

Patient Blood Management Stewardship Campaign Nepal

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Abstract

Although the World Health Organization has endorsed Patient blood management (PBM) in 2010 many hospitals still seek guidance with the implementation of PBM in clinical routine. This article presents how a Himalayan country; Nepal collaborate to form a task force to develop recommendation implementing PBM in clinical practice for improved outcomes.

Keywords: Anemia, Hemostasis, Blood Products, Pharmacological Agents, Patient Blood Management

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Introduction

Patient Blood Management (PBM) is the timely application of evidence-based medical and surgical concepts designed in an effort to improve patient outcomes. This strategy is organized into three main pillars: (1) comprehensive anemia management; (2) optimizing hemostasis and minimize bleeding and blood loss; and (3) harness and optimize the patient-specific physiological tolerance of anemia and restrictive transfusion (RBCs, plasma, and platelets).¹⁻³

There is a constantly growing body of evidence showing the positive impact of implementing PBM which extends beyond improving blood products safety and availability.^{4,6} The benefits of implementation include improved outcomes particularly lower morbidity, mortality and reduced length of stay in hospital and the ICU. In addition, the benefits on health system include reduced costs and resource utilization, improved clinical key performance indicators and quality metrics; more satisfied patients and potentially higher staff retention rates.⁷⁻⁹

The WHO published “THE URGENT NEED TO IMPLEMENT PATIENT BLOOD MANAGEMENT” in 2021.¹⁰ This policy brief aimed to create a sense of urgency for health care entities to implement PBM as a response to the recognition of a gap between awareness and implementation of PBM worldwide.

Similarly, in 2022 ESC Guidelines on Cardiovascular Assessment and management of Patients undergoing Non-Cardiac Surgery states that in patients undergoing surgery with expected blood loss of $\geq 500\text{mL}$, use of washed cell salvage is recommended. It is also recommended to use point-of-care diagnostics for guidance of blood component therapy, when available.¹¹

One major challenge in treating severely bleeding patients is determining whether the blood loss is attributable to surgical causes or coagulopathy. Also, in patients with periprocedural bleeding, conventional coagulation tests provide limited information to guide further management.

Whole-blood viscoelastic tests (VET) like rotational thromboelastometry (ROTEM) offer comprehensive real-time

actionable information to evaluate and manage bleeding. They provide information about the initiation and speed of coagulation and quality and stability of the clot, including fibrinolysis. VETs have the potential to guide transfusion or pharmacotherapy customized to individual patient needs, thereby preventing irrational transfusions and/or its complications as well as health-economic benefits around precious resources like blood components. VETs, when used in conjunction with validated algorithms, can guide on key issues like what to transfuse, when to transfuse and how much to transfuse.

Looking at the progress worldwide, the multi-disciplinary team at Shahid Gangalal National Heart Center (SGNHC) took initiative to enhance knowledge about principles and practices of patient blood management (PBM) on November 2021. The concept of early, individualized and goal-directed therapy is practiced in cardiac operations at SGNHC using ROTEM, a newer modality started in the country from 2022. Goal directed bleeding management (GDBM) will change empirical blood and blood product transfusion that would decrease the cost, complications and casualties related to both transfusion and bleeding.

“On behalf of my team at Shahid Gangalal National Heart Center, I do want to thank the Werfen Academy India for the dissemination of education through three virtual editions of certificate course in patient blood management offered complimentary to people of Nepal as well as CME and hands on workshop on “Goal directed bleeding management using Rotational Thromboelastometry”.

The multi-disciplinary team further took a step forward to formulate a task force with Dr. Klaus Görlinger being the chair and along with identified specialists of different hospital of the valley. The main objective of the task force is to make a guideline to implement the principles and practices of patient blood management. There is also a need to extend the concept to disorder other than cardiac procedures like postpartum hemorrhage, trauma and sepsis where the patient is likely to have coagulopathy bleed. So, let's widen our vision around the objectives of this task force based on the need of our center and the country.

Task Force

Chairperson: Dr. Klaus Görlinger, Anesthesiologist & Hemostasiologist.

Secretary: Dr. Ashish G. Amatya, Cardiac Anesthesiologist.

Coordinator: Dr Ajay Gandhi, Hemato-pathologist

Executive Members:

Dr. Bijoy Rajbanshi, Cardio-thoracic Vascular surgeon

Dr. Amit Shrestha, Clinical Hematologist

Dr. Bipin Nepal, Transfusion medicine

Dr. Bishesh Poudyal, Clinical Hematologist and Bone marrow transplant

Dr. Prahar Dhakal, Clinical Pathologist

Dr. Battu K. Shrestha, Cardiac Anesthesiologist

Dr. Chandramani Adhikari, Cardiologist

Dr. Diptesh Aryal, Intensivist

Dr. Apurb Sharma, Cardiac Anesthesiologist

Dr. Ravi Baral, Cardio-thoracic Vascular Surgeon

Dr. Arjun Gurung, Cardiac Anesthesiologist

Dr. Hem R. Paneru, Intensivist

Dr. Nirmal Panthi, Cardio-thoracic Vascular surgeon

Following are the enlisted objective and future plan of the task force.

- To formulate best practice recommendations / guidelines
- To standardize goal directed bleeding management
- To establish clinical evidence on improved outcomes

In conclusion, we have formed this task force for a noble cause. We must realize that we have a large objective and hence, we need more strength to accomplish the same. Our strength is helping hands of wise people. We need more and more helping hands; we encourage more to join the group. Working better together, we achieve the goal.

References

- 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.
- Görlinger K, Saner FH. Prophylactic plasma and platelet transfusion in the critically ill patient: just useless and expensive or even harmful? *BMC Anesthesiol.* 2015 Jun 9;15:86.
- Steinbicker AU, Wittenmeier E, Goobie SM. Pediatric non-red cell blood product transfusion practices: what's the evidence to guide transfusion of the 'yellow' blood products? *Curr Opin Anaesthesiol.* 2020 Apr;33(2):259-267.
- Leahy MF, Hofmann A, Towler S, Trentino KM, Burrows SA, Swain SG, Hamdorf J, Gallagher T, Koay A, Geelhoed GC, Farmer SL. Improved outcomes and reduced costs associated with a health-system-wide patient blood management program: a retrospective observational study in four major adult tertiary-care hospitals. *Transfusion.* 2017 Jun;57(6):1347-1358.
- Althoff FC, Neb H, Herrmann E, Trentino KM, Vernich L, Füllenbach C, Freedman J, Waters JH, Farmer S, Leahy MF, Zacharowski K, Meybohm P, Choorapoikayil S. Multimodal Patient Blood Management Program Based on a Three-pillar Strategy: A Systematic Review and Meta-analysis. *Ann Surg.* 2019 May;269(5):794-804.
- Kikura M, Uraoka M, Nishino J. Restrictive blood transfusion and 1-year mortality in patients undergoing open abdominal surgery: A retrospective propensity score-matched cohort study. *Transfus Clin Biol.* 2022 Aug 5:S1246-7820(22)00095-7. doi: 10.1016/j.tracli.2022.08.003. Online ahead of print.
- Mehra T, Seifert B, Bravo-Reiter S, Wanner G, Dutkowski P, Holubec T, Moos RM, Volbracht J, Manz MG, Spahn DR. Implementation of a patient blood management monitoring and feedback program significantly reduces transfusions and costs. *Transfusion.* 2015 Dec;55(12):2807-15.
- Leahy MF, Hofmann A, Towler S, Trentino KM, Burrows SA, Swain SG, Hamdorf J, Gallagher T, Koay A, Geelhoed GC, Farmer SL. Improved outcomes and reduced costs associated with a health-system-wide patient blood management program: a retrospective observational study in four major adult tertiary-care hospitals. *Transfusion.* 2017 Jun;57(6):1347-1358.
- Görlinger K, Dirkmann D, Tanaka KA, Shander A, Spahn DR, Hofmann A. Implementation of Thromboelastometry-guided PBM results in Cost-Savings for Blood Product Acquisition and Potentially Preventable Hospital Acquired Complications (PPCs). *dggö.* 2018 Mar 5-6: 228-9. https://file.dggoe.de/jahrestagung_2018/dggoe-Programm-Hamburg-v2018-02-18.pdf
- World Health Organization (WHO). The Urgent Need to Implement Patient Blood Management: Policy Brief. 2021; ISBN 978-92-4-003574-4 (electronic version); <https://apps.who.int/iris/bitstream/handle/10665/346655/9789240035744-eng.pdf?sequence=1&isAllowed=y>
- 2022 ESC Guidelines on cardiovascular assessment and management of patients undergoing non-cardiac surgery: Developed by the task force for cardiovascular assessment and management of patients undergoing non-cardiac surgery of the European Society of Cardiology (ESC) Endorsed by the European Society of Anaesthesiology and Intensive Care (ESAIC), *European Heart Journal*, 2022; ehac270, <https://doi.org/10.1093/eurheartj/ehac270>