

# BD EpiCenter™

Data Management for the Microbiologist

Sample Reports



Helping all people  
live healthy lives

# The BD EpiCenter™ Microbiology Data Management System turns your data into actionable information.

For a microbiologist, or anyone responsible for monitoring epidemiology, collecting data is only half the task. Providing data in its raw form isn't effective in communicating the emergence of trends. Professionals must have access to tools that make data analysis quick, clear and simple. These tools need to generate data in multiple formats that optimize the sharing of this critical information.

## BD EpiCenter delivers tools you can use.

You don't have to be a programmer to begin analyzing data with this system. BD EpiCenter was designed for the working microbiologist and includes 176 predefined queries\* and reports that can be used immediately to communicate antibiograms, nosocomial event analysis, and other trend reports. Each query or report can also be easily modified and saved as a favorite providing the lab with an unlimited library of customized research tools.\*



## Data delivered in the right format.

When communication and education are your goals, the data you present must be provided in a format that best suits the audience. The BD EpiCenter software provides the ability to customize the output of your analysis so that the audience can quickly understand your message.

If a simple table is what you need it's available with the software, but often graphic presentations provide the best educational materials. The software includes an easy-to-use graphing wizard that lets you generate color, annotate and customize graphs for greater educational impact. BD EpiCenter is a Windows®-based application and includes an export function so your data can be easily shared directly with other compatible Windows-based applications.

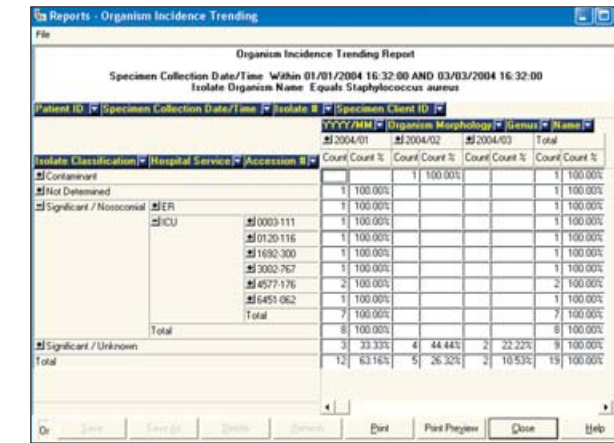
\* Requires EpiCenter Plus Configuration

## BD EpiCenter™ provides real-time data analysis.

Along with tabular and graphic reports the system provides a data analysis tool that is unique to the system, the EpiCube. This exclusive tool provides users with a real-time three-dimensional view into data. Using an EpiCube a researcher can immediately change the parameters of a query and simultaneously drill down into the individual patient records that make up the data set. Examining nosocomial and emerging resistance events becomes a real-time exercise using the BD EpiCenter.

The system utilizes Microsoft's SQL™, providing users with an almost unlimited ability to store data.\*\*

\*\* May require additional Microsoft® software

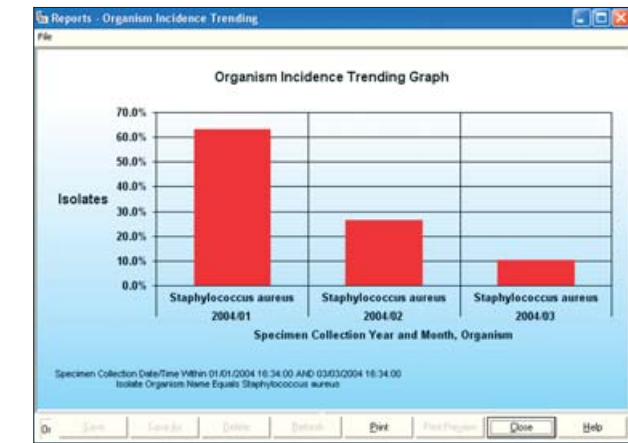


EpiCube presentation of data provides real-time and dimensional analysis of epidemiological trends.

Organism Incidence Trending Report	
File Name: Organism Incidence Trending R	03/03/2004 16:07:16
Specimen Collection Date/Time Within 01/01/2004 16:07:00 AND 03/03/2004 16:07:00	Page 1 Of 2
Sorted By: Specimen Collection Year and Month, Isolate Organism Name	
Year and Month: 2004/01	Number of Isolates
Organism Name: Staphylococcus aureus	Record Count: 12
Organism Name: Unspecified	Record Count: 1
Record Count:	65.00%
Year and Month: 2004/02	Number of Isolates
Organism Name: Staphylococcus aureus	Record Count: 5
Record Count:	25.00%
Year and Month: 2004/03	Number of Isolates
Organism Name: Staphylococcus aureus	Record Count: 2
Record Count:	10.00%

BD EpiCenter sample report. For display purposes only.

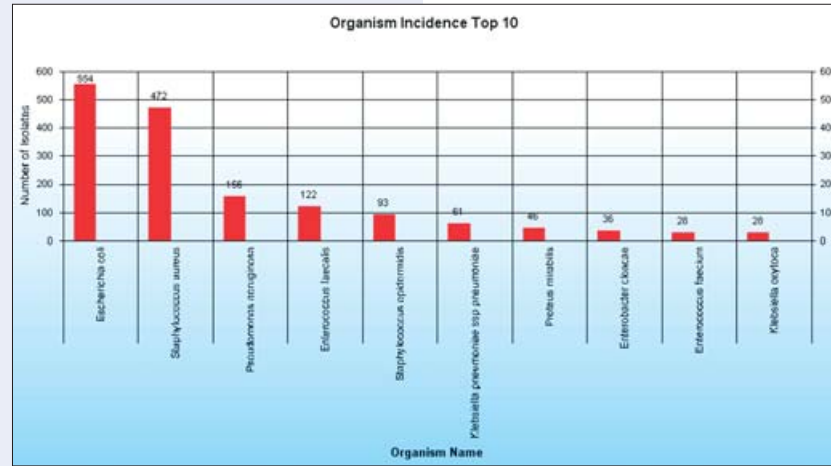
Tabular reports of epidemiological data can standardize reporting of statistics.



BD EpiCenter sample report. For display purposes only.

BD EpiCenter provides graphic tools to facilitate presentation of statistics.

## Top 10 Organisms



BD EpiCenter sample report. For display purposes only.

Knowing and communicating the organisms that are currently most prevalent in your institution is fast and efficient using just one of the system's library of reports. This color graphic report can be easily modified using the software's graphing wizard and the report can be exported to PowerPoint™ to facilitate physician and staff education.

## Percent Susceptibility, EpiCube

Generating an antibiogram for each organism and drug becomes easy when using an EpiCube. Microbiologists can provide more specificity to their analysis by generating separate antibiograms based on patient, location, client, physician demographics, or other parameters. Users can create and save unique queries for their institution in their own Favorites Folder.\* Users can retrieve the saved queries and run them anytime using new data parameters. BD EpiCenter™ meets proposed NCCLS M39-A guidelines, while also providing the microbiology manager with the flexibility to define their own guidelines, including automatic duplicate removal.

Percent Susceptible Report								
Specimen Collection Date/Time = 01/01/2003 12:00:00 AM AND 03/31/2003 11:59:59 PM								
Isolate Antimicrobial Name = Amikacin / Ceftazidime / Gentamicin / Piperacillin/Tazobactam / Tobramycin / Vancomycin								
Patient ID	Genus	Organism Morphology	Isolate #	Isolate Organism Group	Antimicrobial Class	Group	Sub Group	
Name	Amikacin	Ceftazidime	Gentamicin	Piperacillin/Tazobactam	Tobramycin	Vancomycin	Total	
	# Results	% S	# Results	% S	# Results	% S	# Results	% S
Escherichia coli	307	100.00%	327	95.11%	327	93.88%	327	89.91%
Klebsiella pneumoniae ssp pneumoniae	38	97.37%	38	94.74%	38	100.00%	38	81.58%
Pseudomonas aeruginosa	79	96.25%	79	95.90%	79	91.03%	79	89.74%
Staphylococcus aureus			244	91.80%			244	77.05%
Staphylococcus epidermidis			95	46.45%			95	32.73%
Total	443	99.95%	443	93.45%	742	89.62%	443	89.14%

BD EpiCenter sample report. For display purposes only.

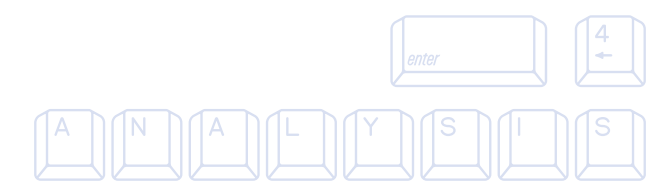
## Percent Susceptibility, Graph

BD EpiCenter can provide real-time access to data that demonstrates a facility's formulary effectiveness against specific organisms. Physicians and pharmacists can use this data in educational presentations as well as determining what antimicrobics should be used in, or discontinued from their formulary.



BD EpiCenter sample report. For display purposes only.

\*Requires EpiCenter Plus Configuration



# Resistance Markers, EpiCube

Performing resistance marker research is facilitated using a combination of the system's analysis tools. Using an EpiCube, a microbiologist or infection control office can not only discover an emerging trend but simultaneously track it through the facility and to the specific patient.

In this example we begin with a query for a specific resistance marker, then explore the marker's prevalence across different locations, then examine what patients were affected in each location. Using an EpiCube we can change the parameters of the research in real-time.

1

Isolate Organism Morphology	Isolate Organism Genus	Isolate Organism Name	Isolate Present	Specimen Type	Specimen Hospital Service Group	2003-01	2003-02	2003-03	2003-04	2003-05	2003-06	Total
Methicillin Resistant Staphylococcus						5	100.00%	5	100.00%	5	100.00%	15
Total						5	100.00%	5	100.00%	5	100.00%	15

Isolate Resistance Marker Name	Specimen Hospital Service Group	2003-01	2003-02	2003-03	2003-04	2003-05	2003-06	Total
Methicillin Resistant Staphylococcus	Conway Care Unit	1	20.00%	1	14.29%	1	12.50%	3
	Emergency	1	20.00%	1	14.29%	1	12.50%	3
	Intensive Care Unit	2	40.00%	1	20.00%	2	25.00%	5
	Oncology	1	20.00%	1	14.29%	1	12.50%	3
	Pediatrics	2	40.00%	1	14.29%	1	12.50%	5
	Surgical Services	1	20.00%	1	14.29%	1	12.50%	3
Total		5	100.00%	5	100.00%	5	100.00%	15

2

Isolate Resistance Marker Name	Specimen Hospital Service Group	Patient Name	2003-01	2003-02	2003-03	2003-04	2003-05	2003-06
Methicillin Resistant Staphylococcus	Conway Care Unit		1	20.00%	1	14.29%	1	12.50%
	Emergency		1	20.00%	1	14.29%	1	12.50%
	Intensive Care Unit	Baker, Jerry					1	7.69%
		Dewitt, Tom					1	7.69%
		Downing, Elbot				1	12.50%	
		Eaves, Madelene					1	7.69%
		Eboly, Ivan					1	7.69%
		Harrigan, Monroe				1	14.29%	
		Hirsch, Tim				1	12.50%	
		Hiss, Sarah				1	12.50%	
		Hess, Leah					1	7.69%
		Kam, Alexandra				1	14.29%	
		Leop, Tom					1	7.69%
		Madsen, Dante				2	40.00%	
		Madsen, Lorene	1	20.00%				
		Neenan, Margala				1	20.00%	
		Shwand, Alma					1	7.69%
		Pfeife, Nomi	1	20.00%				
	Total		2	40.00%	1	20.00%	2	28.57%
	Oncology		1	20.00%	1	14.29%	1	12.50%
	Pediatrics		2	40.00%	1	14.29%	1	12.50%
	Surgical Services		1	20.00%	1	14.29%	1	12.50%
	Transplant		1	20.00%	1	20.00%	2	25.00%
	Total		5	100.00%	5	100.00%	5	100.00%

3

BD EpiCenter sample reports. For display purposes only.

(Resistance Markers, EpiCube, Continued)

5

4

Isolate Resistance Marker Name	Specimen Hospital Service Group	Patient Name	Accession #	2003-01	2003-02	2003-03	2003-04	2003-05
Methicillin Resistant Staphylococcus	Conway Care Unit			1	20.00%	1	14.29%	1
	Emergency			1	20.00%	1	14.29%	1
	Intensive Care Unit	Baker, Jerry	98123456					1
		Dewitt, Tom						1
		Downing, Elbot						1
		Eaves, Madelene						1
		Eboly, Ivan						1
		Harrigan, Monroe				1	14.29%	
		Hirsch, Tim				1	12.50%	
		Hiss, Sarah				1	12.50%	
		Hess, Leah					1	
		Kam, Alexandra				1	14.29%	
		Leop, Tom					1	
		Madsen, Dante				2	40.00%	
		Madsen, Lorene	1	20.00%				
		Neenan, Margala				1	20.00%	
		Shwand, Alma					1	
		Pfeife, Nomi	1	20.00%				
	Total			2	40.00%	1	20.00%	2
	Oncology			1	20.00%	1	14.29%	1
	Pediatrics			2	40.00%	1	14.29%	1
	Surgical Services			1	20.00%	1	14.29%	1
	Transplant			1	20.00%	1	14.29%	1
	Total			5	100.00%	5	100.00%	5

6

BD EpiCenter sample reports. For display purposes only.

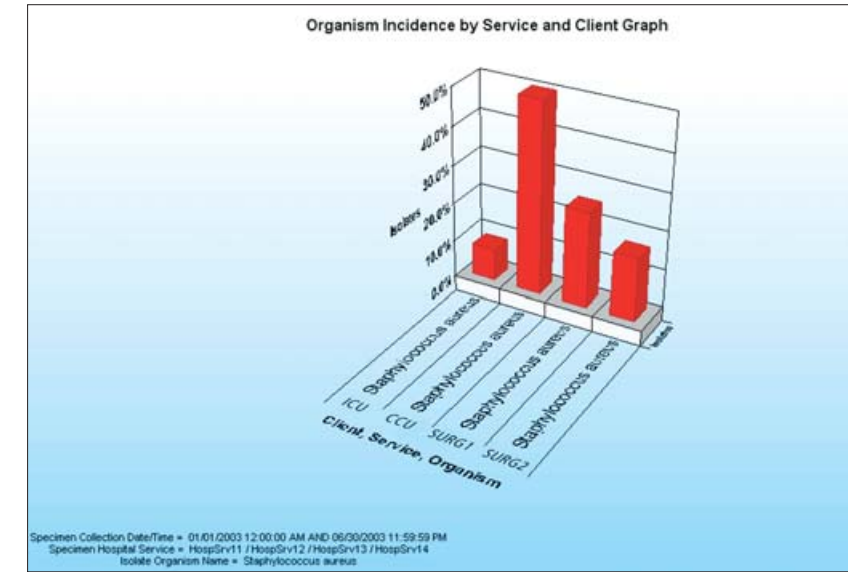


## Resistance Markers



Demonstrating emerging resistance trends to your facility's staff is facilitated through the presentation of real-time graphic analysis. BD EpiCenter™ software quickly generates these graphic formats, which you can customize using the system's graphing tools and export to other Windows® based applications.

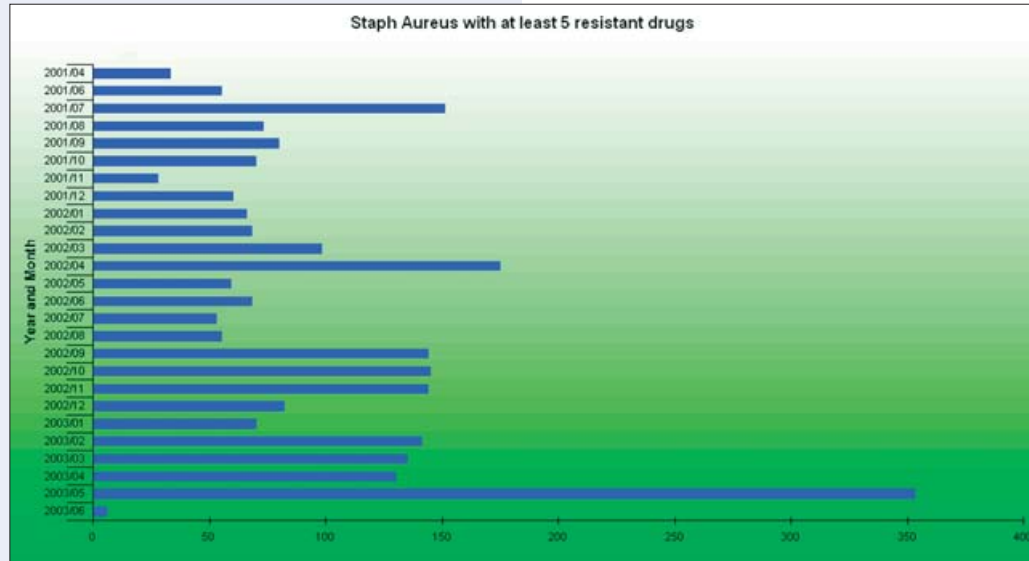
## Organism Incidence



The system can quickly provide a visual tool to examine which organisms are most prevalent in each service in the facility. Using the included graphing tools you can present the best graph for communicating your message and add annotation to make sure your message is clear.



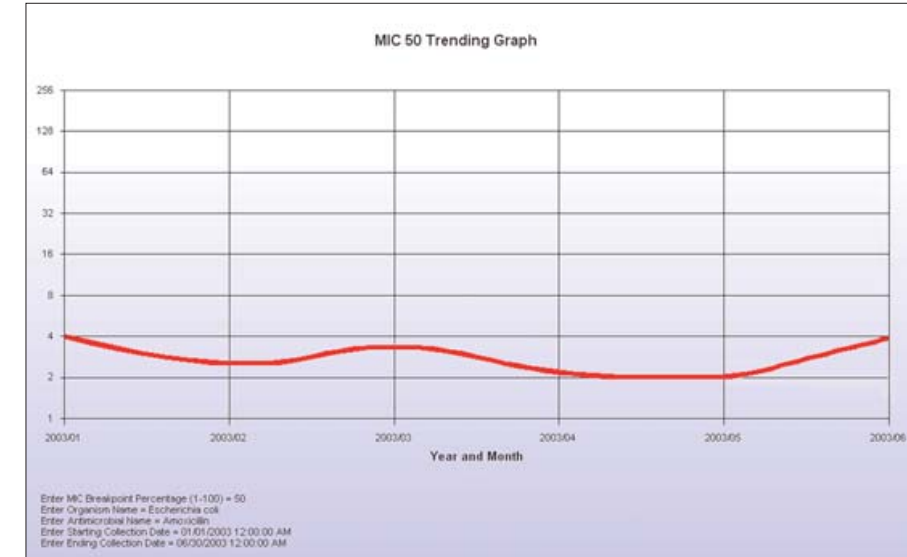
## Organisms Demonstrating Multiple Resistance



BD EpiCenter sample report. For display purposes only.

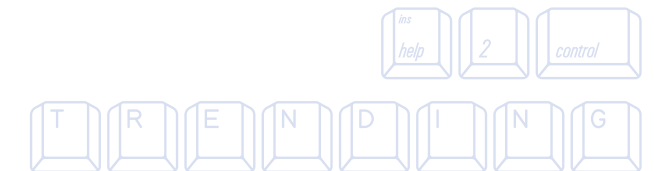
Knowing which organisms are most prevalent in your institution is easily demonstrated with the BD EpiCenter™. Using the system, you can just as easily see which of these organisms are displaying a trend toward more resistance. This included query quickly examines a specific organism's resistance pattern over time using criteria you select.

## MIC Trending



BD EpiCenter sample report. For display purposes only.

Generating a BD EpiCenter™ graph to visually examine these resistance trends by drug and organism makes analysis quick for a microbiologist, pharmacist or infectious disease physician.



## Time to Detection, EpiCube

Reports - TTDNEW

File

**Time To Detection**

Test Name = BACTEC Lytic/10 Anaerobic/F / BACTEC PLUS Aerobic/F

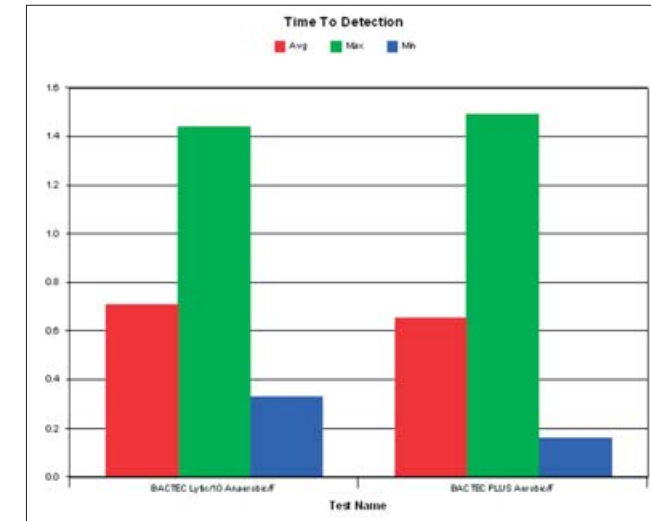
Test State | Specimen Client ID | Specimen Hospital Service | Instrument Type

Accession #	Specimen Collection Date/Time	BACTEC Lytic/10 Anaerobic/F		BACTEC PLUS Aerobic/F		Average	
		TTD	Tests	TTD	Tests	TTD	Tests
BH02093857	10/27/2002 03:00:00 AM			1.07	1	1.07	1
	Average			1.07	1	1.07	1
BH02093858	10/27/2002 03:00:00 AM			0.33	1	0.33	1
	Average			0.33	1	0.33	1
BHB-	10/15/2002 04:05:00 PM	0.33	1	0.37	1	0.35	2
	Average	0.33	1	0.37	1	0.35	2
BHPY0	10/15/2002 04:04:00 PM	0.48	1	0.51	1	0.5	2
	Average	0.48	1	0.51	1	0.5	2
BHSTA	10/15/2002 04:06:00 PM	0.6	1	0.72	1	0.66	2
	Average	0.6	1	0.72	1	0.66	2
BHTEST0001	05/14/2001 08:30:00 PM	1.44	1	1.49	1	1.47	2
	Average	1.44	1	1.49	1	1.47	2
Average		0.71	4	0.75	6	0.73	10

BD EpiCenter sample report. For display purposes only.

BD EpiCenter™ software assists the microbiologist in understanding the critical performance of their BD BACTEC™ blood culture system and BD BACTEC MGIT™ 960 system. Using this included EpiCube, an examination of the time-to-detection for different media types can be quickly examined for both BACTEC systems.

## Time to Detection, Graph and Report



BD EpiCenter sample report. For display purposes only.

**Time to Detection**

Filter Name: TTDNEW.RR 08/13/2004 03:45:27 PM Page 1 of 2

Test Name = BACTEC PLUS Aerobic/F / BACTEC PLUS Anaerobic/F / BACTEC Lytic/10 Anaerobic/F / BACTEC PEDS Plus/F / BACTEC PLUS Aerobic/F / BACTEC Plus Anaerobic/F / BACTEC Standard 10 Aerobic/F / BACTEC Standard Anaerobic/F (90) / BACTEC Standard Anaerobic/F

Sorted By: Test Name, Test State, Specimen Collection Date/Time, Specimen Client ID, Specimen Hospital Service

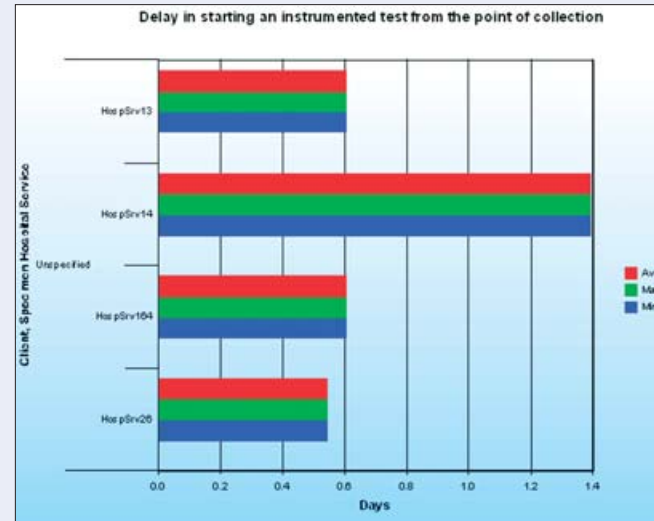
Time To Detection	
Test	BACTEC Lytic/10 Anaerobic/F
Average	0.71
Maximum	1.44
Minimum	0.33
Record Count	4
Time To Detection	
Test	BACTEC PLUS Aerobic/F
Average	0.67
Maximum	1.49
Minimum	0.51
Record Count	11
Grand Average	0.67
Grand Maximum	1.49
Grand Minimum	0.51
Grand Record Count	15

BD EpiCenter sample report. For display purposes only.

The ability to examine time to detection data in graphic and tabular format facilitates the understanding of your BD BACTEC™ blood culture or BD BACTEC MGIT™ 960 system's performance. Using BD EpiCenter™ software allows you the flexibility of presenting the data in the format that best suits the audience.

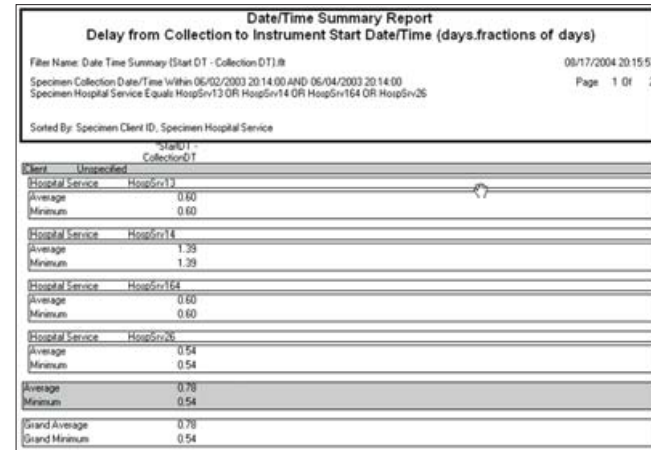


## Delayed Testing



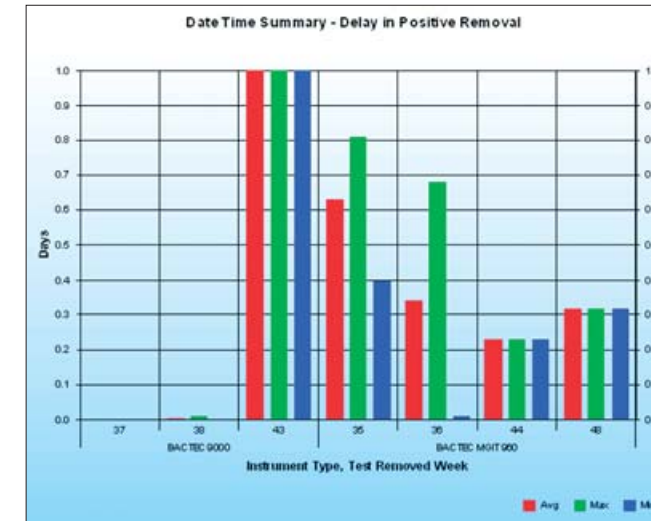
BD EpiCenter sample report. For display purposes only.

Blood cultures are critical specimens. In order to provide the best results for their patients, microbiologists need to understand the impact of every element in the testing cycle. One element is measuring the delay from the time the specimen is obtained until it is entered into the BD BACTEC™ blood culture system. The BD EpiCenter™ software provides both a report, for analysis, and a graph, for educational purposes, to assist supervisors in managing this time critical process.



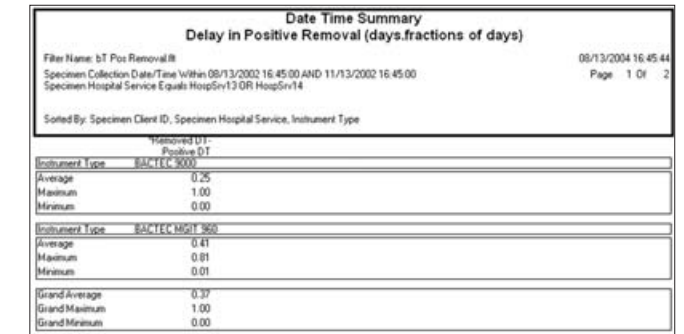
BD EpiCenter sample report. For display purposes only.

## Tracking Reaction Time to Positive Culture



BD EpiCenter sample report. For display purposes only.

It is important for the microbiology lab manager to understand the time it takes to react to a positive culture. The reaction time is a key element in the total time equation from sample collection to *ACTIONABLE* result. BD EpiCenter™ software creates visibility to this key performance criterion.



BD EpiCenter sample report. For display purposes only.





# Positive Blood Culture Research

BD Reports - Isolates Recovered from a Specific G&D Test

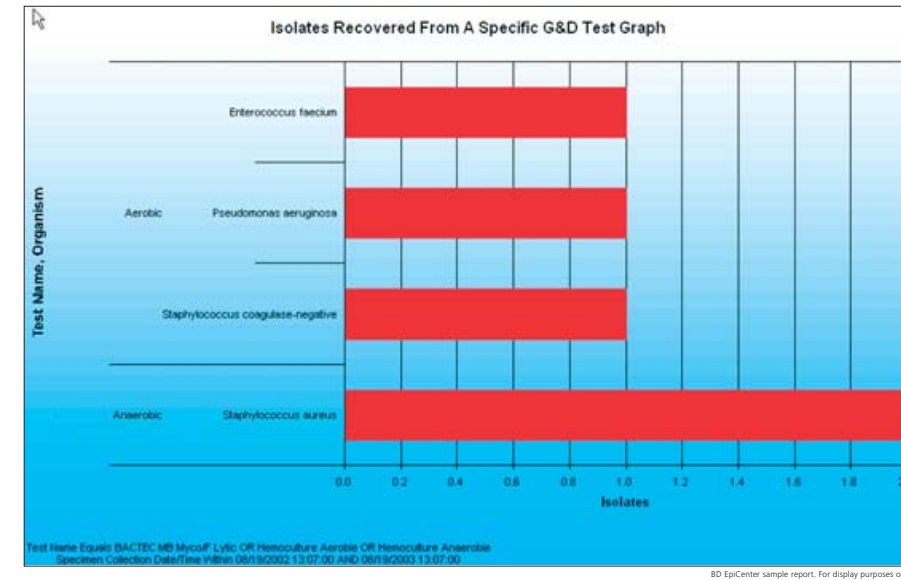
Isolates Recovered From A Specific G&D Test

Source	Count	Count %	Count	Count %	Count	Count %	Total	Count	Count %
#HospIn133	1	100.00%	1	100.00%	1	100.00%	1	1	100.00%
#HospIn163	2	100.00%	2	66.67%	1	33.33%	3	2	100.00%
#HospIn164	2	100.00%					2	2	100.00%
#HospIn17	2	100.00%					2	2	100.00%
#HospIn19			2	100.00%			2	2	100.00%
#HospIn24			4	57.14%	3	42.86%	7	4	100.00%
#HospIn26					1	100.00%	1	1	100.00%
#HospIn28			1	50.00%	1	50.00%	2	1	100.00%
#HospIn296			1	100.00%			1	1	100.00%
#HospIn3			1	100.00%			1	1	100.00%
#HospIn29			2	100.00%			2	2	100.00%
#Unspecified	2	100.00%					2	2	100.00%
<b>Total</b>	<b>6</b>	<b>23.08%</b>	<b>14</b>	<b>53.85%</b>	<b>6</b>	<b>23.08%</b>	<b>26</b>		<b>100.00%</b>

BD EpiCenter sample report. For display purposes only.

Microbiologists and infection control officers can examine in detail the source of positive cultures within the institution using the data mining tools of the BD EpiCenter™. To ensure that the analysis presents the exact information desired, research parameters can be added or modified in real time.

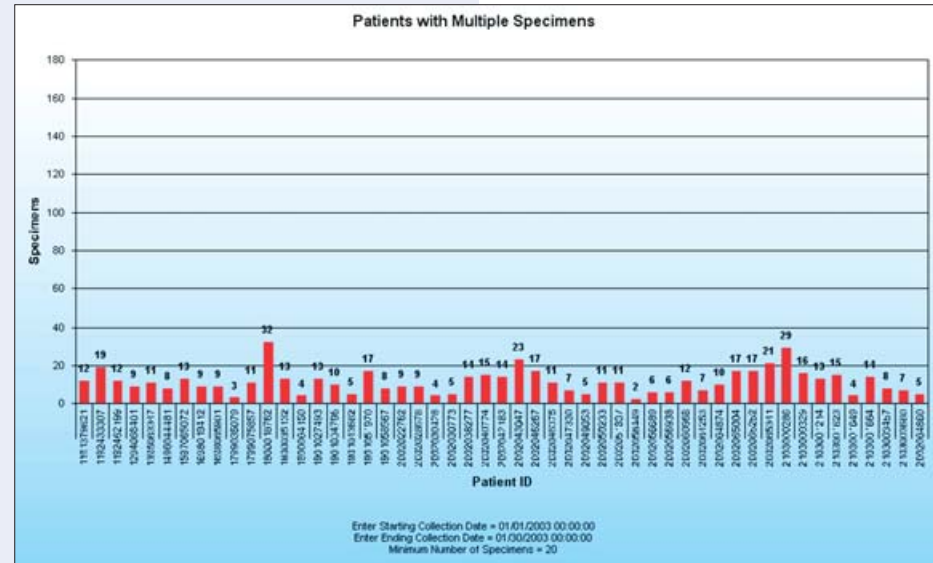
(Positive Blood Culture Research, Continued)



Microbiologists can use graphic representations of the isolates recovered from blood cultures to improve medical staff education presentations. The software is flexible enough to capture just the information needed and the included graphing wizard makes presentations of the data have more impact.



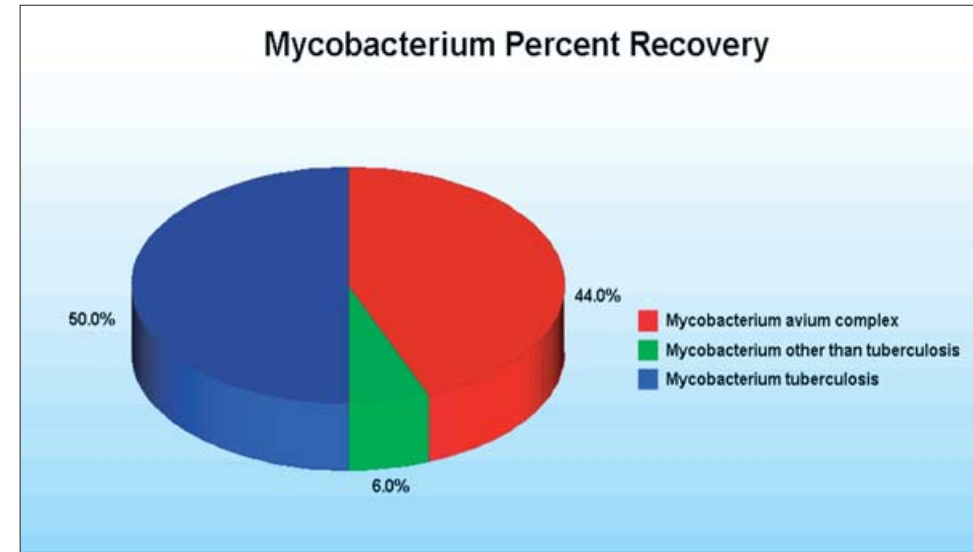
## Patients with Multiple Specimens



BD EpiCenter sample report. For display purposes only.

How many specimens does your facility receive per patient?  
 Is this trend increasing? Multiple cultures may not be warranted and have a direct impact on the cost to the facility and the patient. BD EpiCenter™ software makes monitoring trends such as these a simple process.

## Recovery Rate Reporting

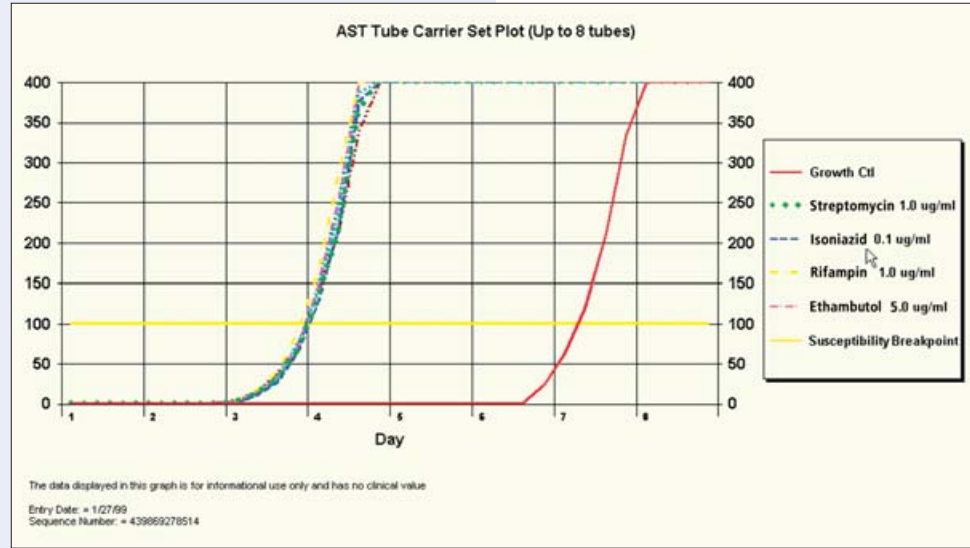


BD EpiCenter sample report. For display purposes only.

BD EpiCenter™ software creates graphs that visually demonstrate the patterns of recovery in your *Mycobacterium* testing. Other text can be added to your graphs, with the system's graphing wizard, to make sure your message is clearly understood.



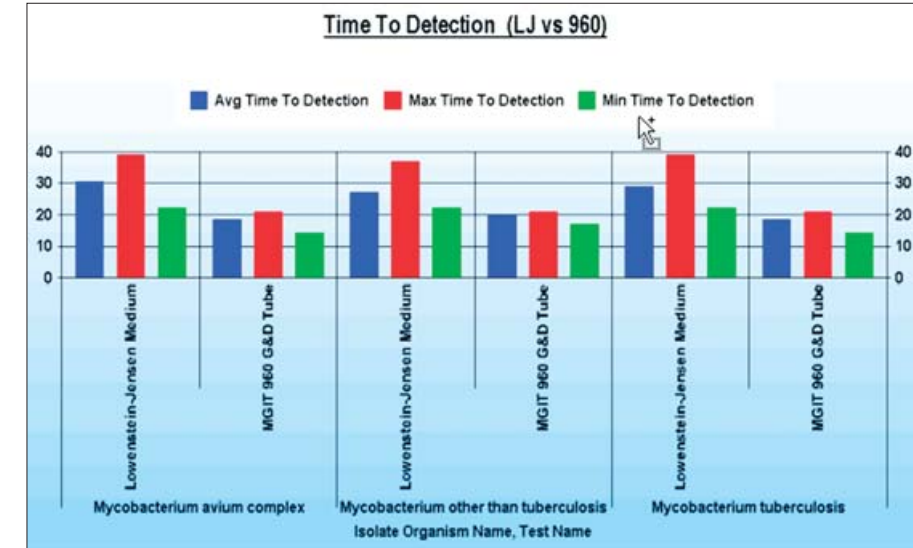
## AST Growth Plots



BD EpiCenter sample report. For display purposes only.

The BD EpiCenter™ software provides graphing capabilities for BD BACTEC™ MGIT™ 960 users performing AST testing. Multiple-drug performance can be easily compared to growth controls over a date range.

## Time to Recovery by Method

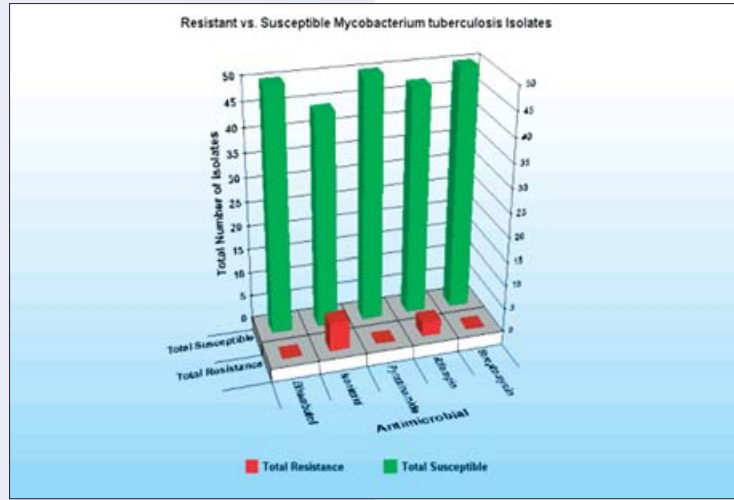


BD EpiCenter sample report. For display purposes only.

Facilities using multiple media can get a clearer picture of each system's performance with the graphic reports provided by the BD EpiCenter™ software.



## Resistance and Susceptible Isolates



BD Epicenter sample report. For display purposes only.

Understanding the number of isolates of specific organisms and the corresponding susceptibility to a specific drug formulary is easier when it is displayed in graphic format. Infection control officers, physicians, and pharmacists will benefit from the educational opportunities provided when information is graphically presented.



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