Volume 8 • Issue 2 • Fall 2009

TREK DIAGNOSTIC SYSTEMS

TREK Times

NEWS AND INSIGHT FOR THE CLINICAL MICROBIOLOGY LABORATORY

INSIDE THIS ISSUE:

Customer•Profile

St. Anthony's Adopts Sensititre® ARIS® 2X as Primary AST/ID System

By Maria Ali-Khan, MT (ASCP), St. Anthony's Medical Center

St. Anthony's Medical Center is a 767-bed tertiary care facility located in St. Louis, Missouri. I came to the laboratory at St. Anthony's Medical Center in 2007, where I found a group of bright and eager technologists.

When selecting a new automated AST/ID system, the staff at St. Anthony's wanted a system that would deliver complete results overnight. The ARIS 2X with SWIN Software was the best option.

The lab needed a new AST/ID system, so I initiated a search to see what was available. Based on prior experience – and having used two of the available systems – I limited my search to two potential candidates. In comparing the two systems, based on user feedback and literature search, it soon became apparent that the Sensititre ARIS 2X System would be a better fit for the needs of St. Anthony's Medical Center.

I then made a list of concerns and issues, including:

- How difficult will it be to expand/upgrade in the future?
- Will we be able to respond to the ever-increasing bacterial resistance patterns, each of which requires a different strategy for detection?
- How easy is this system to use?
- What are its yeast susceptibility capabilities?
- How much off-line testing is required?
- How responsive is your customer service?

The TREK sales team presented its solutions to me, and put me in contact with the technical staff to answer all of my detailed questions. They promised me a system that would deliver complete results to clinicians overnight.

As a new member of the St. Anthony's team, I was committed to fulfilling our mission, "… to provide accurate and timely laboratory service to every patient, every day." As with any initiative, success depends on front-line buy-in.

> "It has been a pleasure working with an organization that delivers what it promises."

My first priority was to convince the technologists that this would be a positive change for them.

(continued on p. 2)

Customer•Profile

St. Anthony's Chooses Sensititre (cont.)

(Continued from p. 1) Initially, my staff members did not think that they were going to like the change. However, they were soon impressed with the absence of problems once we implemented the Sensititre equipment and test methods.

Previously, we had an early shift, from 6 to 7 a.m., to sort through the ID and susceptibility reports and select all of the isolates that would require repeat testing or further confirmatory testing. That process has been completely eliminated. We no longer drop disks and strips that hold up results and require manual data input. Our LIS now receives results based on the Expert Rules that we easily manage in the SWIN software.

There was a notable increase in physician satisfaction as a result of the wider range of antibiotics tested, the wider range of organisms with susceptibility results, greater timeliness and accuracy of results, and the ability to tailor reported antimicrobials tested to the formulary. The physicians were impressed with our increased ability to detect KPCs (due to our association with a long term care facility), which, previously, had gone undetected.

We are using standard Sensititre MIC plate formats, including the newest Gram positive format with D-Test and Cefoxitin screen (Part No. GPALL1F), and have added custom three-isolate plates for urinary isolates that better suit our outpatient formulary guidelines. I don't believe any of the other AST/ID vendors would have been able to provide a custom product at our volumes, at the same price as other standard products.

Overall, I believe we made the absolute right decision in moving to the ARIS® 2X system. TREK's support has provided us with the products and information that we have needed throughout the process. It has been a pleasure working with an organization that delivers what it promises.

TREK is pleased to have added St. Anthony's Hospital to its growing list of Sensititre ARIS 2X customers. Talk to your Area Account Manager today about the ARIS 2X and the impact it can have on your laboratory's AST/ID results, clinican satisfaction, and ultimately, patient care.

> "The physicians were also impressed with our increased ability to detect KPC's, which previously had gone undetected."

MetroHealth Medical Center Moves to VersaTREK!

By DeAna Paustian, Senior Marketing Specialist, TREK Diagnostic Systems

TREK Diagnostic Systems is pleased to announce the recent addition of MetroHealth Medical Center in Cleveland, Ohio, to its list of VersaTREK users. The MetroHealth System has been serving the medical needs of the Cleveland community for more than 170 years.

Today, MetroHealth is one of the largest, most comprehensive health care providers in Northeast Ohio and is nationally recognized for its advanced techniques in treating complex medical problems. This capacity for patient care is supported by continued commitment to remain a leader in research, medical education and community service.

The Microbiology Laboratory at MetroHealth performs bacteriology, mycology, mycobacteriology and parasitology testing. Over 116,000 tests are performed each year with a staff of only 12 medical technologists and one processing clerk! VersaTREK is used 24/7 by both the Microbiology Department and the Core Laboratory.

We had the opportunity to speak with Kathleen Garber, Supervisor in the Microbiology Laboratory, and ask her about her experiences so far with the VersaTREK system, which was installed in February 2009.

What were the reasons MetroHealth decided to switch to VersaTREK from BACTEC for your blood culture and mycobacteria needs?

The ability to create reports and monitor blood culture contamination was very appealing to me. Also, the ability to monitor and perform AFB cultures and Mtb susceptibility on the same instrument platform provided the flexibility that we needed. *(continued on p. 3)*

Customer•Profile

MetroHealth Moves to VersaTREK (cont.)

We currently have two VersaTREK 528 units in our bacteriology lab that are used for blood and body fluids, and one VersaTREK 240 in our Myco room for mycobacteria samples and Mtb susceptibility. It is nice to know that if we ever have an influx of blood cultures, I can simply place them into our 240 system.

What was your impression of the conversion process from your previous system to VersaTREK?
The conversion to VersaTREK was very easy! The collection devices were the same that we used for the BACTEC™. Also, the validation process was simple and easy to perform; it was completed within a short period of time. We were very pleased with VersaTREK's time-to-detection that we observed during our validation.

What were your impressions regarding the on-site training?
On-site training was nice because we were trained by TREK's technical support experts on our own system. We liked the fact that lab personnel were not dependent on a super-user who was sent off-site to effectively communicate all aspects of the instrument, that they just learned, to the rest of us. Most people in our lab received the same training but the process is nicely broken down into basic or super users depending on the blood culture responsibilities of the user.

What are your impressions regarding TREK's customer service?
Customer Service has been wonderful. Everyone has been very helpful in answering all of our questions, and having modem access is so convenient!

It is apparent that TREK values their customers and goes the "extra mile" when needed. For instance, during the time we placed VersaTREK into our facility, we also implemented a carrier to easily send blood cultures through the pneumatic tube system called the REDOX Transporter. Two representatives from TREK dedicated a day to training all three shifts on how to use the system. One representative came in for an additional three days to assist in training the entire facility on REDOX Transporter carriers. They also prepared laminated index cards showing how to use the REDOX Transporter on one side and the other demonstrated phlebotomy steps.

What do you and your lab like about the system?
We really like the fact that we only have to maintain an inventory of two bottle types instead of three with our old system.

TREK is proud to have added MetroHealth to our VersaTREK family and is looking forward to a very long and successful relationship with them. TREK does value the partnerships we make with our customers and ensures customer excellence through our TREXcellence Program. Please see page 5 to learn more about TREK's customer excellence program.

MetroHealth Medical Center, VersaTREK vs. BACTEC Verification Study

	VersaTREK Time to Detection		BACTEC Time to Detection	
Organism	O2	ANO2	O2	ANO2
B. bronchseptica	26.9	no growth	30.41	no growth
B. fragilus	no growth	17.3	no growth	21.74
C. albicans	19.03	no growth	63.98	no growth
C. glabrata	14.03	no growth	no growth	no growth
C. sordelli	14.75	10.4	no growth	9.18
E. coli C O157	9.15	12.7	10.36	9.35
Enterococcus sp.	11.20	13	11.53	11.53
N. gonorrhoeae	34	no growth	no growth	no growth
Strep, Group A	19.2	29.8	15.22	17.57
Strep, Group B	13.3	14.1	13.05	12.37
H. influenzae	26.95	no growth	54.94	103.16
K. pneumoniae	11.45	15.95	12.54	12.03
N. meningitidis	31	no growth	no growth	no growth
P. aeruginosa	14.4	22.6	17.06	no growth
S. bovis	12.3	8.75	35.25	11.54
S. aureus	12.7	17.2	13.55	21.41
S. pneumoniae	31	22.7	23.91	18.91

Customer•Profile

UCSF Chooses Sensititre ARIS 2X as Primary AST/ID System

By Rohan Nadarajah, Microbiology Manager, University of California- San Francisco Medical Center

*The University of California- San Francisco Medical Center (UCSF) is a world renowned research and teaching hospital in San Francisco, California. Known for offering innovative technologies and pioneering treatments not widely available, UCSF was recently ranked as one of the ten best hospitals in the U.S., and best hospital in the Bay Area by **U.S. News and World Report**. The microbiology laboratory at UCSF recently purchased a full Sensititre ARIS 2X System for its primary susceptibility and identification system in their microbiology laboratory.*

When your laboratory was considering a new system for AST/ID, what items did you consider most important?

The most important factors for our laboratory were availability of necessary drugs and appropriate dilution ranges. Sensititre MIC plates are accurate and able to detect emerging resistance (e.g. decreased susceptibility to vancomycin and carbapenems).

What influenced your decision the most in implementing the Sensititre ARIS 2X System?

Sensititre MIC plates had the necessary drugs and appropriate dilution ranges for our laboratory, which was very important. TREK was one of the first companies to incorporate the broth microdilution D Test and cefoxitin screen, and the drug tigecycline on their MIC panels, giving our lab immediate access to the latest antimicrobials. We are even able to give our input in the development of future standard MIC plates.

The ARIS 2X system's ability to detect emerging resistance was another benefit of the Sensititre system. TREK also provided excellent support during the validation process

How did you and your staff handle the conversion from your previous automated AST/ID system to the new ARIS 2X System?

We underwent a gradual conversion to the new system by first testing Gram negative rods. We later incorporated the testing of Gram positive cocci. Plate set-up, software and instrument operation are relatively easy, and were learned very quickly by our laboratory staff members.

UCSF recently implemented the full Sensititre System in their microbiology laboratory, including the ARIS 2X and Vizion® System.

All of the supervisors were able to get hands-on experience with the new system because it can be learned quickly. This enabled us to better support our staff during the conversion.

What were your impressions regarding the onsite training provided by TREK Diagnostic Systems?

We were pleased that training could be done on-site. This allowed more staff to be trained in a shorter period of time. Because the system is relatively easy to learn, several technologists could be trained in the time allotted for on-site training. TREK staff worked around our staffing and responded to our questions.

How has your ID staff supported the move to a new susceptibility test system?

In converting to the new system, there were some changes to the existing formularies of drugs being reported. The ID Service advised Microbiology in implementing these changes. The move to the new system was hardly apparent to our clinicians.

What do you like most about the ARIS 2X System?

We like the ease of operation of the ARIS 2X and SWIN® Software, its reproducibility of MICs, and the ability to do *Instant Read* and never lose a result for panels if incubated off-line, in the event that we would experience downtime.

What trends have you noticed since the implementation of the ARIS 2X System (i.e. resistance trends, detection of KPCs etc…)

Although we have not noted new trends, we have accurately detected decreased susceptibility to vancomycin and carbapenems.

TREK•News

Introducing the TREXcellence Program: Creating Great Customer Experiences

By Mitchell Barton, Global VersaTREK Product Manager, TREK Diagnostic Systems

TREK has experienced tremendous growth over the last few years, so when we sat down to discuss the things that propelled our growth, two items consistently came to the top:

- **Great Products**
- **Great Customer Service**

No puzzle on the first one – companies just don't survive in the market if they have lousy products. But over and over again, we see and hear the customer comments about our employees going the extra mile with personal service – or having the level of expertise in microbiology to truly help customers address difficult issues. Here is an example:

"TREK was outstanding in regards to technical support, responsiveness and the desire to gain our business. We really felt that they believed in their product. From the first steps we took to find a new blood culture system, we have been extremely pleased with the commitment and responsiveness of everyone at TREK." –Joan Hoppe-Bauer, Barnes Jewish Christian Hospital

The Customer TREXcellence Team consists of Technical Support, Customer Service and Field Service representatives working together to create the best possible TREK service experience.

Instead of creating a program to address problems, we decided to formalize the culture of great customer service. We call it TREXcellence.

What is Customer TREXcellence?

Customer TREXcellence is the formalization of things TREK has been doing right for years – and it starts before we ever install an instrument in a customer's laboratory

• A team of experts is assigned to a customer that will remain with them beyond installation – including a Field Service Engineer, Technical Service Specialist, and a Customer Service Specialist

• Continuous planning and preparation before installation, including checklists, meetings and training sessions

• Post installation meetings and evaluations to ensure the customer's success

• Regular check-ups from an Account Manager and Field Service Engineer

• 24/7 Technical Service Support – from personnel that are instrument and microbiology experts

We look forward to improving our high standard of customer service with the Customer TREXcellence program!

TREK Debuts VersaTREK Competitive Myco Comparison at ASM '09

By DeAna Paustian, Senior Marketing Specialist, TREK Diagnostic Systems

According to the World Health Organization it is estimated that 1.7 million deaths occurred in 2006 as a result of *Mycobacteria tuberculosis* (*Mtb*) infection[1]. In addition, over one-third of the world's population is infected with *Mtb*[2].

With the rise of MDR-TB and XDR-TB, rapid detection of *Mtb* as well as other Mycobacteria isolates is critical for effective patient management and treatment. Kimberle Chapin, Ph.D, of Rhode Island Hospital performed a retrospective analysis comparing VersaTREK to the BD MGIT 960 for mycobacteria detection. The data was presented at the 2009 ASM in Philadelphia, Pennsylvania.

Rhode Island Hospital performed a mycobacteria retrospective study of the VersaTREK versus the MGIT 960, which was presented at ASM 2009.

This retrospective competitive analysis looked at the same calendar months for each instrument (12 months) to rule out any potential outliners. The parameters assessed included the following:

(continued on p. 6)

TREK•News

TREK Debuts Myco Comparison (cont.)

- Total mycobacteria recovery rates/ instrument
- Percent Positivity
- *Mtb* and MAC Recovery Rates
- *Mycobacteria* species recovered
- Time to Detection
- Smear Results
- Specimen Types
- Cost analysis

Results from the study (Table 1) illustrate equivalence in positivity rates between VersaTREK and MGIT (3.1% versus 2.7%, respectively). In addition, Table 1 lists *Mtb* and MAC recovery as well as the overall average time to detection for *Mtb* and MAC (both smear positive and negative were used in calculating these averages). Due to the large variability in time to detection between and amongst samples from the same patient, the study further categorized time to detection ranges separated by smear positive and smear negative samples. Table 2 summarizes the smear range results.

Of interest in Table 3, VersaTREK demonstrated recovery of a larger diversity of atypical mycobacteria compared to the MGIT as well as from a greater variety of specimen types. **This is important as these types of mycobacteria are being recovered more often in the U.S. compared to the incidence of *Mtb*.**

VersaTREK not only performed very well in this analysis. Additional benefits were realized when using the system for mycobacteria detection and *Mtb* susceptibility testing compared to MGIT.

For instance, VersaTREK offers the simplicity of one medium and instrument for all sample types, including processed blood and urine samples. Customers love the Windows®-based software system and the convenience of both a high and low level antibiotic susceptibility testing for *Mtb* in the same kit. In addition, Rhode Island has recognized an overall cost savings of 21% by simply switching to VersaTREK from MGIT.

If you would like to view the VersaTREK versus MGIT retrospective poster in its entirety, please visit the TREK website at www.trekds.com and follow the link to Posters.

Table 1. Total number of Mycobacteria cultures and positivity rates

	VersaTREK	MGIT™
# Cultures Tested	3,651	2,999
Positivity Rate	3.1%	2.7%
***Mtb* Recovery**	26; 12 patients	20; 6 patients
***Mtb* TTD (days)**	16.7	13.1
MAC Recovery	54; 33 patients	45; 27 patients
MAC TTD (days)	11.6	15.8

Table 2. *Mycobacteria* species recovered per system

	VersaTREK	MGIT™
M. abscessus	✓	✓
M. chelonae	✓	
M. duvalii		✓
M. fortuitum	✓	✓
M. gordonae	✓	✓
M. lentiflavum	✓	
M. marinum	✓	
M. nebraskense	✓	
M. species	✓	✓
M. terrae	✓	
SAV Group	✓	

Table 3. Time to Detection (Days)

Organism	Smear Result	VersaTREK	MGIT™
Mtb	Positive	4.1-22	6-20
Mtb	Negative	6.7-38	8-29
MAC	Positive	2.5-14	3-17
MAC	Negative	5.7-36	2-50

New Product • Announcement

TREK is Your Source for TB Solutions

By Joan Lamprecht, Associate Product Manager, TREK Diagnostic Systems

TREK has added a new item to the Sensititre product line of microbroth dilution MIC plates. The first standard plate designed for testing *Mycobacterium tuberculosis* isolates includes twelve first and second line antimicrobics.

Only Sensititre provides a product for Mtb microbroth susceptibility designed to be easily incorporated into daily workflow. Similar to our plates designed for testing of non-Tb Mycobacterium (Part Nos. RAPMYCO*, SLOMYCO*), the Tb Mycobacterium plate (Part No. MYCOTB*) is packaged in cost-effective boxes of ten plates and require simply room temperature storage. The plate is designed to be used with Middlebrook 7H9 broth with OADC (Part No. T3440*) and Saline Tween with Glass Beads (Part No. T3490*). The easy set up and standard incubation requirements provide accurate endpoint results in 10-21 days, which can be read using a mirrored viewbox or the Vizion System.

Part No. MYCOTB*

Antimicrobic	Dilution(µg/ml)
Amikacin	0.12-16
Cycloserine	2-256
Ethambutol	0.5-32
Ethionamide	0.3-40
Isoniazid	0.03-4
Kanamycin	0.6-40
Moxifloxacin	0.06-8
Ofloxacin	0.25-32
Para-amino-salicylic acid	0.5-64
Rifabutin	0.12-16
Rifampin	0.12-16
Streptomycin	0.25-32

The new Mycobacterium plates are individually-wrapped and packaged 10/box, and will be available in Fall 2009. For more information, contact your Area Account Manager in the U.S. at 800-871-8909, or internationally at +44 1342-318777.

*For research use only. Not for use in diagnostic procedures.

Case • Study

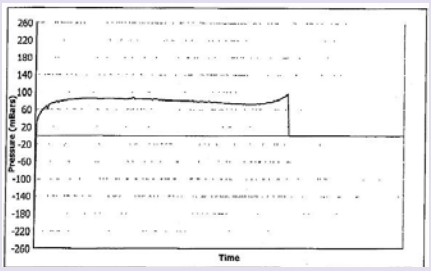
Urinary Tract Infection Leads to *Gardenerella vaginalis* Sepsis

By DeAna Paustian, Senior Marketing Specialist, TREK Diagnostic Systems

A 38-year old women arrived at the Emergency Room at St. Alexius Medical Center in Hoffman Estates, Illinois with severe left flank pain, fever, chills and nausea. The patient had a history of recurrent episodes of ureteral colic and upon CAT scan of her abdomen and pelvis, demonstrated an obstructive stone in the ureter causing moderate to severe hydronephrosis.

She was admitted to the medical floor and a nephrostomy tube was immediately placed into the patient. Blood and urine cultures were performed. The urine analysis revealed 37 white blood cells and the first blood culture become positive at 23 hours. From the VersaTREK graph (right), it was clear to see that this organism is a gas producer based on the upward trend of the pressure line.

Evening shift reported gram variable rods on gram stain, and the blood was subcultured onto BAP, MAC, CHOC and CNA. The plates showed "no growth" the next morning, and were reincubated. Pointpoint colonies were seen on day 2. The following testing was performed:



The VersaTREK graph showed that the organism in question was a gas producer, as indicated by the upward trend of the pressure line.

- Catalase – negative
- Urea – negative
- Oxidase – negative
- RapID NH – *Gardenerella vaginalis*

Identification was confirmed as *Gardenerella vaginalis* via molecular testing performed at a reference laboratory.

Gardenerella vaginalis is a facultative anaerobe that oftentimes Gram stains as a Gram variable rod. While this organism is known to cause bacterial vaginosis in women (see picture, below), in this case it was the cause of a urinary tract infection that lead to sepsis.

Gardenerella vaginalis with 'clue cells'.

TREK would like to acknowledge and thank Mr. Chad Hanson, Microbiology Manager at St. Alexius Medical Center in Hoffman Estates, Illinois for sharing this interesting case study.

Discover the Latest TREK Products at Discovery Workshops

You're invited to *discover* what TREK products are all about at one of our upcoming Discovery Workshops! TREK Discovery Workshops give attendees the opportunity to learn the scientific principles behind the products straight from the experts, as well as hear testimonials and experiences from actual users.

Hands-on product demonstrations of the VersaTREK Automated Microbial Detection System, Sensititre ARIS 2X Microbiology System and Vizion System are also included. Attendees even receive 4 P.A.C.E. credits for their participation!

Hands-on demonstrations of the VersaTREK, as well as the ARIS 2X and Vizion Systems, are offered at TREK Discovery Workshops.

Discovery Workshops are coming to a city near you! Upcoming workshops in 2009 include:

- **Chicago, Illinois: September 29, 2009, at the Westin Chicago Northwest**

- **Cleveland, Ohio: November 11, 2009, at the Radisson Hotel Cleveland- Gateway**

To sign up for a workshop, contact Tracy Jarden at 800-871-8909 x205, or visit www.trekds.com/workshops.