

17. REDUCE IATROGENIC BLOOD LOSS

Strategies and techniques to minimise iatrogenic anaemia will result in reduced blood loss (PBM pillar 2).

Key messages

- Diagnostic testing is an important cause of blood loss in critically ill patients¹.
- The use of microsampling has been shown to significantly reduce the volume of blood loss and has been associated with a significant reduction in blood transfusion.¹
- The introduction of point-of-care testing could further reduce the volume of samples drawn.

Clinical implications

- Implementing strategies to reduce iatrogenic blood loss in an organisation requires strategic planning, communication and implementation with relevant stakeholders such as medical staff, laboratory scientist and nursing staff.
- Having a process and device to reinfuse initial blood loss from indwelling devices has been associated with a 50% reduction in diagnostic blood loss.²
- Only order essential blood tests and minimise the volume of blood drawn.³

Background

Iatrogenic anaemia is a term applied to the anaemia that results from blood loss due to repeated venepunctures for the purposes of obtaining specimens for laboratory testing. Strategies to reduce iatrogenic blood loss include altering of test ordering behaviour (limiting the number of tests ordered), micro-sampling, reinfusion of blood drawn from indwelling devices and point of care microanalysis.^{1,2,4,5}

Micro sampling is when small (paediatric) volumes of blood are withdrawn from the patient rather than the larger quantities routinely drawn for laboratory sampling. Two separate studies have noted the average daily blood sampling volume in ICU was 41mL.^{4,5} In one study this represented 17% of total blood loss in those admitted to ICU for more than three days.³ The use of micro sampling in ICU has been shown to reduce the volume of blood loss by 37% - 47%,¹ and in one study was associated with a significant reduction in blood transfusion.¹

Traditionally, when drawing blood from indwelling devices (such as arterial or central venous catheters), the initial sample used to clear the line is discarded. Having a process and device to reinfuse the initial blood taken to 'clear the line' (drawback blood) has been associated with a 50% reduction in diagnostic blood loss.² The Western Australian Patient Blood Management Program has two examples of Blood Conservation in-line device policies available at: <http://www.health.wa.gov.au/bloodmanagement/professionals/tools.cfm>.

References

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4. Von Ahsen N, Muller C, Serke S, et al. [Important role of nondiagnostic blood loss and blunted erthropoietic response in the anaemia of medical intensive care patients](#). Crit Care Med 1999;27:2630-9.
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