pathlab



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Single Site Blood Culture Sampling for Adults

Single-site blood culture sampling is now recommended as the standard approach for adult patients requiring blood cultures, except where specific clinical indications necessitate sampling from separate sites. Single-site sampling involves collecting the full recommended blood volume from a single peripheral venipuncture and inoculating all bottles.

"Separate-site sampling" should only be considered for suspected line-related bloodstream infection, infective endocarditis, or when directed by infectious diseases or clinical microbiology.

Blood cultures are a core diagnostic investigation in patients with suspected bloodstream infection or sepsis. The sensitivity of pathogen detection in blood cultures is optimised when two complete blood culture sets (4 bottles) are taken with 10ml in each bottle.[1] However, a relatively recent nationwide audit on blood cultures showed that 46.5% of patients (Bay of Plenty) and 35.8% (Lakes) only had a single set of blood cultures taken.[2]

Key benefits of single site blood culture sampling include improved compliance with recommended blood volumes, reduced opportunities for skin contamination, improved patient experience, and alignment with diagnostic stewardship principles.[3]

- **Collect two sets (four bottles) from a single peripheral venipuncture.**
- **Ensure total blood volume of 40–60 mL (10 mL per bottle).**
- **Use strict aseptic technique with appropriate skin antisepsis.**
- **Collect cultures prior to antibiotic administration when feasible.**

Blood culture contamination rates and collection compliance will continue to be monitored as part of laboratory quality assurance.

References

1. Single-Site Sampling versus Multisite sampling for blood cultures: A retrospective clinical study: Ekwall-Larson A, Yu D,Dinnétz P, Nordqvist H, Özenci V, 2022. J Clin Microbiol 60:e01935-21.
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3. Single-site sampling strategy versus multisite sampling strategy in blood culture collection: Vashti A et al. American Journal of Infection Control, 2025.

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CLINICAL UPDATE