



# PBM

Patient Blood  
Management



**40%**  
less blood!

# Patient Blood Management

what's it all about?



Patient Blood Management (PBM) is a multi-faceted and interdisciplinary treatment concept for improving patient care. The aim is to handle the patient's blood with the greatest possible care, so that the patient's exposure to allogeneic blood or allogeneic blood products in the event of anemia is kept as low as possible. This should reduce the development of hospital-acquired anemia to a minimum or completely prevent it.<sup>1,2,3</sup>

The PBM concept is based on three key elements:

1. Diagnosis and therapy of pre-operative anemia
2. Reduction of laboratory diagnostic and interventional blood loss
3. Rational use of erythrocyte concentration and utilization of individual anemia tolerance

Laboratory diagnostic blood loss and clinical relevance

Hospital-associated anemia has an adverse effect on disease progression. Blood loss is especially high in cardio-surgical patients, patients with coagulation disorders, and in cases of long-term ventilation and multiple procedures due to the high frequency of blood collections.

Children, the elderly and patients with a low body weight are particularly affected.

The clinical relevance of diagnostic blood loss is still often underestimated.

Related research shows that:

- Seriously ill patients lose an average of 40–70 ml of blood/day<sup>4,5</sup> and an average of 300–500 ml blood during a seven-day hospital stay<sup>6,7</sup>
- > 50% of all intensive care patients are transfused with allogeneic blood products<sup>8,9</sup>
- Diagnostic blood loss correlates with the frequency and severity of hospital-acquired anemia<sup>10</sup>

How can laboratory diagnostic blood loss be reduced?

Laboratory diagnostic blood loss<sup>3,7</sup> can be reduced by decreasing the sample volume of a blood collection tube. Today, only the smallest amount in the µl range is required to measure laboratory parameters.

S-Monovette® PBM – specially developed for reduced sample volumes

With the innovative and newly developed S-Monovette® 1.8 ml, SARSTEDT offers a blood collection tube with a blood volume more than 40% lower than traditional tubes. Despite the reduced volume, the standardized outer tube dimensions of the S-Monovette® are compatible with a range of analyzers.

1. *Journal Klinikarzt Medizin im Krankenhaus* 44. Jahrgang 3/2015: Patient Blood Management, Georg Thieme Verlag
2. *KVH aktuell* Jahrg. 20, Nr. 3 | September 2015: Kapitel ANÄMIE-SPECIAL Prof. Dr. med. P. Meybohm *Transfusionsmedizin: Richtig handeln bei präoperativer Anämie I-XII*
3. *Patient Blood Management Braun-Scharm und Kollegen, Kapitel 4 Gombotz*, Thieme Verlag 1. Auflage 2013
4. Corwin, et al. *The CRIT study: anemia and blood transfusion in the critically ill: current clinical practice in the United States. Crit Care Med* 32:39-52, 2004.
5. Vincent et al. *Anemia and blood transfusion in critically ill patients. JAMA* 2002, 288: 1499-1507.
6. Salisbury, et al. *Diagnostic blood loss from phlebotomy and hospital-acquired anemia during acute myocardial infarction. Arch Intern Med. Vol 171 (no. 18), Oct 10, 2011.*
7. Steiner et al *Anämie auf einer Intensivstation. Blutentnahmen und Hämoglobinverlauf. Gemeinsame Jahrestagung der Schweizerischen Gesellschaften für Kardiologie, für Pneumologie, für Thoraxchirurgie, und Intensivmedizin Juni 2006*
8. Corwin, et al. *RBC transfusion in the ICU: is there a reason? Chest* 108:767-771, 1995.
9. Rao, et al. *Blood component use in critically ill patients. Anesthesia* 57:530-551, 2002.
10. Becquet, et al. *Respective effects of phlebotomy losses and erythropoietin treatment on the need for blood transfusion in very premature infants. BMC Pediatrics* 13:176-182, 2013.



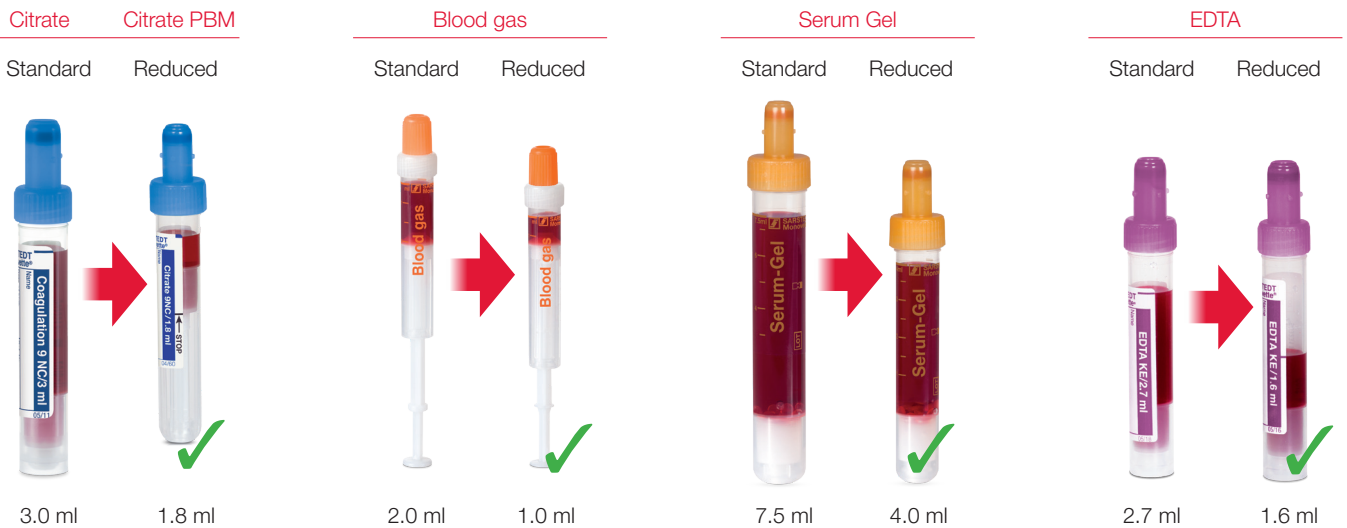
**SARSTEDT**



# S-Monovette® with reduced sample volume

benefits for the patient

- Significantly reduced laboratory diagnostic blood loss
- Reduced rate of hospital-acquired anemia
- Better patient outcome



## Ordering information

Preparation	Volume	Length/Ø	Order number based on BS 4851 (EU Code)	Order number based on ISO 6710 (US Code)
Serum Gel	2,7 ml	75 x 13 mm	04.1923.001	
	4,0 ml		04.1925/04.1925.001	
Serum	2,7 ml	75 x 13 mm	04.1943.001	
	4 ml		04.1924	
EDTA	1,6 ml	66 x 11 mm	05.1081/05.1081.001	
	1,8 ml	65 x 13 mm	04.1951/04.1951.001	
Citrate	1,8 ml	75 x 13 mm	04.1955/04.1955.001	
Blood gas	1,0 ml	66 x 11 mm	05.1146/05.1146.020*	

\*individually wrapped, sterile

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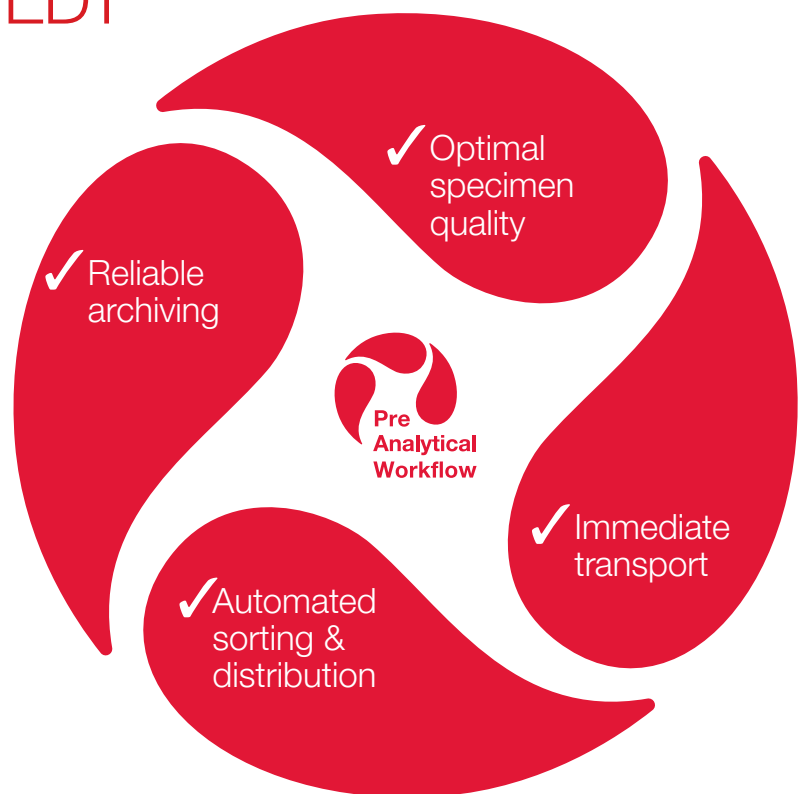
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If you have any questions:  
We'd be happy to help!



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