BLOOD CULTURE (BCx) RECOMMENDATIONS FOR NON-NEUTROPENIC ADULT PATIENTS

BCx being considered for symptoms/signs of infection including fever or leukocytosis

Patient is clinically unstable with severe sepsis/septic shock

- BCx NOT RECOMMENDED
  - Negative blood cultures within last 48 hours
  - YES

- BCx RECOMMENDED
  - Draw 2 peripheral sets (2 sticks)
  - YES

- Obtain BCx based on likelihood of bacteremia or candidemia
  - Evaluate for source control

High (>50%)

- Infective endocarditis or endovascular infection
- CLABSI
- Epidural abscess or discitis
- Native vertebral osteomyelitis or non-traumatic native septic arthritis
- Meningitis

Intermediate (≥10% and <50%)

- Acute pyelonephritis
- Cholangitis
- Non-vascular shunt infections
- Prosthetic vertebral osteomyelitis
- Severe CAP
- Cellulitis with comorbidities
- HAP/VAP

Low (<10%)

- Isolated fever without chills and/or leukocytosis
- Non-severe cellulitis
- Lower UTI (e.g., cystitis or prostatitis)
- Non-severe CAP/HAP
- Post-operative fever within 48 hours of surgery

BCx RECOMMENDED
- Draw 2 peripheral sets (2 sticks)
- YES

- Is the patient at risk for an endovascular infection?
- Is the primary site (source) of infection not readily available for culture prior to starting antibiotics?
- Will BCx results impact subsequent care (e.g., concern for resistance or worsening clinical status)?

BCx NOT RECOMMENDED
- NO
Is the BCx to document clearance for one of the below indications?
- *Staphylococcus aureus, S. lugdunensis, or enterococcal* bacteremia
- *Candida* fungemia
- Bacteremia or fungemia with a suspected endovascular infection^† OR patient at risk for an endovascular infection^‡
- CLABSI before catheter replacement

**YES**

**BCx RECOMMENDED**
**Draw 1 peripheral set**

**NO**

**Does the patient have one of the following:**
- Persistent bacteremia or fungemia in the setting of a lack of source control, lack of clinical improvement, or ineffective therapy
- A single positive culture with skin flora (i.e., coagulase negative staphylococci) AND signs and symptoms of an infection including those with prostheses or central venous catheters
- Viridans group streptococci with clinical concern for endocarditis

**YES**

**BCx RECOMMENDED**
**Draw 1 peripheral set**

**NO**

**BCx NOT RECOMMENDED**
ADULT PATIENTS WITH NEUTROPENIC FEVER (ANC <500)

Blood cultures are not recommended after 72 hours of persistent febrile neutropenia except in the setting of new hemodynamic instability, prior positive blood cultures, or as recommended by the infectious diseases consult service.

Footnotes:

The above algorithms are not a substitute for clinical judgment.

* Blood culture (BCx) required by US Centers for Medicare and Medicaid Services severe sepsis criteria of the Severe Sepsis and Septic Shock Early Management Bundle.
† Endovascular infection: Septic thrombophlebitis, infected endovascular thrombi, implantable cardioverter defibrillator (ICD)/pacemaker lead infections, intravascular catheter infections, VAD, and vascular graft infections.
‡ Patients at risk of endovascular infection: ICD/pacemaker, VAD, vascular graft, prosthetic valves and prosthetic material used for cardiac valve repair, history of infective endocarditis, valvulopathy in heart transplant recipient, unrepaired congenital heart disease, repaired congenital heart disease with residual shunt or valvular regurgitation, or within the first 6 months post-repair.
§ Cellulitis in patients with comorbidities: Immunocompromised hosts or those at risk of poor outcomes missed S. aureus bacteremia.
¶ A single set of BCx for Enterococcus in patients without valvular heart disease and no urinary retention/obstruction that would predispose patients to bacteremia may not need repeat BCx.

Abbreviations: BCx, blood culture; CAP, community-acquired pneumonia; CLABSI – central line associated bloodstream infection; HAP, healthcare-associated pneumonia; UTI, urinary tract infection; VAD, ventricular assist device; VAP, ventilator-associated pneumonia

References: