

EDITORIAL COMMENT

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From local success to national standard: the case for Patient Blood Management guidelines in Portuguese cardiac surgery

Few interventions in perioperative medicine combine clinical benefit, patient safety and economic value as convincingly as Patient Blood Management (PBM). Defined as a patient-centred, systematic, evidence-based approach to preserving a patient's own blood while improving outcomes, PBM has matured from a transfusion-avoidance strategy into a recognised standard of care.¹ Nowhere is the case stronger than in cardiac surgery, where preoperative anaemia, cardiopulmonary bypass, full heparinisation and acquired coagulopathy converge to make these among the largest consumers of allogeneic blood in the hospital. Yet in Portugal, despite a supportive legislative framework and almost a decade of demonstrated local feasibility, implementation remains fragmented and dependent on the energy of motivated local teams. The moment has come to translate that energy into something durable: practical, nationally owned PBM guidelines for adult cardiac, and by natural extension vascular and thoracic, surgery.

The epidemiological foundation is robust. The EMPIRE study reported an anaemia prevalence of around 20% in the Portuguese population, mostly undiagnosed and predominantly iron-related.² National modelling by the Anaemia Working Group Portugal projected that comprehensive PBM could benefit 384 000 patients, halve red-cell transfusions within the first year, prevent close to 600 hospital deaths annually and save approximately 70 million euros.³ This burden is largely modifiable: preoperative anaemia affects up to 40% of elective cardiac patients and

independently predicts transfusion, acute kidney injury, prolonged stay and mortality.

Crucially, the groundwork already exists. Legislation has mandated PBM in elective surgery since 2018. Real-world national data confirm that PBM works in our system: intravenous ferric carboxymaltose corrects iron-deficiency anaemia and reduces transfusion across NHS hospitals.⁴ At Gaia-Espinho, a structured cardiac-surgery programme reduced perioperative red-cell transfusion from 38.2% to 22.7%, a 63% reduction in the odds of transfusion (OR 0.37, 95% CI 0.22 to 0.63; $p < 0.001$), with shorter length of stay.⁵ This experience has since been formalised into a longitudinal quasi-experimental evaluation of roughly 1 600 patients,⁶ complemented by a digital platform that makes systematic capture of clinician- and patient-reported outcomes feasible at scale. The Portuguese pieces exist; what is missing is the connective tissue that turns scattered success into reproducible practice.

The barriers are well characterised and mirror those seen internationally: limited awareness among clinicians and policymakers; absence of unified national governance; variable data collection that frustrates benchmarking; competing priorities; and cultural resistance to changing blood management habits. A national Delphi panel made the awareness gap concrete: across many specialties, consensus was reached on only two of 33 statements.⁷ These impediments are not unique to Portugal; they mirror the systemic "waste domains" (failure of care delivery, failure

of care coordination and entrenched transfusion culture) that continue to hold up PBM implementation worldwide.⁸ Agreement in principle without agreement in practice is exactly the gap that national guidelines aim to close.

Portugal would not be writing on a blank page. The 2024 EACTS/EACTAIC guidelines on PBM in adult cardiac surgery provide a comprehensive, graded evidence base spanning the surgical timeline, from preoperative anaemia and antithrombotic management, through bypass optimisation, viscoelastic-guided haemostatic therapy and restrictive transfusion triggers, to a dedicated section on organising an institutional PBM programme.⁹ In parallel, the WHO 2025 Guidance on Implementing PBM supplies the implementation architecture: its "8-model" sets out a logical sequence: preparing the health system, conducting pilots and scaling nationally, anchored in governance, education, secure access to essential medicines and devices, and systematic monitoring.¹⁰ Read together, the EACTS/EACTAIC document tells us what to do clinically; the WHO guidance tells us how to make it happen at scale. A Portuguese guideline can sit at their intersection: clinically authoritative, methodologically defensible and operationally realistic.

What should such guidelines look like? "Practical" is the operative word: not a duplicate evidence synthesis, but a usable adaptation for Portuguese centres. Four principles follow. First, adopt and adapt rather than reinvent: a formal ADOLOPMENT from the EACTS/EACTAIC base lets a national working group concentrate effort where our practice genuinely diverges while preserving graded evidence. Second, build governance in from the outset; durable PBM requires hospital-level committees with real authority, a national coordinating structure and dedicated resourcing, not goodwill alone. Third, make measurement non-negotiable: a concise set of clinical (transfusion rate, anaemia prevalence, complications, length of stay) and economic (cost per case, transfusion expenditure) indicators embedded in dashboards and a national registry, enabling the benchmarking currently impossible. Fourth, treat education and culture change as core deliverables: the Delphi findings show that awareness, not evidence, is the binding constraint.

Cardiac surgery is the natural starting point: the evidence is densest, the transfusion burden highest, and a mature international guideline already exists, but it should be the spearhead, not the boundary. The same governance, registry and educational infrastructure extend readily to vascular and thoracic surgery, allowing a coherent three-specialty programme to grow from a single validated core, mirroring both the WHO pilot-then-scale logic and the trajectory already travelled locally.¹¹

Portugal has the legislative mandate, the clinical expertise, the real-world outcome data and now the international scaffolding to act. What remains is the decision to convert a decade of local success into shared national practice. Practical PBM guidelines for cardiac surgery would give clinicians a common standard, institutions a governance and monitoring framework, patients safer and more consistent care, and the health system a demonstrable

return on investment.⁸ The evidence will not become more compelling by waiting, and every year of delay is measured in avoidable transfusions, complications and cost. The opportunity is before us; the responsibility, an ethical one, is to take it.

Conflict of interest

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