Solutions for Bloodstream Infection Diagnostics

To meet your goals and better impact patient care, take a holistic approach to bloodstream infection diagnostics that considers the interdependencies between blood collection, blood culture processing, identification and susceptibility testing and results reporting.

BD

Preventing and managing sepsis are key challenges faced by healthcare institutions

Clinical studies have demonstrated a twofold increase in mortality caused by sepsis when inappropriate antimicrobial therapy is given.[1]

Globally, an estimated **48.9 million cases of sepsis** are diagnosed each year with **~11 million sepsis-related deaths** reported.[2]

BD offers an integrated bloodstream infection solution across all three phases of the diagnostic pathway — from world-class blood culture collection to accurate, timely and actionable results — allowing you to make the connection across the entire diagnostic pathway and impact patient outcomes.

Pre-analytical phase

The right diagnosis begins with proper specimen collection

Challenges in patient preparation and specimen collection may result in pre-analytical errors, accounting for **up to 70% of all clinical errors** made in laboratory diagnostics.[3,4] Improper collection of blood culture specimens can lead to contamination events which may[5]:

- Impact length of hospital stay[6,7]
- Lead to inappropriate antimicrobial treatment[8]
- Result in repeat diagnostic testing[7]

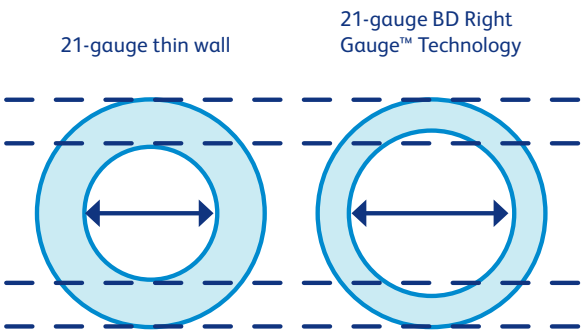
Additionally, under-filled blood culture vials can potentially lead to missed positives.[9]

Steripath® Initial Specimen Diversion Device® is FDA 510(k)–cleared to reduce blood culture contamination[10]

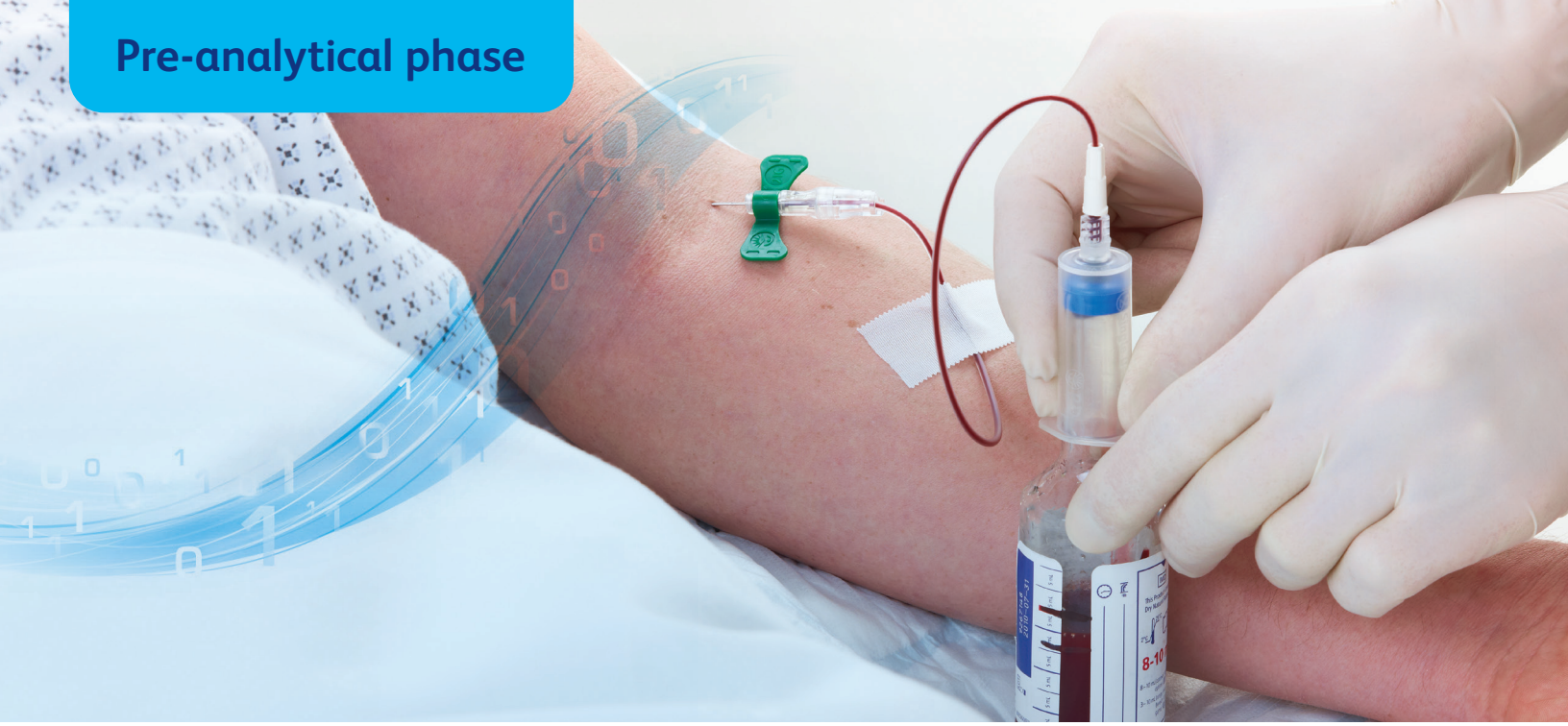
- Delivers **sustained, near-zero contamination rates** in 9 studies supporting both peripheral stick and fresh peripheral IV start blood culture draws[11-16]
- Actively diverts the initial 1.5–2.0 mL of blood
- **Clinically proven** to meet the ENA, INS, CDC, and CLSI evidence-based best practice guidelines[17-20] to reduce blood culture contamination
- Compatible with **BD BACTEC™ Blood Culture Media**

BD Vacutainer® UltraTouch™ Push Button Blood Collection Sets with Pre-attached Holder are designed to improve safety, while maintaining sample integrity and workflow efficiency[21-23]

- Pre-attached holder reduces the number of steps in the phlebotomy procedure, helping to simplify the collection process
- 25-gauge BD Vacutainer® UltraTouch™ Push Button Blood Collection Sets decrease insertion pain with no significant difference in overall pain compared to a 23-gauge BD Vacutainer® Safety-Lok™[22]
- Single-handed, in vein activation reduces needlestick injuries by up to 88%[21]
- BD RightGauge™ Ultra-Thin Wall Cannula Technology provides a larger inner diameter while maintaining a set outer diameter
- May support collection of appropriate blood fill volume



Pre-analytical phase



BD BACTEC™ blood culture media helps streamline the blood collection process

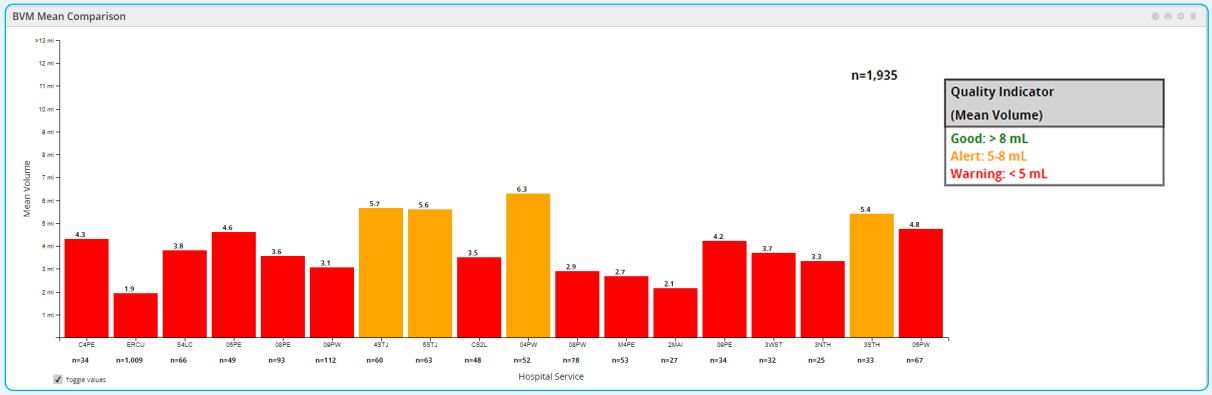
Unique bottleneck design allows for compatibility with standard blood collection sets which:

- Reduces inventory requirements for extra adapters as compared to other blood culture manufacturers
- Reduces the need to switch out adapters mid draw
- Decreases cost of overall specimen collection as compared to other blood culture manufacturers

BD Synapsys™ Informatics Solution offers insights that may help support quality improvement initiatives such as:

- Blood volume monitoring
- Blood culture positivity rates
- Blood culture contamination rates
- Blood culture media utilization (e.g., number of bottles collected)

Blood volume monitoring report



Analytical phase

Media selection and instrumentation can impact recovery and time to detection of clinically significant organisms

Greater than one-third of patients hospitalized with sepsis may die prior to hospital discharge.[24] To help reduce morbidity and mortality of septic patients, recommended blood culture collection best practices include[19]:

- Collection of proper blood volume
- Collection of at least two sets of blood cultures prior to antimicrobial therapy
- Incubation of blood culture bottles as soon as possible

BD BACTEC™ Perfect Media Pair

The combination of BD BACTEC™ Plus Aerobic and Lytic Anaerobic media has been shown to improve time to detection and recovery of organisms.[25]

BD BACTEC™ Myco F/Lytic Medium

A uniquely formulated medium for the recovery of mycobacteria, yeast and fungi from blood, or sterile body fluids when yeast or fungi are suspected.

BD BACTEC™ Platelet Media

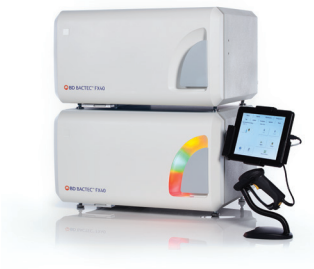
For culture-based testing of platelet donations, BD offers the FDA-cleared platelet testing media for use in the quality-control testing of leukocyte-reduced apheresis platelet units and pooled leukocyte reduced whole blood platelet concentrates.

BD BACTEC™ FX Instrumentation

BD BACTEC™ FX instruments allow for simple and rapid workflow across multiple sites of a healthcare system. Scalable and modular design offers flexibility to support placement of an instrument near point of collection that helps to reduce time to Gram stain and time to result for organism identification and susceptibility testing which may enable earlier decision making regarding antimicrobial treatment.[26]

BD BACTEC™ FX Top and Bottom Instruments

BD BACTEC™ FX40 Instrument



BD Synapsys™ Informatics Solution offers secure connectivity and tools to monitor:

- Workflow
- Compliance to best practices
- Instrument utilization

Post-analytical phase

Actionable insights help drive continuous improvement

An estimated 23% of clinical errors occur in the post-analytical phase of testing and are partly due to[27]:

- Improper validation of analytical data
- Failure in reporting
- Inappropriate follow-up plans

BD Synapsys™ Informatics Solution

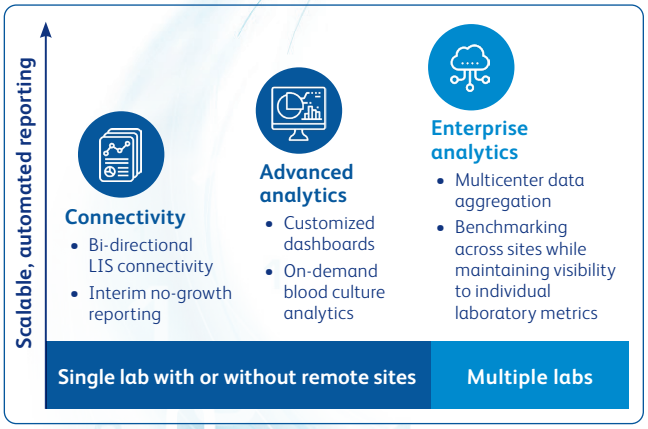
Access to data analytics enables key metric comparison within a laboratory network or against a benchmark

- Blood culture contamination and positivity rates
- Blood culture fill volume
- Blood culture time to positivity
- Time of removal of positive blood culture by laboratory personnel
- Blood culture media utilization

Distinct modules allow for the appropriate level of capabilities to meet individual institutional needs

- Connect multiple laboratories to automatically collect and aggregate data
- Integrate data from multiple laboratory locations for benchmarking purposes, while maintaining visibility to individual laboratory data
- Empowering healthcare professionals to drive standardized blood culture collection metrics which may impact financial and operational outcomes
- Scalable, automated reporting to drive standardization

Positivity and contamination rate monitoring



BD Synapsys™ Informatics Solution offers security by design

The risk to patient privacy due to data breaches is of increasing cybersecurity concern within the healthcare community. **BD Synapsys™ Informatics Solution provides:**

- UL CAP certification, which verifies that the system has proven robustness against tested software vulnerabilities and weaknesses.
- Compliance with SOC2 guidelines, which ensures that service procedures are aligned with the most stringent cybersecurity requirements.

BD ID/AST Solutions

The integrated BD bloodstream infection solution addresses your identification and susceptibility testing needs with speed, accuracy and efficiency.

The BD™ Bruker MALDI Biotyper™ offers:

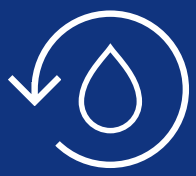
- Rapid identification of microorganisms isolated from positive blood cultures
- A broad library of organisms to ensure accurate interpretation
- Batching capability for workflow optimization

The BD Phoenix™ automated ID/AST solution provides:

- Demonstrated performance in the detection of emerging resistance[29]
- Up-to-date breakpoint guidelines, more than other conventional AST platforms, to help detect antimicrobial resistance more accurately and reduce the need for offline testing[30]
- Built-in resistance marker testing including detection of carbapenemase producing organisms

BD ID/AST Solutions: ✓ Speed ✓ Accuracy ✓ Efficiency

Choose the BD BACTEC™ Blood Culture System as part of the integrated, end-to-end BD Bloodstream Infection Solution that seamlessly connects specimen collection, blood culture and antimicrobial susceptibility testing



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BD Life Sciences, 7 Loveton Circle. Sparks, MD, 21152, U.S.
800.638.8663

bd.com