



## What is Patient Blood Management?

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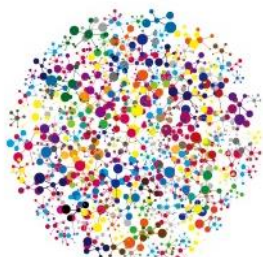
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For many physicians and clinicians and across many different specialties, blood transfusion is still considered the first line treatment when facing anemia and/or blood loss. In the European Union (EU), more than 5 million patients are receiving around 24 million units of blood or blood components each year (Annual Summary of the Reporting of Serious Adverse Reactions and Events, 2015, European Commission). However, a large body of clinical evidence shows that in many clinical scenarios both anemia and blood loss can be effectively treated with a series of evidence-based measures to better manage and preserve a patient's own blood, rather than resorting to a donor's blood, thus leading to a significant overall reduction of blood transfusions (1).

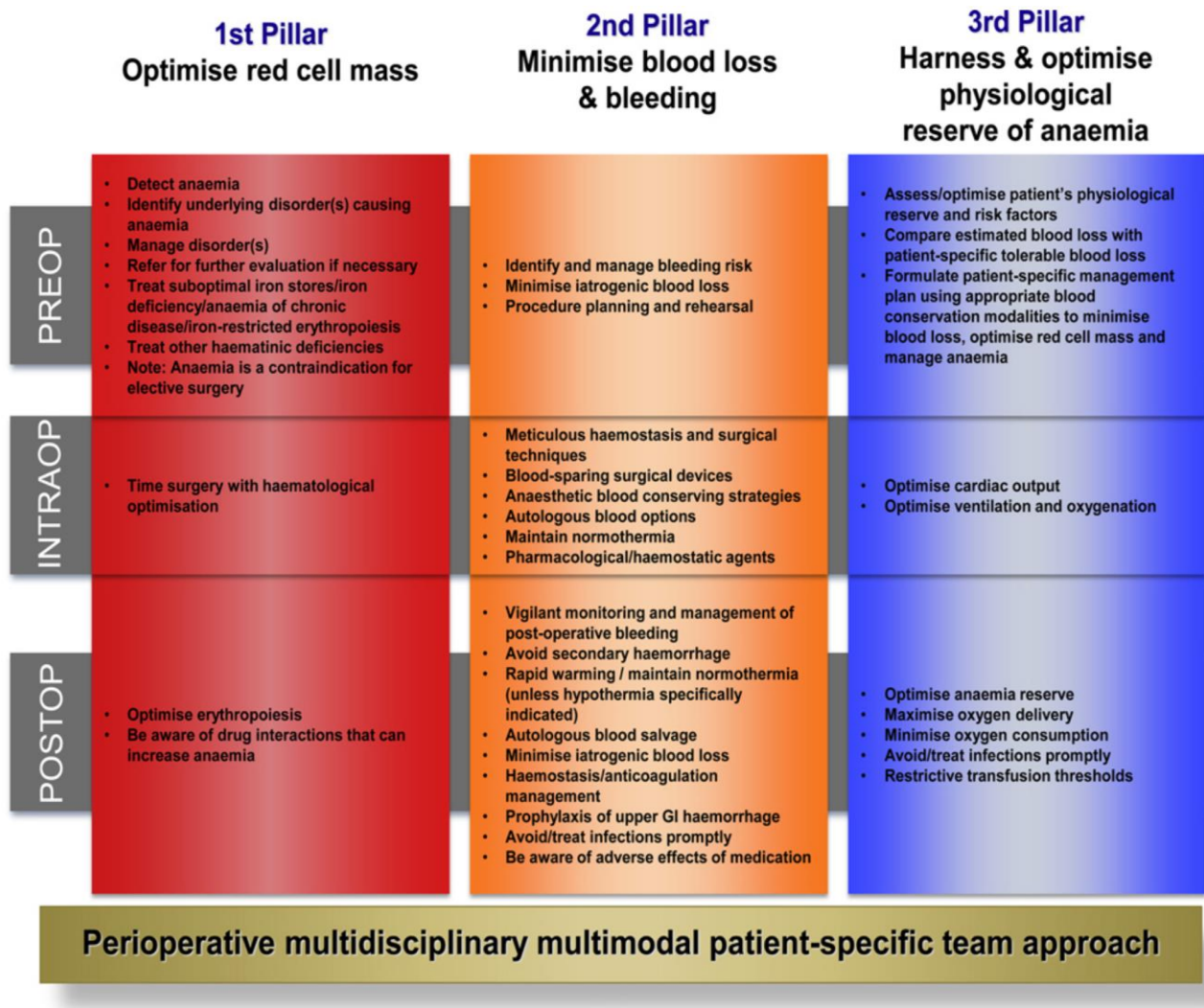
This is why over the last decade the focus in the EU, United Kingdom, Australia, U.S.A. and elsewhere, has shifted from ensuring safety and quality of blood and blood components (product focused) towards a broader concept that takes a holistic, multi-disciplinary approach to caring for each patient's hematopoietic system in a manner that aims to ensure the best possible outcome (patient-focused). This widely accepted approach is referred to as Patient Blood Management (PBM) (1).

According to the WHO, PBM is a "patient-focused, evidence based and systematic approach for optimizing the management of patients and transfusion of blood products to ensure high quality and effective patient care" (2). In 2010 the World Health Assembly Resolution WHA63.12 endorsed PBM specifically referring to the three-pillar concept "bearing in mind that patient blood management means that before surgery every reasonable measure should be taken to optimize the patient's own blood volume, to minimize the patient's blood loss and to harness and optimize the patient-specific physiological tolerance of anemia" (3). The resolution urges WHO Member States to promote PBM where appropriate. It also requests the Director General of the WHO to provide guidance, training and support to Member States on safe and rational use of blood products and to support the introduction of transfusion alternatives and PBM (1). The concept of PBM is composed as the 3-pillar 9-field matrix of perioperative patient blood management (figure) (4).

Potentially Blood shortage has been due to changing population dynamics, donor deferrals, loss of altruism, wide variations in transfusion practice. Unsustainable escalating direct and indirect costs of blood, growing knowledge of transfusion limitations and adverse outcomes necessitate a paradigm shift in the management of anemia and blood loss. The concept of patient-focused blood management is proving to be an effective force for change. Many studies on the benefits of PBM are being published. The first of them was published in 2016, West Australia. In July 2008, the Western Australia (WA) Department of Health embarked on a landmark 5-year project to implement a sustainable comprehensive health-system-wide PBM Program. Fundamentally, it was



a quality and safety initiative, which also had profound resource and economic implications. This approach has now evolved to embrace comprehensive hospital-wide PBM Programs. These programs show significant reductions in blood utilization, and costs while achieving similar or improved patient outcomes. The WA Program is achieving these outcomes across a health jurisdiction in a sustained manner (4). They also published continuous study result in 2017. In a health system with one of the world’s lowest RBC issuance rates per 1000 population and an already relatively restrictive mean RBC transfusion threshold, a comprehensive, jurisdiction-wide PBM program in the hospitals in WA was associated with significant hospital-wide reductions in



morbidity, mortality, length of stay, blood product use, and costs. The decreasing blood product issuance rates highlight the finding that, since conclusion of the 5-year project, the culture generated by the PBM program in WA has been sustained (5).

The future of blood transfusions is in the PBM program. PBM is the timely application of evidence-based medical and surgical concepts designed to maintain Hb concentration, optimize hemostasis and minimize blood loss in an effort to improve patient outcome. Benefits of PBM program is reducing transfusion rate, reducing mortality, reducing length of hospital staying, reducing reoperation, reducing readmission, reducing complication and reducing hospital.



## References

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- (4) [Farmer SL](#), [Towler SC](#), [Leahy MF](#), [Hofmann A](#). Drivers for change: Western Australia Patient Blood Management Program (WA PBMP), World Health Assembly (WHA) and Advisory Committee on Blood Safety and Availability (ACBSA). *Best Pract Res Clin Anaesthesiol.* 2013 Mar;27(1):43-58. doi: 10.1016/j.bpa.2012.12.007.
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