is informed of the event.
- The Customer VILINK account can be configured so that no files from the customer system can be transmitted to the VILINK server

VILINK™ Glossary

Firewall friendly VILINK™ solution does not require any specific configuration changes to the customer firewall, which otherwise might introduce security holes.

HTTP/HTTPS Hyper Text Transport Protocol: protocol used for the transfer of web pages between a server and a web browser. HTTPS is the Secured version of HTTP.

SSL Secured Sockets Layer: protocol for managing the security of the messages transferred between the server and the clients. SSL ensures the encryption of the data exchanged and the authenticity of the server.

RSA is an algorithm used by SSL for the encryption of data NTP Network Time Protocol: protocol allowing systems to have their clock synchronized with a single time reference on a server.

Are you ready for **VILINK™** ?

Complete and fax back the form in this newsletter to be contacted by a bioMérieux representative for more information on how to get started!

TWO NEW CARDS
ADDED TO VITEK® 2 MENU

We are always reviewing our menu of antibiotic susceptibility test (AST) cards to ensure they reflect the needs and practices of laboratories and clinicians in the United States. The reasons behind changes in AST cards are many. Organisms become more resistant, new antibiotics come to market, cost considerations change (i.e. an antibiotic comes off patent), or studies indicate that some antibiotic regimens are more effective than others. The result is a situation in which certain antibiotics that were once commonly used are now prescribed infrequently. For these reasons, it is important we assess our menu offerings and make changes when appropriate. With this in mind, we would like to announce the introduction of two new additions to the VITEK 2 AST card menu.

Configuration of the new **GP70** CARD

Staphylococcus, Enterococcus,* Group B *Streptococcus

AST-GP70 (22340)

- Ampicillin
- Cefoxitin Screen
- Ciprofloxacin
- Clindamycin
- Daptomycin
- Erythromycin
- Gentamicin
- Gentamicin HL
- Inducible Clindamycin Resistance
- Levofloxacin
- Linezolid
- Moxifloxicin
- Nitrofurantoin
- Oxacillin
- Rifampicin
- Streptomycin HL
- Tetracycline
- Tigecycline
- Trimethoprim/Sulfamethaxazole
- Vancomycin

Requires AIX 5.02 or PC 4.01 Software

AST-GP70 CARD

This new Gram-positive susceptibility test card has been configured to bring DAPTOMYCIN to the VITEK 2 instrument. Used primarily to treat infections due to Methicillin-Resistance Staphylococcus aureus (MRSA), is an important addition the Gram-positive susceptibility test card. The number of therapeutic options to treat serious infections due to MRSA is limited. Recent literature in microbiology and infectious disease journals is replete with articles on emerging Vancomycin resistance, vancomycin treatment failures, VISA (Vancomycin Intermediate S. aureus) and HVISA (Heterogeneous Vancomycin-Intermediate S. aureus). Consequently, physicians are increasingly seeking alternatives to vancomycin for patients infected the MRSA and daptomycin has become a leading alternative to vancomycin.

While daptomycin is increasing in usage, penicillin as a treatment for infections due to S. aureus has declined significantly. Penicillin revolutionized the treatment of infectious diseases when it was introduced almost 70 years ago. It has saved countless lives, relieved the suffering of millions and spawned the scientific research that resulted in the development of all of the antimicrobial agents we know today. The historic importance of penicillin cannot be overemphasized. However, a trend that we recognize as commonplace today was noticed shortly after penicillin was introduced; that is, the emergence of the first strains of S. aureus showing resistance to this antibiotic. Nowadays, the vast majority of S.aureus produce ß-lactamases that inactivate penicillin. It has become uncommon for physicians to even consider using penicillin to treat staph infections. For this reason, we are deleting penicillin from the GP70 card. In those rare instances when a physician believes that penicillin is the best therapeutic choice, an Etest® benzylpenicillin strip can be used in conjunction with an inducible ß-lactamase test to determine penicillin susceptibility. Unlike penicillin, ampicillin remains on the card, as it is often used to treat infections due to Enterococcus sp. Quinupristin/Dalfopristin (Synercid®) has also been removed from the GP70 card, as usage of this antibiotic has declined.

In keeping with FDA regulations, VITEK 2 will report the Daptomycin AST results for those organisms that are listed in the Indications for Use section of the Daptomycin package insert. Those that can be tested on the VITEK 2 are:

- Staphylococcus aureus
- Enterococcus faecalis
- Streptococcus agalactiae

Laboratories must have the latest version of VITEK 2 software to utilize the GP70 card. This means that AIX software version 5.02 or PC software version 4.01 must be installed.

Configurations of the **GN24 CARD** and the **EXN9 CARD**

AST-GN24 (22229)	**AST-EXN9** (22339)
Amikacin	
	Amoxicillin/Clavulanic acid
Ampicillin	
Ampicillin/Sulbactam	
	Aztreonam
	Cefalotin
Cefazolin	
Cefepime	
	Cefotaxime
	Cefotetan
Cefoxitin	
	Cefpodoxime
Ceftazidime	
	Ceftizoxime
Ceftriaxone	
	Cefuroxime
Ciprofloxacin	
	Doripenem
Ertapenem	
ESBL	
Gentamicin	
Imipenem	
Levofloxacin	
	Meropenem
	Moxifloxacin
	Nalidixic Acid
Nitrofurantoin	
	Norfloxacin
	Piperacillin
Piperacillin/Tazobactam	
	Tetracycline
	Ticarcillin
	Ticarcillin/Clavulanic acid
	Tigecycline
Tobramycin	THIS CARD IS TO BE USED IN CONJUNCTION WITH **AST-GN24 ONLY**
Trimethoprim/Sulfa	

Requires AIX 5.02 or PC 4.01 Software

AST-EXN9 CARD

It has long been a practice to offer VITEK 2 customers the option of reporting all FDA-cleared antibiotics for Gram-negative organisms on a single report. Since the number of antibiotics is far greater than could be offered on a single card, we have utilized two complementary cards that are mated by the software to allow laboratories to report all antibiotics as a single chartable result. One of the two cards, currently the AST-GN24 card, can be used as a "stand alone" card. Should laboratories choose to report additional antibiotics not found on the GN24 card, an "Extension" card can be paired with the GN24 card to report a large number of AST results. This is particularly useful when a laboratory services multiple clients, when dealing with serious infections or when working with multi-drug resistant Gram-negative bacilli (MDR-GNB).

We are now offering a new Extension card – the AST-EXN9 card. Doripenem has been added to the previously used Extension card (the EXN7 card) to create this new card. Doripenem is the newest carbapenem antibiotic and some clinicians favor the use of this antibiotic in certain clinical situations. Again, it is important to note that laboratories must have the latest version of VITEK 2 software to utilize the EXN7 card. This means AIX software version 5.02 or PC software version 4.01 must be installed.

PNA FISH® Receives FDA 510(k) Clearance for 90-Minute Protocols for Identifying Bloodstream Pathogens

PNA FISH™
Rapid results direct from positive blood culture

Pathogen Identification Results in 90 Minutes Directly from Positive Blood Cultures Help Clinicians Improve Antibiotic Selection and Outcomes for Patients with Critical Infections

PNA FISH® recently received FDA 510(k) clearance for fast, 90-minute protocols for the following three tests:

- *E. faecalis*/OE
- *S. aureus* and *S. aureus*/CNS
- *E. coli*/*P. aeruginosa* and EK/*P. aeruginosa*

The faster protocol reduces the PNA FISH turn-around time from the original 2.5 hours to 90 minutes by reducing PNA probe hybridization from 90 minutes to 30 minutes. Clinical validation studies performed at hospitals in the United States demonstrated equivalence between the 90 minutes protocol and the original PNA FISH protocol, ensuring the faster protocol maintains the very high sensitivity and specificity required versus slower, conventional methods.

Every year, close to 875,000 patients in the United States contract bloodstream infections, leading to over 150,000 deaths and significant costs to the healthcare system. The infection is detected when a culture of the patient's blood (i.e. a blood culture) turns positive with bacteria or yeast. Rapid and accurate identification of the specific infecting pathogen is crucial to ensure early and appropriate therapy and save patient lives.

PNA FISH is an easy-to-use and highly sensitive and specific fluorescence in situ hybridization (FISH) assay that uses PNA (peptide nucleic acid) probes to target species specific ribosomal RNA (rRNA) in live bacteria and yeast. The unique properties of the non-charged, peptide backbone of PNA probes enable the use of FISH assays in exceedingly complex sample matrixes, such as blood and blood cultures, and this in turn facilitates the development of very simple, yet very accurate tests that don't require the extensive sample preparation necessary for other nucleic acid technologies.

PNA FISH tests enable microbiology labs to provide rapid and accurate identification of bloodstream pathogens directly from positive blood cultures in hours instead of days. Clinical studies show that rapid identification of bloodstream pathogens using PNA FISH tests leads to more appropriate patient therapy that saves lives and reduces unnecessary antibiotic use, patient length of stay and hospital costs.

Enterococcal Bloodstream Pathogens

Enterococcus species cause a significant percentage of bloodstream infections (BSI) as they are the fourth most common cause of hospital-acquired bacteremia within the US and the fifth most common in Europe.[1] While infections with *E. faecalis* are generally susceptible to ampicillin and rarely resistant to vancomycin, infections with *E. faecium* and other enterococci (OE) are frequently resistant to both ampicillin and vancomycin (VRE – vancomycin-resistant enterococci). Since conventional identification methods can take three days or longer, up to 80 percent of VRE bacteremia receive inappropriate antibiotic therapy, leading to higher mortality and significant additional hospital costs.[2,3,4]

Since 2003, *E. faecalis*/OE PNA FISH has been a vital test providing species identification in hours, instead of days, allowing labs to quickly report results to physicians and pharmacists to help ensure optimal therapy for Enterococcal bloodstream infections. A recently published clinical study from the University of Maryland Medical Center demonstrated that the use of *E. faecalis*/OE PNA FISH reduced time to laboratory results by 2.6 days, reduced time to appropriate therapy for *E. faecium* by 1.8 days and most importantly, reduced 30 day mortality rates by 42 percent for patients with *E. faecium* bacteremia.[5]

With the introduction of the 90 minutes PNA FISH protocol, laboratories will be able to further improve workflow flexibility and results reporting turn-around times. By providing even faster results, laboratories will help clinicians further improve antibiotic selection, care, and outcomes for patients with Enterococcal bloodstream infections.

References

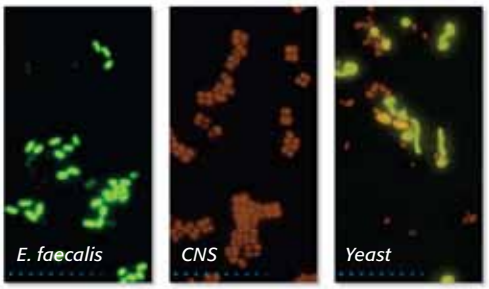
1. *Biedenbach et al. Diagn. Microbiol. Infect. Dis. 2004; 50: 59-69.*
2. *Lodise et al. Clin. Infec. Dis. 2002; 34: 922-929*
3. *Vergis et al. Ann. Intern. Med. 2001; 135: 484-492*
4. *Centers for Disease Control and Prevention (CDC). Information for the public about VRE. http://www.cdc.gov/ncidod/dhqp/ar_VRE_publicFAQ.html*
5. *Forrest et al. Peptide nucleic acid fluorescent in situ hybridization for hospital-acquired enterococcal bacteremia: delivering earlier effective antimicrobial therapy. Antimicrob Agents Chemother. 2008 Oct;52(10):3558-63.*

Staphylococcal Bloodstream Infections

Staphylococcus species are both the most frequent causes of bloodstream infections (BSI) and blood culture contamination. True infections caused by *Staphylococcus aureus* present considerable clinical challenges associated with increased mortality rates, prolonged hospital stays and add significant extra hospital costs.[1] In the United States alone, 300,000 hospitalized patients contract a *S. aureus* infection leading to more than 12,000 deaths, 2.7 million excess LOS days and close to $9.5 billion in excess hospital charges.[2] Blood culture contamination with Coagulase-Negative Staphylococci (CNS) on the other hand, account for up to 30 percent of all positive blood cultures and often result in a false diagnosis of a true staphylococcal bloodstream infection that leads to unnecessary coverage with broad-spectrum antibiotics, extra length of stay and unnecessary extra costs. As conventional identification methods can take several days to differentiate between true infection and contamination, clinicians must rely on empiric therapy that may result in either unnecessary or inadequate treatment.

Since 2003, the use of PNA FISH for rapid identification of staphylococcal bloodstream pathogens has drastically improved therapy decisions and outcomes for patients with bloodstream infections by providing results in hours, instead of days to help physicians and pharmacists optimize antibiotic therapy earlier. A clinical study performed at the Washington Hospital Center (Washington, D.C.) demonstrated that rapid identification and notification of PNA FISH results reduced ICU and overall mortality rates by 82 percent and 53 percent respectively, while reducing antibiotic use for patients with CNS positive blood cultures. In a separate study performed at the University of Maryland Medical Center (Baltimore, MD) rapid PNA FISH results, helped reduce unnecessary vancomycin use by 4.5 doses, length of stay by two days and hospital costs by $4,005 for patients with CNS contaminated blood cultures.[1,3]

With the introduction of the 90 minutes PNA FISH protocol, laboratories will be able to further improve turn-around times for critical results and thereby help clinicians further improve antibiotic selection, care, and outcomes for patients with staphylococcal bloodstream infections.



References
1. Ly et al. Ther Clin Risk Manag. 2008 Jun;4(3):637-40.
2. Noskin et al. Arch Intern Med. 2005 Aug 8-22;165(15):1756-61.
3. J Antimicrob Chemother. 2006 Jul;58(1):154-8.

Gram-Negative Bloodstream Infections

According to Dr. Phyllis Della-Latta, Professor of Clinical Pathology in Medicine and Director of Clinical Microbiology Service at Columbia University Medical Center, New York-Presbyterian Hospital (New York, NY), Gram-negative bloodstream infections can be very difficult to treat, especially due to the highly variable antimicrobial resistance patterns associated with different species. The ability of the PNA FISH assay to identify *Pseudomonas aeruginosa*, in contrast to *Escherichia coli* and *Klebsiella pneumoniae*, directly from a positive blood culture within 90 minutes can lead to the initiation of pathogen-specific empiric antimicrobial regimens. This assay can have a real-time, positive impact on patient therapy and management.

Every year, an estimated 100,000 patients develop bloodstream infections (BSI) due to Gram-negative pathogens such as *E. coli*, *K. pneumoniae* and *P. aeruginosa*. Gram-negative bloodstream infections are associated with mortality rates as high as 40 percent and can be difficult to treat due to increasing resistance to antimicrobial agents, especially for *P. aeruginosa*.[1] Treatment challenges are further compounded by conventional laboratory testing methods that take 24 to 48 hours or longer to identify the causative pathogen, forcing clinicians to treat patients empirically with antibiotics that may or may not cover for *P. aeruginosa*.

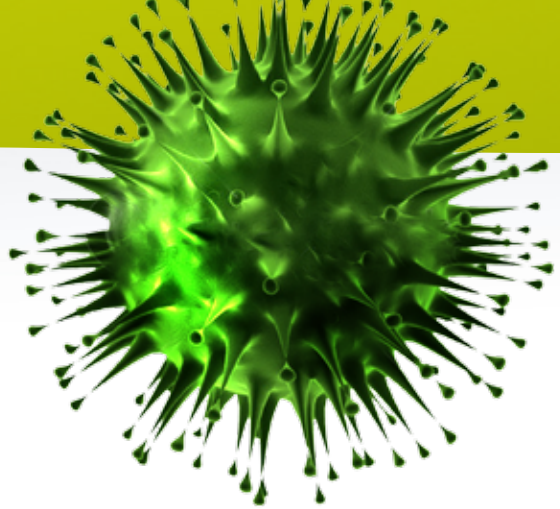
As the first FDA cleared rapid, molecular tests for Gram-negative bloodstream infections, *E. coli*/*P. aeruginosa* PNA FISH and EK/*P. aeruginosa* PNA FISH are vital new tools that enable microbiology labs to provide Gram-negative species identification in hours, instead of days to help physicians and pharmacists optimize antibiotic therapy earlier. Clinical studies have shown that delays in appropriate therapy for *P. aeruginosa* are associated with increased mortality rates of up to 72 percent. Given that up to 30 percent of patients with *P. aeruginosa* receive inappropriate coverage, early administration of effective pseudomonal therapy is crucial to improving patient outcomes.[2,3] At the same time, unnecessarily broad-coverage for less resistant and less virulent pathogens should be avoided in order to prevent the development and spread of antibiotic resistant pathogens.

With the introduction of the 90 minutes PNA FISH protocol, laboratories will be able to further improve turn-around times for critical results and thereby help clinicians further improve pseudomonal vs. non-pseudomonal antibiotic selection for patients with Gram-negative bloodstream infections.

References
1. Kang et al. Antimicrobial Agent and Chemotherapy. 2005 Feb; 49:760-766
2. Micek et al. Antimicrobial Agents and Chemotherapy. 2005;49(4):1306-11
3. Kumar et al. Chest. 2009;136: 1237-48

NucliSENS® easyMAG™

Now FDA-cleared for Use With New Molecular Parainfluenza Virus Assay



The number of nucleic acid diagnostic assays for which the easyMAG System is labeled for use continues to grow with the recent clearance of Gen-Probe's Prodesse ProParaflu+ assay. The easyMAG's innovative design delivering superior operational efficiency combined with its FDA-cleared status improves the accessibility of advanced molecular infectious disease testing for diagnostic laboratories.

The NucliSENS® easyMAG™ is cleared for use with the following molecular diagnostic assays:

- **Luminex's xTAG® Respiratory Viral Panel:** RT-PCR followed by Luminex xMAP detection for Influenza A plus H-1 and H-3 typing, Influenza B, Respiratory Syncytial Virus A and B, Human Metapneumovirus, Parainfluenza 1, 2 and 3, Adenovirus, Rhinovirus
- **Prodesse's ProFlu+™:** Real-time RT-PCR for Influenza A, Influenza B and Respiratory Syncytial Virus
- **Prodesse's Pro hMPV+™:** Real-time RT-PCR for Human Metapneumovirus
- **Prodesse's ProParaflu+™:** Real-time RT-PCR for Parainfluenza viruses 1, 2, and 3

Additionally, the following assay, labeled for use with easyMAG, received FDA Emergency Use Authorization (EUA):

- **Prodesse's ProFlu-ST™:** Influenza A virus subtyping for detection of 2009 H1N1 virus aided by an algorithm that relies on seasonal Influenza A/H1 virus and seasonal Influenza A/H3 virus results

About Parainfluenza Viruses

According to the U.S. Centers for Disease Control and Prevention (CDC), parainfluenza viruses are second to RSV among causes of lower respiratory tract disease in young children. Similar to RSV, parainfluenza viruses can cause repeated infections throughout life, usually manifested by an upper respiratory tract illness such as a cold or sore throat. With repeat infection, parainfluenza viruses can also cause serious lower respiratory tract disease such as pneumonia and bronchitis, especially among the elderly and patients with compromised immune systems.

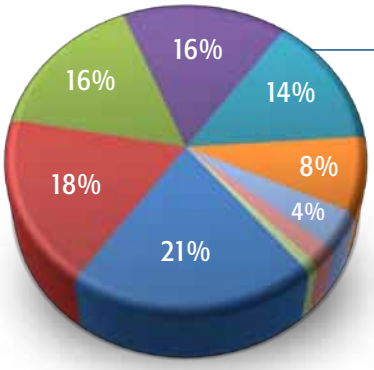
There are four types of parainfluenza viruses, each with different clinical and epidemiologic features. The most distinctive clinical feature of parainfluenza 1 and 2 is croup; type 1 is the leading cause of croup in children. Both parainfluenza 1 and 2 can cause other upper and lower respiratory tract illnesses, while type 3 is more often associated with bronchiolitis and pneumonia. Parainfluenza 4 is infrequently detected, possibly because it is less likely to cause severe disease.

Parainfluenza viruses are spread from respiratory secretions through contact with infected people or contaminated objects. The viruses are ubiquitous and infect most people during childhood. Parainfluenza 1 causes biennial outbreaks of croup in the fall (now during odd-numbered years in the United States).

Type 2 causes annual or biennial fall outbreaks. Parainfluenza 3 activity peaks during the spring and early summer months each year, but the virus can be isolated throughout the year.

bioMérieux *Connection* 2009 SURVEY **RESULTS**

Below are the results of the **bioMérieux Connection 2009 newsletter survey. THANKS FOR YOUR PARTICIPATION!**

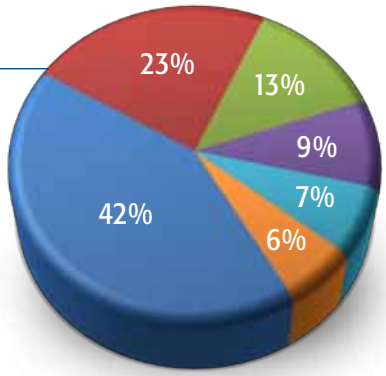


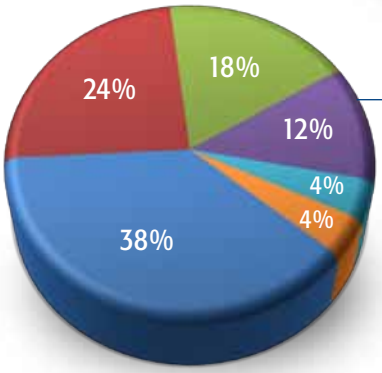
2010 TOPICS

- New Cards
- FMLA/Microbiology Automation
- LEAN AST
- Molecular Testing/Technology
- Sepsis Biomarkers
- Data Management Software
- Customer Testimonials
- Clinical Utility of Biomarkers (2%)
- Cardiac Markers (1%)

2009 AUDIENCE

- Lab – Director/Manager/Supervisor
- Lab/ Lead Tech
- Other
- Lab – Assistant/Associate Director/ Manager/Supervisor
- Chief Medical Technologist
- Key Operator



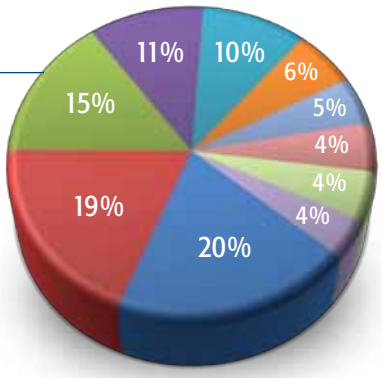


2009 PARTICIPATION in bioMérieux Education

- In-House Training at bioMérieux
- Webinar
- Odyssey Tour
- Regional Meeting
- Signature Event
- Online Education Center

2010 EDUCATION TOPICS

- Microbiology
- Antibiotic Resistance Mechanisms
- Organism Identification
- LEAN Lab Design
- Sepsis Management
- Molecular Diagnostics
- Software Products – Data Management/Interfacing
- Justifying Automation/Workflow Studies
- Administration
- Molecular Pathology



Etest® Voriconazole FDA Clearance

Voriconazole is triazole antifungal medication developed by Pfizer® that is used to treat serious, invasive fungal infections. It is commonly used with immunocompromised patients.

Voriconazole Etest® strip concentration 0.002-32 mg/ml is available in two formats:

- VORICONAZOLE B30 (Blister 30-strips) **532840**
- VORICONAZOLE F100 (Foam 100-strips) **532848**

With the addition of Voriconazole, the anti-fungal strips available increase to include four drugs as listed below:

Description	Item No.
FLUCONAZOLE FL 256 US F100	510858
FLUCONAZOLE FL 256 US F30	510850
FLUCYTOSINE FC 32 US F100	510958
FLUCYTOSINE FC 32 US F30	510950
ITRACONAZOLE IT 32 US F100	525858
ITRACONAZOLE IT 32 US F30	525850
VORICONAZOLE VO 32 US B30	532840
VORICONAZOLE VO 32 US B100	532848

CUSTOMER **SPOTLIGHTS**

SEPSIS KNOW FROM DAY 1™

Devendra Amin, MD

Medical Director of Critical Care Services, Morton Plant Hospital

Devendra Amin, MD, MBBS, FCCP, is the medical director of critical care services and also serves as the assistant professor of medicine at the department of family practice, University of South Florida at Morton Plant Hospital. Dr. Amin has authored numerous scientific papers on respiratory health and presented nearly two dozen lectures on sepsis. Dr. Amin is one of the earliest adopters of rapid Procalcitonin (PCT) testing in the U.S. and is in the process of collecting data for a manuscript on the role of PCT testing in the management of septic patients.

Dr. Amin recently presented a webinar entitled "PCT and the ICU" that explains how the burden of sepsis mortality falls on the Intensive Care Unit (ICU) physician, who contends with highly unpredictable patient responses even with advanced treatment regimens. Dr. Amin discusses how PCT can help take the guesswork out of early treatment decisions for suspected sepsis patients. **To view the recorded webinar online and offer your feedback, please visit www.biomerieux-usa.com/knowfromday1**

Rakesh Engineer, MD

Discipline Leader for Emergency and Undifferentiated Care, Cleveland Clinic Emergency Services Institute

Rakesh Engineer, MD, was appointed to the department of emergency medicine at the Cleveland Clinic in 2001. He currently serves as the discipline leader for emergency and undifferentiated care at the Clinic's emergency services institute. Dr. Engineer is board-certified by the American Board of Emergency Medicine and became a fellow in the American College of Emergency Medicine in 2004. He is active in the Lerner College of Medicine of the Case School of Medicine and developed the curriculum for the emergency medicine and undifferentiated care block. His primary clinical interest is severe sepsis and septic shock, and he also has interest in evidence-based emergency medicine and residency journal club. He is a course director for the Emergencies in Medicine conference, held annually in Park City, Utah.

Dr. Engineer recently presented a webinar entitled "PCT and the Emergency Department" that explains why the first 24 hours are critical for sepsis patients. Dr. Engineer addresses how PCT can help Emergency Department (ED) physicians make the most of those hours to ensure a better outcome for sepsis patients. **To view the recorded webinar online and offer your feedback, please visit www.biomerieux-usa.com/knowfromday1**

James Faix, MD

Department Head, Clinical Chemistry Laboratory, Stanford University Hospital

James Faix, MD, is the section director for clinical chemistry and immunology at Stanford University Medical Center and also serves as an associate professor of pathology at Stanford's School of Medicine. Before joining Stanford in 2001, he served as director of clinical immunology and associate director of clinical chemistry at Beth Israel Deaconess Medical Center in Boston and as director of the clinical laboratory at Joslin Diabetes Center in Boston. Dr. Faix's research interests include markers of sepsis, myeloma, autoimmune disease, and allergy. He is active in the American Association for Clinical Chemistry, where he is currently the chair of the clinical and diagnostic immunology division as well as a member of the 2010 annual meeting organizing committee. Dr. Faix is also involved with the College of American Pathologists, where he currently serves on the council for scientific affairs, the chemistry resource committee and the standards committee.

Dr. Faix recently presented a webinar entitled "PCT and the Clinical Laboratory" that discusses how laboratorians are accustomed to doing more with less – they continually support patient care despite budget and staffing constraints. Dr. Faix sheds light on new diagnostic tools for sepsis management and how laboratory directors can more effectively collaborate with the clinical team to reduce mortality from the condition. He also addresses the role that laboratory managers need to play in the development of sepsis protocols at their institutions. **To view the recorded webinar online and offer your feedback, please visit www.biomerieux-usa.com/knowfromday1**

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b'10Mérieux Events Calendar

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MARCH

S	M	T	W	T	F	S
28	1	2	3	4	5	6
7	8	9	10	11	12	13
					Northern CA ASM - San Ramon, CA	
14	15	16	17	18	19	20
				SIGNATURE EVENT - Seattle, WA	**SCACM** - Louisville, KY **SHEA** - Atlanta, GA	
21	22	23	24	25	26	27
SHEA - Atlanta, GA	**SAFMLS** - San Diego, CA **American College of Healthcare Executives** - Chicago, IL				**bioMérieux in Beantown** - Boston, MA	
28	29	30	31	1	2	3

APRIL

S	M	T	W	T	F	S
28	29	30	31	1	2	3
4	5	6	7	8	9	10
	MedAssets Business Summit - Las Vegas, NV					
11	12	13	14	15	16	17
			bioMérieux on Broad Street - Philadelphia, PA	**Texas ACEP** - Frisco, TX	**Maryland ACEP** - Baltimore, MD	
18	19	20	21	22	23	24
TX ACEP						
25	26	27	28	29	30	1
Clinical Virology Symposium - Daytona Beach, FL						

Visit *www.biomerieux-usa.com* to view the full 2010 Events Calendar.

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