2nd MALAYSIAN SOCIETY OF PATIENT BLOOD MANAGEMENT SCIENTIFIC CONFERENCE

POST-EVENT REPORT
13-15 February 2025

Malaysian Society of Patient Blood Management

ASPBM

World ANEMIA Awareness
IRON DEFICIENCY & ANEMIA COMMUNITY

Report prepared by
vista health

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INTRODUCTION

The 2nd Malaysian Society of Patient Blood Management (MyPBM) Scientific Conference was a collaboration between MyPBM, the Asia-Pacific Society for Patient Blood Management (ASPBM) and World Anemia Awareness. The conference, themed **"Recipe for Optimal Blood Health"**, convened leading experts, researchers, clinicians, and healthcare professionals. Throughout the three-day event, speakers shared strategies to optimise blood health and discussed the latest developments to reinforce the practice of Patient Blood Management (PBM) programs in Malaysia and globally.

PBM is a patient-centred, systematic, evidence-based approach to improve patient outcomes by managing and preserving patients' own blood while promoting patient safety and empowerment. PBM is precision medicine – the care of each unique patient's blood to achieve complete blood health.

However, the lack of education about PBM, even within the healthcare community, hinders its successful implementation. By raising awareness of PBM, challenging common misconceptions, and promoting mutual learning, this conference takes an important step towards achieving optimal blood health.

Debunking Common Misconceptions in Patient Blood Management

Misconceptions	Facts
Blood transfusions are a standard part of surgery given their excellent safety profile	Blood transfusions are a form of organ transplant, carrying significant morbidity and mortality risk; they should be the last resort when other avenues fail
Blood transfusions are necessary in surgeries to replace blood loss and ensure adequate oxygen delivery to tissues	Bloodless surgeries are superior and should be made possible by optimising pre-operative haemoglobin levels, leveraging minimally invasive techniques and optimising patients' anaemia tolerance
Low haemoglobin levels indicate the need for blood transfusions	Treat the patient, not the haemoglobin level – plenty can and should be done, to treat the disease and patient behind the number before reaching for a transfusion
Blood transfusions are a low-cost intervention; many hospitals obtain blood for free or at a low cost	The cost of blood to the health system is often hidden due to government subsidies; the cost of administering blood also accounts for 3 – 5 times the cost of blood itself
There is insufficient evidence to support the implementation of PBM programs	Despite significant evidence that PBM improves patient outcomes at lower costs, implementation has been hindered by a lack of awareness, funding, and resistance to change

13 FEBRUARY 2025:

RECOGNISE THE SILENT PANDEMIC - ANAEMIA

The Minister of Health Malaysia, YB Datuk Seri Haji Dr. Dzulkefly Bin Ahmad, officially opened the conference on World Anaemia Awareness Day. In reaffirming Malaysia's commitment to blood health, a PBM Task Force has been established under the Ministry to guide the nation in implementing PBM programs through top-down strategies.

Malaysia transfuses 2500 bags of blood daily, which amounts to RM 2.5 million in cost. However, studies have shown that up to 90% of blood transfusions are inappropriate and can pose mortality and morbidity risks.

Reducing transfusion rates is therefore critical not only to improve patient outcomes but also to reduce costs to the health system.

Dr. Aryeh Shander, a pioneer in PBM, kicked off the conference with a keynote talk outlining the key factors for successful PBM program implementation. These include strong leadership, effective data collection, awareness generation and a succession plan to educate future generations. In the spirit of awareness generation, Day 1 of the conference marked the launch of the first-ever **"24-hour Global Anemiathon"**, organised by World Anemia Awareness. To bridge the gap of literacy in blood health, the campaign brought together medical professionals and patients around the globe to talk about their experiences in managing blood health. The campaign reached over 70 million viewers globally, with 2 million joining the live stream, further driving awareness of anaemia and iron deficiency.

In an expert Townhall Discussion, the argument that blood transfusions are a form of organ transplant was raised. However, blood is not managed or preserved like other organs, and it is frequently transfused by clinicians without consideration of alternative strategies (which should have been first-line). Such practice may stem from the lack of understanding that allogenic blood transfusions carry an independent, dose-dependent and additive risk for adverse outcomes, as well as the perception that blood supply is abundant. It is common for clinicians to simply administer blood when haemoglobin levels are low, without assessing whether this is manifested as symptoms. It is critical that clinicians treat the patient, not just an arbitrary haemoglobin concentration. Clinical judgement must be exercised and clinicians must not rely purely on indications and guidelines, which cater to the average patient rather than patient-centred care.

Beyond the clinical context, it is essential to recognise the societal and structural factors that impact blood health. Sherri Ozawa, a Global Patient Blood Management Influencer, highlighted the health inequities and sociomedical injustices faced by women. For instance, the anaemia threshold for women is set at a haemoglobin level of 12 g/dL, compared to 13 g/dL for men, despite women of reproductive age being more susceptible to anaemia due to menstrual bleeding. Dr. Carol Lim Kar Koong and Dr. Ajay Gandhi spoke about heavy menstrual bleeding, which affects 1 in 4 women of reproductive age. However, the condition remains underreported due to stigma and limited access to care, amongst other factors. Especially because iron is essential for foetal development, it is crucial that iron deficiency is routinely screened, identified and corrected in women before and during pregnancy.

In recognising the importance of PBM programs, the World Health Organization (WHO) raised the urgent need for its implementation in a policy brief published in 2021, along with a set of implementation guidance. Professor Shannon Farmer from the WHO External Steering Committee for PBM Implementation shared that an updated version of this guidance will be released in very near future. The guidance will serve as a blueprint for health organisations to pilot PBM programs and establish Centres of Excellence to ultimately drive PBM as the national standard of care. Achieving this will require PBM programs to be systematic, multi-disciplinary, and programmatic, leveraging implementation science and change management methodologies to overcome cultural barriers, behaviours, and entrenched beliefs.

Upfront cost is often a key concern in PBM program implementation. With government subsidies, the cost of acquiring a unit of blood is marginal for many hospitals. In contrast, a PBM program requires adequate initial funding for training, systems and administration set-up which unfortunately makes transfusions appear to be the more economically attractive option. However, this view is misleading, as many hospitals overlook the hidden costs of administering blood (e.g., pre-transfusion processes, blood testing, overhead costs) which can be three to five times the cost of the blood itself. Research by Dr. Kevin Trentino demonstrates how screening and treating pre-operative anaemia and suboptimal iron stores in elective colorectal cancer surgery reduces red cell unit transfusions in a cost-effective manner. Additionally, in Western Australia, a $4.5 million investment from the Department of Health for a five-year PBM program resulted in savings of $18.5 million in direct costs and up to $100 million in activity-based costs, demonstrating value for money.

The day concluded with a showcase of successful PBM practices in Malaysia. Local surgeons and anaesthesiologists presented case studies where bloodless surgeries were safely and successfully carried out by optimising preoperative haemoglobin, minimising blood loss during surgery, and enhancing patients' physiological tolerance to anaemia. Strategies used in PBM included employing a validated bleeding risk assessment tool for surgical patients, administering pharmacological agents to optimise erythropoiesis and reduce bleeding risks, and utilising minimally invasive techniques (e.g., laparoscopy). Their experiences served as both inspiration and motivation, demonstrating that effective PBM programs and bloodless surgeries can be successfully conducted within the local healthcare context.

14 FEBRUARY 2025:

SOUND EVIDENCE - THE COMPASS FOR PBM PRACTICE

At the core of PBM is complete blood health, defined as the optimal function of individual elements of the blood and their associated interactions with all other organs and organ systems. Recognising that blood is an organ, protecting and preserving blood should take precedence over replacing it. To improve blood health, Sherri Ozawa presented a comprehensive model, involving five levels of prevention, that PBM fits into.

1. **PRIMORDIAL PREVENTION:**
   Reducing the impact of social determinants of health *(e.g., removing the stigma surrounding heavy menstrual bleeding)*

2. **PRIMARY PREVENTION:**
   Preventing the onset of disease *(e.g., minimising blood loss, promoting iron-rich diets)*

3. **SECONDARY PREVENTION:**
   Early screening and diagnosis *(e.g., routinely screen for iron deficiency, anaemia, blood disorders)*

4. **TERTIARY PREVENTION:**
   Active and subsequent treatment of disease *(e.g., treat anaemia directly with iron, vitamin B12, folic acid, etc.)*

5. **QUATERNARY PREVENTION:**
   Prevention of overtreatment *(e.g., transfusion in a hemodynamically stable patient is unnecessary)*

PBM is applicable to all stages of life. Dr. Lucy Lum Chai See advocated that proactively preventing iron deficiency in children is critical, rather than reactively treating it. This is because in our early years, iron is essential for brain and socio-emotional development, and the impact of deficiency is irreversible.

Despite this, 40% of children worldwide aged 6-59 months are anaemic. Universal screening for iron deficiency in children should therefore be encouraged, especially for exclusively breast-fed babies due to the low levels of iron in breast milk. Parents should also ensure that children are placed on an iron-rich diet.

In the implementation of PBM programs, key performance indicators (KPI) should be defined to analyse, optimise, and transform healthcare processes to improve outcomes for both patients and healthcare providers. Dr. Cheuk Kwong Lee shared that KPIs promote accountability, demonstrate commitment, and allow benchmarking with other healthcare systems. In the context of PBM programs, indicators to measure success may include blood transfusion rate, transfusion trigger, single red blood cell unit transfer, and the anaemic rate at admission. Such indicators have been implemented by the Hong Kong Red Cross Blood Transfusion Service and are cyclically reviewed to ensure quality improvement in PBM programs.

Medical innovation can help us meet KPIs by providing advanced tools and technologies to manage blood peri-operatively. These include, but are not limited to:

- **FIBRINOGEN CONCENTRATES**

  Fibrinogen concentrates are a fast and effective way to replace depleted fibrinogen during haemorrhage. On the other hand, cryoprecipitate, the standard of care in Malaysia, requires a long administration time due to the need for thawing (45-60 minutes), which delays treatment and poses a risk to patients. While many European countries have phased out cryoprecipitate in favour of fibrinogen concentrates, cost remains a barrier to making this switch in Malaysia. Dr. Kevin Ng Wei Shan recommends the use of fibrinogen concentrates in times of emergency where time is of the essence.

- **LEUKOREDUCTION IN CELL SALVAGE**

  Cell salvage is a viable strategy to mitigate the risks of allogeneic blood transfusions. However, it remains controversial in cancer patients due to concerns that viable cancer cells may be reinfused, potentially increasing the risk of tumour recurrence. Dr. Kwon Ji-Hye introduced the use of a leukocyte reduction filter which not only removes leukocytes, known to pose a risk to patients through immunomodulation, but also cancer cells from salvaged blood. Studies among patients with liver, prostate, and spine cancers undergoing cell salvage showed no increased risk of recurrence when the filter was used, suggesting that it is a safe and effective alternative to allogeneic transfusions in cancer surgery.

- **ARTIFICIAL INTELLIGENCE (AI)**

  AI has shown the potential to predict blood utilisation, improve patient outcomes, and optimise resource allocation. Research has explored how AI can detect anaemia through non-invasive methods and identify bleeding during surgeries. However, Dr. Kevin Trentino cautions that these technologies are not without limitations. Issues such as data quality, the risk of overfitting, and transparency concerns raise questions about the reliability of AI models. While AI and machine learning show great promise, further development is needed to ensure safe and effective use.

These innovations represent significant progress in the ever-evolving space of blood health and PBM. As reiterated across speakers, adequate funding is necessary for the successful and sustainable implementation of PBM programs to drive improvements in patient care and outcomes. While initial investments are required for PBM program implementation, it is important to recognise that PBM represents a conceptual change in how resources are utilised, which will ultimately yield substantial returns on investment in the long term.

15 FEBRUARY 2025:

PBM - A CONTINUOUS JOURNEY OF REFINEMENT

The final day of the conference, which featured a joint program with the ASPBM Society, featured speakers from around the world who shared how PBM programs are being implemented in their respective countries. Successes and challenges were discussed to foster cross-country learning and collaboration in advancing PBM practices.

SOUTH KOREA

Dr. Choi Dongho shared how Big Data analysis is facilitated through South Korea's state insurance system, which centralises patient data and enables retrospective analysis of blood transfusions. Additionally, the Korean Quality Improvement Platform in Surgery (K-QIPS) has been established to support the collection of prospective data. This nationwide platform monitors the use of transfusions across various surgery types and centres to identify variations and benchmark utilisation with local and global centres.

INDIA

Dr. Prabhu Nesargikar highlighted the use of minimally invasive surgical techniques to support bloodless surgeries in cancer surgeries. Techniques such as laparoscopic and robotic surgery have been shown to yield superior patient-reported outcomes compared to traditional open surgeries. Additionally, optimising haematocrit, using topical haemostats, and energy devices can reduce the need for transfusions. Above all, effective communication and collaboration across the multidisciplinary surgical team are crucial to consistently achieving optimal patient outcomes.

PHILIPPINES

Dr. Angelina Apostol-Gapay shared her journey in PBM advocacy, which has faced challenges such as a lack of investment and limited awareness of PBM among clinicians. During the COVID-19 pandemic when blood banks were depleted, there was increased interest in bloodless surgeries. However, PBM program implementation in the Philippines remains a work in progress, and continued clinician education is crucial to driving advocacy across generations and ensuring long-term success.

AUSTRALIA

Dr. Dieter Weber, Head of the Royal Perth Hospital Trauma Service, highlighted the importance of collaboration in PBM program implementation. Every four years, the College of Surgeons leads a collaborative effort, including site visits between specialists to exchange recommendations. This process acts as a forensic review of the trauma system, within which there is a dedicated section on transfusion medicine. The Australian and New Zealand trauma registry plays a key role in this review, enabling data standardisation and facilitating comparisons.

IRAN

Ali Boroujerdi, a perfusionist at Shahid Dr. Lavasani Hospital, Iran, discussed a successful PBM pilot program at his hospital that employed techniques such as haemodilution, cell salvage, and anaemia screening to reduce reliance on allogenic blood transfusions. Following the success of this pilot, Ali's hospital has emerged as a leader in PBM in Iran and serves as a model for other hospitals in the responsible use of blood.

In managing blood loss, Dr. Aryeh Shander emphasised the importance of understanding blood production and regeneration. When faced with blood loss, we must recognise the body's capacity to regenerate blood rather than defaulting to transfusions. During haemorrhage, blood cell production in the bone marrow increases but quickly plateaus. However, introducing exogenous stimulants (e.g., erythropoiesis-stimulating agents, hypoxia-inducible factors α and β) can surpass this plateau, enabling faster red blood cell production for recovery. Most published data suggest that, with proper intervention, autologous regeneration can be as effective as allogeneic blood transfusion, offering a more sustainable and natural solution to blood loss. Beyond clinical aspects, clinicians must also consider the medical ethics underlying PBM. In a multicultural country like Malaysia, it is erroneous to assume that patients and clinicians share the same values.

Patients should be given the autonomy of treatment choice, with sufficient information provided about the risks, benefits, and available alternatives to transfusion. Ultimately, the patient's short- and long-term welfare should take precedence over physicians' self-interests or obligations.

To conclude the conference, poster abstracts were presented by local healthcare professionals in MyPBM's first-ever poster competition. The abstracts showcased studies conducted locally in a Malaysian context. This served to promote local research and encourage positive change in current practices within Malaysia. The top three posters featured research on the quality of life in adult transfused thalassaemia patients (Phaik Hoon Tee), predictive factors of clinical response to erythropoiesis-stimulating agents (Chong Chia Chee), and the yield and efficacy of pre-deposit autologous blood (Woan Chyi Lee). MyPBM extends its congratulations to all the winners and participants for their outstanding contributions to advancing the field of PBM in Malaysia.

CONCLUSION

MyPBM extends its heartfelt thanks to all speakers, participants, sponsors, and co-organisers for their invaluable contributions in making this conference a success. As we strive to deliver the highest quality of care to patients, PBM remains a critical and relevant focus in Malaysia and around the world. Through this conference, we hope to have fostered ongoing education, collaboration, and innovation in this important field. Together, we can create a healthier future, with PBM at the heart of patient care, achieving optimal blood health for all.

SPEAKERS

- **Professor Dr. Abdul Nawfar Sadagatullah**
  Consultant Orthopaedic Aurgeon, HUSM, Kota Bharu, Kelantan.
- **Dr. Ajay Gandhi**
  Adjunct Faculty - Hemostasis and Thrombosis, BLK-Max Hospital, New Delhi; Director - Clinical and Medical Affairs, India and South Asia, Werfen.
- **Ali Boroujerdi**
  Perfusionist, Shahid Dr. Lavasani Hospital, Iran.
- **Dr. Anusha Asairinachan**
  Obstetrics and Gynaecology Specialist, Penang Hospital, Penang.
- **Professor Dr. Aryeh Shander**
  Emeritus Chair, Department of Anaesthesiology, Critical Care Medicine, Pain Management and Hyperbaric Medicine at Englewood Hospital & Medical Center in Englewood, NJ.
- **Professor Asrul Akmal Shafie**
  Professor of Pharmacoeconomics at Universiti Sains Malaysia.
- **Dr. Carol Lim Kar Koong**
  Maternal Fetal Medicine Consultant Obstetrician and Gynaecologist Ampang Hospital; Past Selangor state Head of OBGYN Service.
- **Dato' Dr. Chang Kian Meng**
  Consultant Haematologist, Sunway Medical Centre, Selangor.
- **Dr. Cheuk Kwong Lee**
  Chief Executive & Medical Director of Hong Kong Red Cross Blood Transfusion Service, Hong Kong.

SPEAKERS *(Continued)*

- **Professor Dr. Choi Dong Ho**
  Hepatobiliary Surgeon and Director of Organ Transplant Centre Hanyang University Hospital, Seoul, Korea.

- **Derek Muhs**
  Founder and Executive Board Member World Anemia Awareness.

- **Professor Dr. Dieter Weber**
  Consultant Surgeon & Head of Department of General Surgery and Head of the Royal Perth Hospital Trauma Service, Perth, Australia; Clinical Professor University of Western Australia.

- **Professor Dr. Ina Ismiarti Shariffuddin**
  Professor & Senior Consultant Anaesthesiologist, University Malaya.

- **Dr. Intan Iliana Binti Iliassa**
  Transfusion Medicine Specialist in Hospital Sultan Idris Shah Serdang, Selangor.

- **Iylia Husni**
  Chief Operating Officer of Accelerate Global; Patient advocate, Startup Builder (Edhulm and biCHARA) and Social Activist.

- **Dr. Jay Suriar**
  Consultant Haematologist, Gleneagles Kuala Lumpur.

- **Dr. Jee Ngee Ling**
  Family Medicine Specialist and Head of Public Primary Healthcare Clinic Kg Bandar, Selangor.

- **Dr. Kevin Ng Wei Shan**
  Consultant Anaesthesiologist & Medical Lecturer, University Malaya.

- **Dr. Kevin Trentino**
  Senior Research Fellow, University of Western Australia, WHO Expert Working Group Member on Patient Blood Management.

- **Dr. Kim Eun-Sun**
  Medical Gastroenterologist, Korea University College of Medicine, Seoul, Korea.

- **Assoc. Prof Dr. Kwon Ji-Hye**
  Assistant Professor at the Sungkyunkwan University School of Medicine, Samsung Medical Center, Department of Anesthesiology & Pain Medicine in Seoul, Korea.

- **Dr. Lee Jong Hyeon**
  Chairman, Anesthesiology & Pain Medicine, Sejong General Hospital, Bucheon, Korea.

- **Professor Emeritus Datin Dr. Lucy Lum Chai See**
  Consultant Paediatrician & Paediatric Intensivist, University Malaya.

- **Lydia Delaney**
  Director of Business Development and Executive Board Member World Anemia Awareness.

SPEAKERS *(Continued)*

- **Dr. Malwinder Singh Sandhu**
  Clinical Oncologist, Pantai Hospital, Cheras, Kuala Lumpur.

- **Dr. Mohammad Masrin Bin Md Zahrin**
  Director at National Blood Center Kuala Lumpur.

- **Dr. Mohd Fitry Zainal Abidin**
  Consultant Anaesthesiologist, University Malaya.

- **Assoc. Prof. Dato' Dr. Mohd Hisam Muhamad Ariffin**
  Consultant Orthopaedic Spine Surgeon, HUKM, Cheras, Kuala Lumpur.

- **Dr. Prabhu Nesargikar**
  Senior Consultant in GI and Peritoneal Cancer, Bariatric & Robotic Surgery at HCG Hospital, Bangalore, India.

- **Dr. Rosnawati Yahya**
  Consultant Nephrologist and Kidney Transplant Physician, Sunway Medical Centre, Subang Jaya, Selangor.

- **Dr. Shah Jahan Bin Mohd Yussof**
  Consultant Emergency & Trauma Physician, Sungai Buloh Hospital, National Trauma Center, Malaysia.

- **Professor Shannon Farmer**
  WHO External Steering Committee for PBM Implementation; Discipline of Surgery Medical School, The University of Western Australia; Department of Haematology, Royal Perth Hospital, Perth Western Australia.

- **Professor Dr. Sharaf Ibrahim**
  Visiting Paediatric Orthopaedic Surgeon, UKM Specialist Children's Hospital, Kuala Lumpur.

- **Sherri Ozawa**
  WHO Expert working Group Member on Patient Blood Management; Clinical Advisor, Patient Blood Management, Global Patient Blood Management Influencer, Englewood Health, Englewood, NJ USA.

- **Dato' Dr. Suneta Sulaiman**
  Intensivist/Anaesthesiologist, Deputy Head of Department Anaesthesia & Intensive Care Department, Institut Jantung Negara, Kuala Lumpur.

- **Professor Dr. Wan Faisham Nu'man Bin Wan Ismail**
  Consultant Orthopaedic Oncology Surgeon, Prince Court Medical Centre, Kuala Lumpur.

- **Dr. Xavier Sim Yoon Han**
  Consultant Haematologist, Subang Jaya Medical Centre, Selangor.

- **Assoc. Prof Dr. Yoo Byunghoon**
  Associate Professor of Anaesthesiology at Inje University Sanggye Paik Hospital, Seoul, Korea

- **Dr. Zulaiha Muda**
  National Head of Services for Paediatric Haematology - Oncology Services Malaysia; Consultant & Head of Paediatric Haematology Oncology unit, Hospital Tunku Azizah, Kuala Lumpur.

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Vista Health is a knowledge partner and sponsor of the conference and led the development of this report.

Vista Health is an independent, value-based healthcare advisory firm specialising in strategic consulting and tech-enabled solutions to our clients across all corners of healthcare. As experts in PBM program implementation, we are fully equipped to assist centres facing challenges with PBM adoption or those looking to gain a deeper understanding of PBM. We also offer learning management systems, auditing and tracking tools, along with various support services to help ensure the success of your PBM program.

To explore how you can be involved in future collaboration opportunities or ways Vista Health can partner with you, visit vista.health or reach out at info@vista.health.