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KOMPETENZZENTRUM FÜR ARDS, BEATMUNG,  
SEPSISTHERAPIE UND WEANING



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## PBM Opinion letter for Japan

I hold the position of Ordinarius and Director of the Department of the Department of Anaesthesiology, Intensive Care Medicine and Pain Therapy at the University Hospital Frankfurt, Goethe University, Germany.

For the years 2020-2021, I was also the President of the European Society of Anaesthesiology & Intensive Care (ESAIC). Currently and for the next five years I represent the ESAIC as the new Ambassador responsible for EU affairs in Anaesthesiology and Intensive Care Medicine at the European Commission in Brussels, Belgium.

My research, teaching, and consulting interests are clinical and basic aspects of patient safety, Patient Blood Management (PBM) (including anaemia), big data in anaesthesiology and intensive care medicine, innate immunity, cardiovascular and critical care medicine.

I have published more than 560 scientific papers in peer-reviewed journals such as Nature Medicine, The Lancet, The New England Journal of Medicine, and Proceedings of the National Academy of Sciences. I am Editor-in-Chief for the Journal of Anaesthesia & Intensive Care Medicine and Current Opinions in Anaesthesiology as well as an Editorial Board member of numerous journals in Critical Care Medicine, Emergency Medicine and Anaesthesiology. I am also the CEO of the Lohfert Foundation and the Founder & CEO of the Foundation of Health, Patient Safety & Patient Blood Management.

By means of this letter, I would like to briefly outline how the expert medical community manages patients when they do not accept blood transfusions.

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### Patient Blood Management

Patient Blood Management (PBM) is a compelling practice to pre-empt anaemia, correct bleeding disorders, and minimize blood loss. This evidence based, multidisciplinary approach leads not only to reductions in the use of blood and blood products, and therefore to considerable cost savings, but - more importantly - it also improves patient outcomes and patient safety.

The European Commission<sup>1</sup> and the World Health Organization have both endorsed PBM. In its 19 October 2021 policy brief "The urgent need to implement patient blood management" the World Health Organization stated:<sup>2</sup>

"The literature suggests that transfusion per se, after risk adjustment, is independently associated in a dose-dependent manner with adverse outcomes including increased morbidity, mortality and average hospital and ICU length of stay. This includes patients with trauma and critical bleeding, for example, those who are critically ill or in the ICU, patients who have cardiac surgery, and many other surgical and medical patients, including paediatric and burns patients. Randomized controlled trials have demonstrated lack of benefit, and sometimes harm of liberal transfusion. Immunomodulation and storage lesion are considered to play key causative roles in adverse transfusion outcomes".

The above-mentioned WHO policy brief explains (p. 4): "PBM's central tenet is the use of every appropriate measure to protect and manage a patient's own blood, in a manner that is tailored to the needs of the individual patient. The underlying principles are known as the 'three pillars of PBM'".

I am the last and corresponding author of a recent study involving 1.2 million patients treated in German hospitals and which examined the effectiveness and safety of PBM over a 10-year period. That study, published online in June 2023 in the *British Journal of Anaesthesia*, demonstrated that application of the three pillars of PBM resulted, on average, in a 13.9% system-wide reduction in use of red blood cell

<sup>1</sup> European Commission, Supporting Patient Blood Management (PBM) in the EU: A practical implementation guide for hospitals (March 2017), (europa.eu) (pages 9, 10, 12);

European Commission, Building national programmes on Patient Blood Management (PBM) in the EU: A guide for health authorities" (March 2017) (europa.eu) (page 14)

<sup>2</sup> World Health Organization, The urgent need to implement patient blood management: policy brief (19 October 2021), (who.int) (pages 1 and 3)



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transfusions. It concluded that PBM is entirely safe (no increase in postoperative complications or mortality) and is superior with respect to red blood cell transfusion (reduced RBC use and reduced length of hospital stays).<sup>3</sup>

There is a compelling need to implement PBM. Any review of the literature on allogeneic (donor) blood transfusion and patient outcomes is sobering. In non-bleeding patients, evidence for the benefit from blood transfusion is scant - even in critically ill patients. Of concern is the large and growing body of literature showing that blood transfusion is independently associated with adverse patient outcomes in a dose-dependent manner. Most studies evaluating the clinical efficacy of transfusion have failed to demonstrate a benefit.

That dose-dependent increase in adverse outcomes associated with allogeneic blood transfusion is observed in all areas of clinical practice.

#### Experience with providing PBM

Over the course of my medical career, I have had the opportunity to provide treatment to hundreds of patients who are Jehovah's Witnesses. In elective and semi-elective situations this patient group can be perfectly prepared for interventions/surgery. Preparations include a rigid anaemia treatment with intravenous iron, erythropoietin, Vitamin B12 and folic acid. We are always aiming to achieve a Hb-concentration of > 13g/dl in women and men. Outcome data of Jehovah's Witnesses are equal in many situations where major surgical bleeding is occurring. However, this patient group needs special attention, e.g. use of cell salvage and other blood sparing techniques. Length of stay, infection rate, kidney injury and mortality rates are comparable with other groups not refusing blood transfusions. In several cases outcome of Jehovah's Witnesses patients is even better. Treatment of Jehovah's Witnesses patients has helped the expert community to further develop PBM.

Jehovah's Witnesses patients are well informed regarding blood conservation techniques. In general, these patients have a clear mind regarding the intervention/surgery and what they accept as treatment options. As mentioned before, the majority knows the problems of anaemia and its potential reversal by preoperative treatment, the use of cell salvage and closed loop systems. Our experience underlines that Jehovah's Witness patients and their families are very cooperative und understanding. It is

<sup>3</sup> [German Patient Blood Management Network: effectiveness and safety analysis in 1.2 million patients](#), *British Journal of Anaesthesia*, 131 (3): 472-481 (2023)



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needless to say that we recommend that physicians accept this group of patients and their beliefs. Especially in view of the recent advancements in medicine, we cannot accept that physicians refuse to provide treatment to Witness patients because of a lack of skill or perhaps a mindset of not wanting to implement PBM. Using all options in PBM, patient safety and outcome is better. Therefore, we use the PBM strategy for all our patients.



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