A flowchart of the clinical decision pathways to decide whether to draw bacterial blood cultures among non-neutropenic adult patients. There are two different pathways - for blood cultures being considered for new clinical events, and for blood cultures being considered to document clearance of bacteria.

Originally published in “Does This Patient Need Blood Cultures? A Scoping Review of Indications for Blood Cultures in Adult Nonneutropenic Patients” by Fabre et al in *Clinical Infectious Diseases,* September 2020. Used with permission. Image is adapted.

# Algorithm of Indications for Bacterial Blood Cultures for

# Non-Neutropenic Adult Patients

* This algorithm is not a substitute for clinical judgment.
* Peripheral BCx are preferred over central lines blood cultures due to lower rate of false positive results.
* Always draw 2 peripheral sets (i.e., 4 bottles with 8-10cc/bottle).

Avoid use of blood cultures when they are not clinically appropriate. The algorithm presented here is intended as a decision-making aid to assess when blood cultures are necessary.

The algorithm differentiates between initial indications for blood cultures in the setting of a new clinical event, and “follow up” blood cultures that are sometimes indicated to determine and document clearance of bacteremia.

## For blood cultures being considered in the setting of a new clinical event:

1. **Assess if severe sepsis/septic shock or endovascular infection** is suspected.
   * If **Yes**, blood cultures are recommended.
2. **Categorize for probability of bacteremia into three categories:** **High**, **Intermediate**, and **Low**. Examples of what fits these categories are provided in the flowchart.

* For **High probability of bacteremia**, blood cultures are recommended.
* For **Low probability** **of bacteremia**, blood cultures are **NOT** recommended.

1. For **Intermediate probability of bacteremia**, assess for the following:
   * 1. **Is the patient at risk for endovascular infection?**
     2. **Is the primary site of infection not readily available for culture?**
     3. **Are blood cultures results otherwise likely to impact patient management?**
   * **If the answer to all three questions is No**, then blood cultures are NOT recommended.

## For follow-up blood cultures to document clearance of bacteremia:

1. Assess if blood culture is to document clearance in three scenarios:
   * 1. **Bacteremia due to *Staphylococcus aureus* or *Staphylococcus lugdunensis***
     2. **Infective endocarditis or at risk of endovascular infection**
     3. **Catheter-related bloodstream infection before catheter replacement**
   * If **Yes to any of these scenarios**, blood cultures are recommended.
2. Assess if blood culture is needed for either:
   * 1. **Single positive blood culture with skin flora in a symptomatic patient**
     2. **Concern for persistent bacteremia in the absence of source control**

* If **Yes to either**, blood cultures are recommended.

1. Otherwise, blood cultures are **NOT** recommended.

**Adapted from:**

* Fabre V, Klein E, Salinas AB, et al. A diagnostic stewardship intervention to improve blood culture use among adult nonneutropenic inpatients: the DISTRIBUTE study. J Clin Microbiol. 2020 Sep 22;58(10):e01053-20. PMID: 32759354.
* Fabre V, Sharara SL, Salinas AB, et al. Does this patient need blood cultures? a scoping review of indications for blood cultures in adult nonneutropenic inpatients. Clin Infect Dis. 2020 Aug 22;71(5):1339-1347. PMID: 31942949.