46° Convegno Nazionale
di Studi di Medicina Trasfusionale
Rimini, 13-15 maggio 2026

Valutazione dell'efficacia ed efficienza dei programmi di PBM

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SIMT AM BO - Area Metropolitana di Bologna

Disclosure

La sottoscritta, ***Maria Beatrice Rondinelli*** , in qualità di Relatrice
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✓Componente del Consiglio Direttivo Società Italiana di Emaferesi e Manipolazione cellulare (SIDEM)

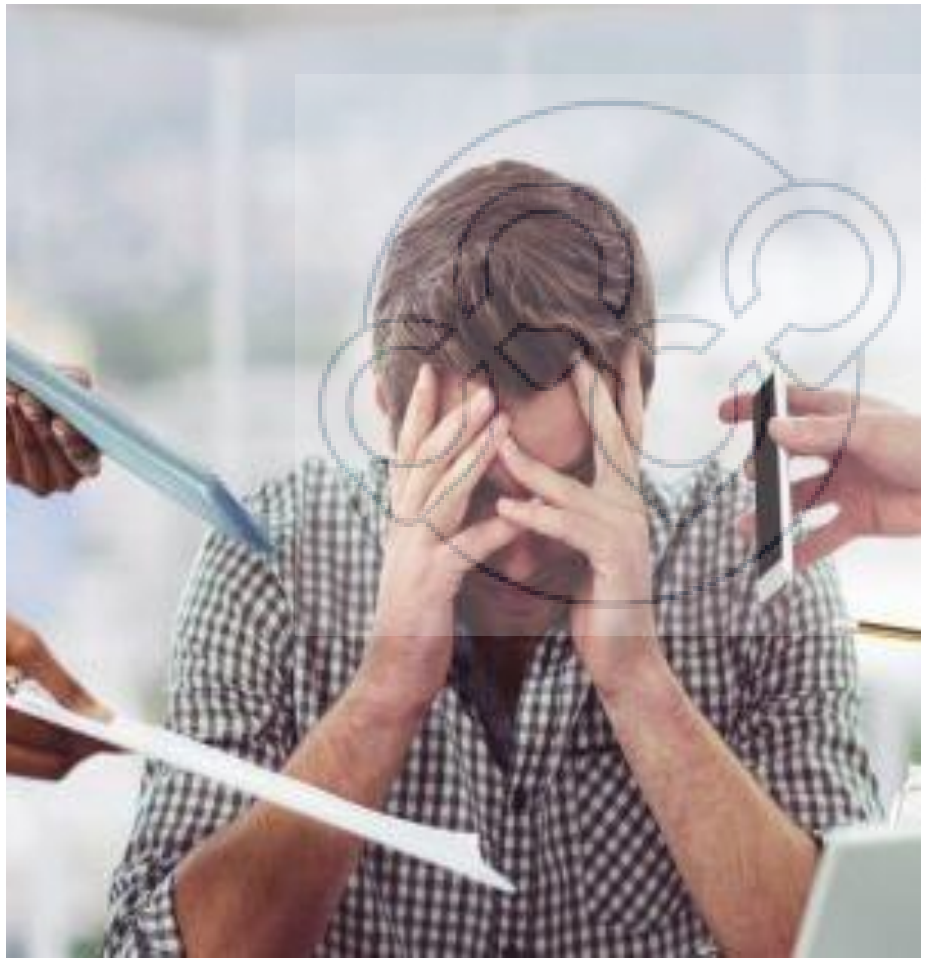
✓Componente del Comitato scientifico Network for the Advancement of Patient Blood Management , Haemostasis and Thrombosis (NATA)

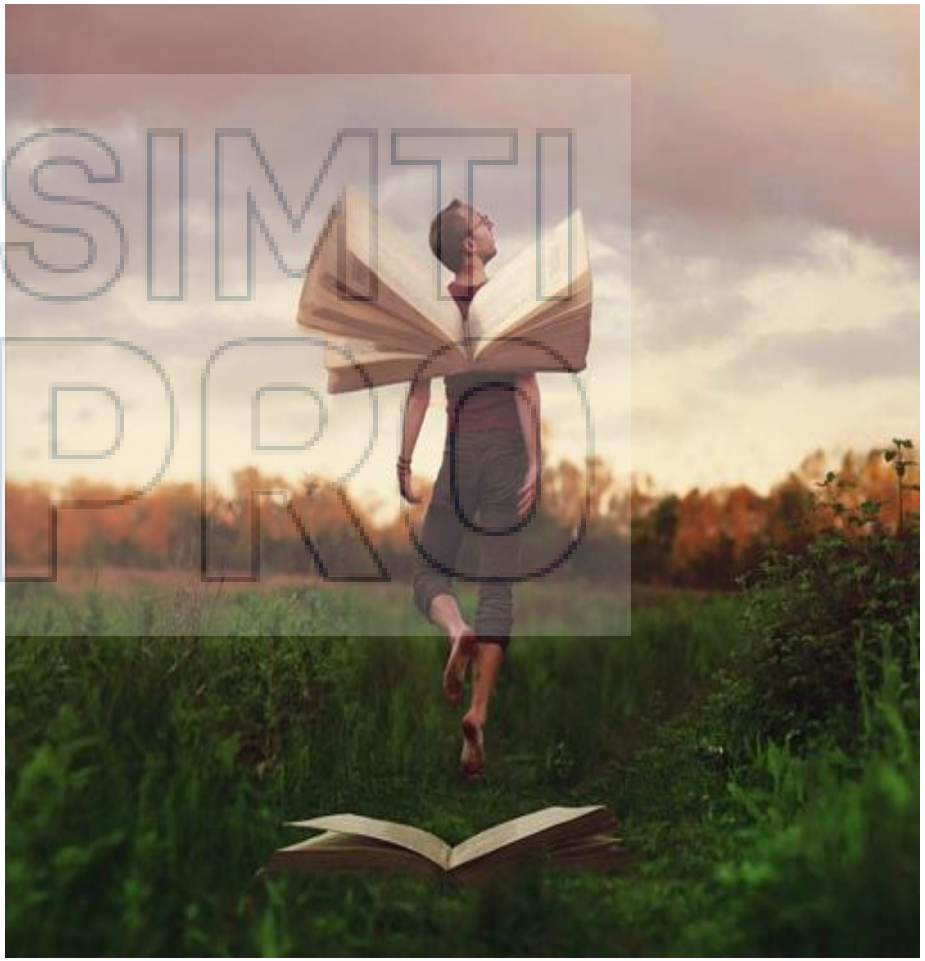
-

Agenda

- Raccomandazioni Internazionali e Nazionali
- Tools del PBM
- Elementi stutturali ed operativi
- Percorsi applicativi : esempi
- Indicatori di efficacia e di efficienza
- Take home messages

Patient Blood Management ?





World Health Organization

Maggio 2010 – 63° sessione della World Health Assembly: Adozione della risoluzione WHA63.12

World Health Assembly

In May 2010 the Sixty-third session of the World Health Assembly, the supreme decision-making body of the World Health Organization (WHO), adopted resolution WHA63.12, which contained a number of recommendations on availability and safety of blood products.[88] The resolution included the following on PBM:

> "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 anaemia following WHO's guide for optimal clinical use (three pillars of patient blood management)."

This resolution has important implications for all 193 Member States. WHO is required to report back to the WHA in 4 years on actions taken to implement resolution WHA63.12, providing a further international driver for implementation of PBM and improved patient outcomes.

World Health Organization

POLICY BRIEF

THE URGENT NEED TO IMPLEMENT PATIENT BLOOD MANAGEMENT

1. Introduction

In the past four decades, increased awareness of the inherent risks of transfusion has resulted in major initiatives to mitigate those risks through improvements in blood component safety. The realization that the intense focus on product safety had not been matched with a similar focus on improving transfusion decisions at the bedside led to the concept of "optimal blood use".

2. Purpose of this policy brief

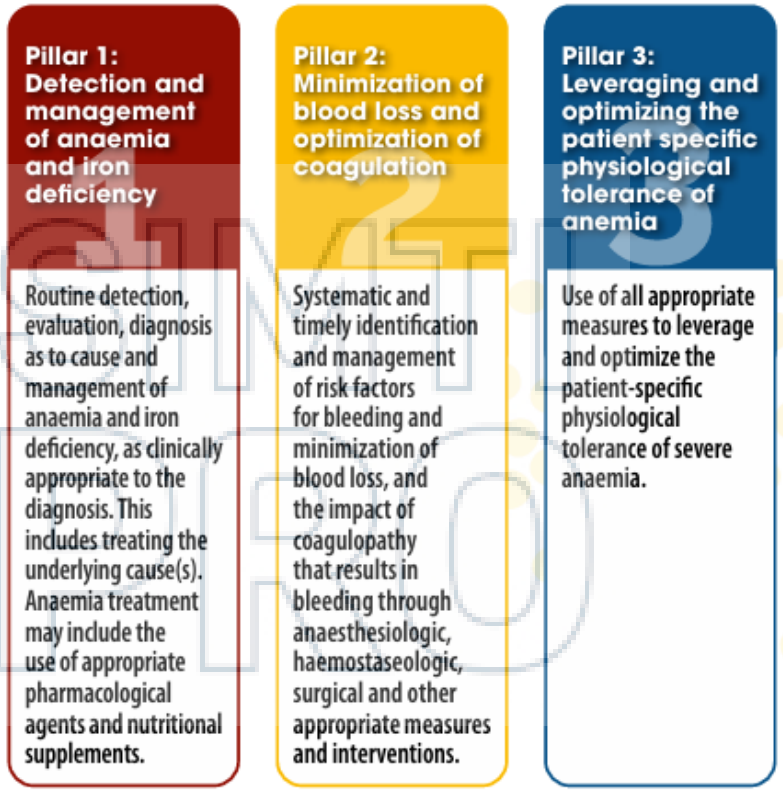
This policy brief aims to:

- **create awareness** about the enormous, but greatly under-appreciated global disease burden of **iron deficiency, anaemia, blood loss and bleeding disorders**;
- **create a sense of urgency** for health care entities to implement **PBM**, a systematic, multidisciplinary,

4. What is PBM, how did it develop and what are the underlying principles?

PBM was originally developed to improve outcomes in surgical patients *(138)*. An example of an early, jurisdiction-wide, large-scale PBM programme that included all patients, medical and surgical, is that of Western Australia. PBM was implemented in Western Australia from 2008 to 2012 as a government sponsored, state-wide standard of care across all tertiary hospitals, including all emergency and elective medical and surgical patients. This programme was associated with significantly improved outcomes, cost-savings of many millions of dollars and a significant reduction of blood product usage (Fig. 2) *(139)*. From its origins as a strategy for surgical patients, PBM has evolved into a comprehensive care paradigm to manage anaemia and preserve a patient's own blood. It is being applied in the care of medical and surgical patients, pregnant women, neonates, children, adolescents, elderly people and the population as a whole. **The overarching aim of PBM is to improve patient outcomes, while saving health care resources and reducing costs.** In 2010, PBM was endorsed by World Health Assembly Resolution WHA63.12 *(140)*.

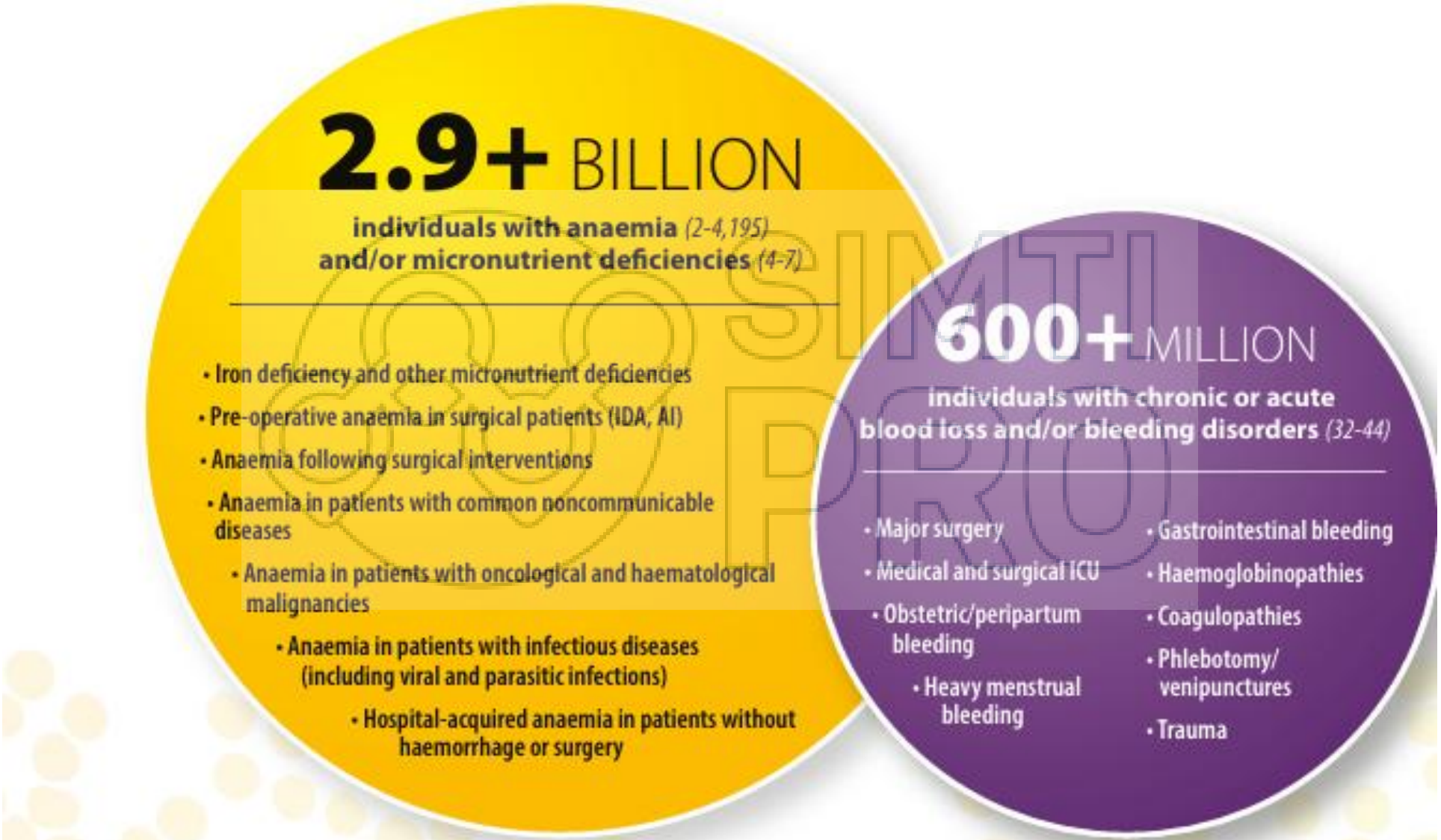
Three pillars of patient blood management



Several additional principles apply to PBM *(141)*:

- patient education and empowerment, informed consent and shared decision-making;

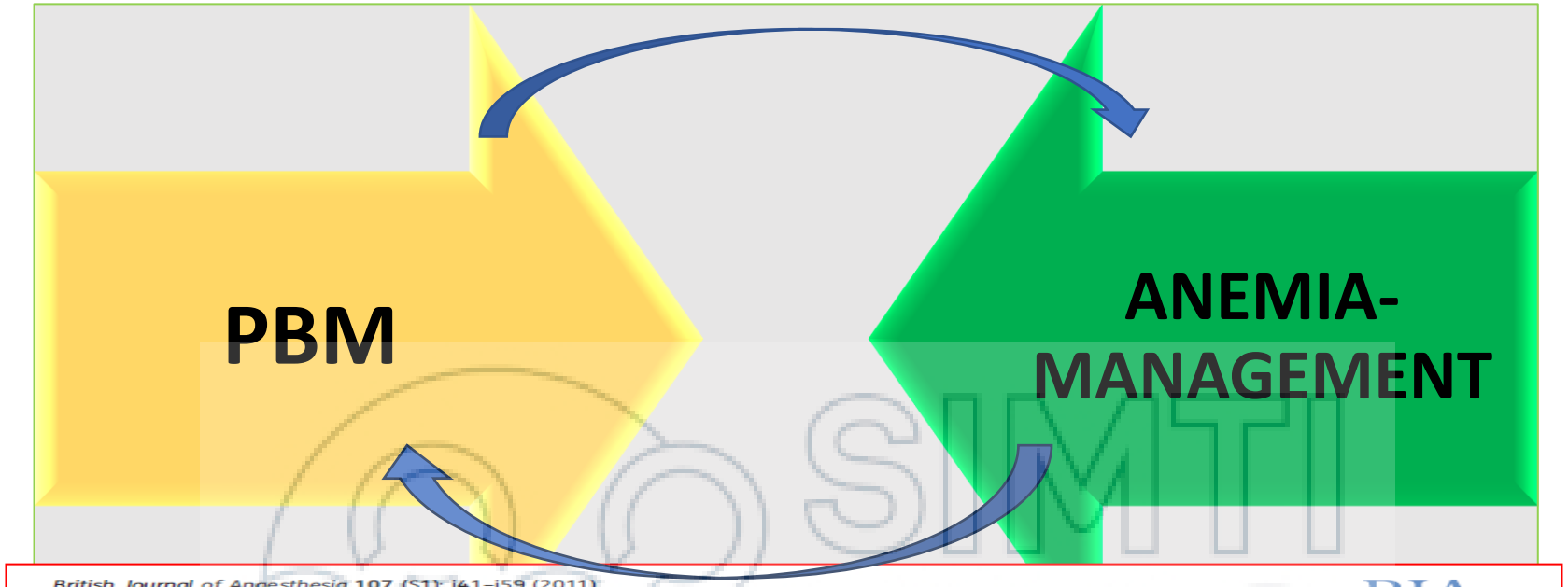
Global prevalence of anaemia, blood loss and bleeding disorders and their etiologies



INDIVIDUAZIONE STATI ANEMICI PREOPERATORI

ANEMIA PERIOPERATORIA

ANEMIA: A MULTIPLIER OF ADVERSE RISK



British Journal of Anaesthesia **107** (S1): i41–i59 (2011)
doi:10.1093/bja/der350

BJA

What is really dangerous: anaemia or transfusion?

A. Shander[1,2,3,4*], M. Javidroozi[1], S. Ozawa[5] and G. M. T. Hare[6,7]

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Editor's key points

- Paradoxically, both anaemia and transfusion are independently associated with organ injury and increased morbidity.
- Further characterization of the mechanisms of injury is needed to appropriately balance these risks.
- Treatment strategies to optimize haematopoiesis, manipulate physiological responses, and minimize blood loss are necessary to improve outcomes in anaemic patients.

Summary. While complex physiological mechanisms exist to regulate and optimize tissue oxygenation under various conditions, clinical and experimental evidence indicates that anaemia, unchecked, is associated with organ injury and unfavourable outcomes. More data (especially from human studies) are needed to answer questions regarding the optimal approaches to the treatment of acute and chronic anaemia. Meantime, allogeneic blood transfusions remain the most common treatment, particularly in surgical/trauma patients and those with moderate-to-severe anaemia. Clinical studies emphasize the paradox that both anaemia and transfusion are associated with organ injury and increased morbidity and mortality across a wide span of disease states and surgical interventions. Further characterization of the mechanisms of injury is needed to appropriately balance these risks and to develop novel treatment strategies that will improve patient outcomes. Here, we present the current understanding of the physiological mechanisms of tissue oxygen delivery, utilization, adaptation, and survival in the face of anaemia and current evidence on the independent (and often, synergistic) deleterious impact of anaemia and transfusion on patient outcomes. The risks of anaemia and transfusion in the light of substantial variations in transfusion practices, increasing costs, shrinking pool of donated resources, and ambiguity about actual clinical benefits of banked allogeneic blood demand better management strategies targeted at improving patient outcomes.

Keywords: anaemia; blood transfusion; haematocrit; morbidity; mortality; risk factors

PERCHE’ OTTIMIZZARE L’ERITROPOIESI SENZA TRASFUSIONE DI SANGUE

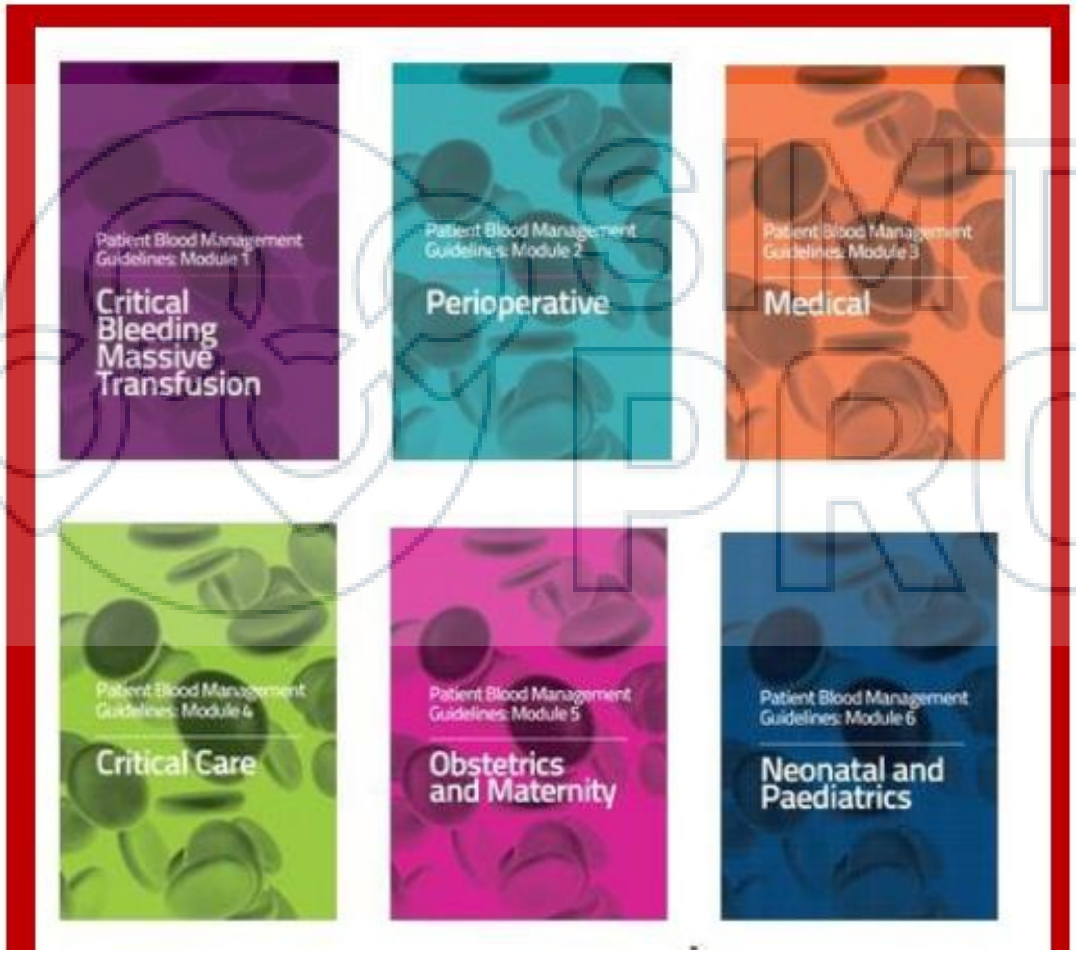
Aumenta l’ossiforesi tessutale globale

Effetto terapeutico Bridge nel postoperatorio

Aumento stimolo eritropoietico e non inibizione indotta da trasfusione di sangue

PBM nel mondo

Australia




GAZZETTA UFFICIALE
DELLA REPUBBLICA ITALIANA
PARTE PRIMA
Roma - Lunedì, 28 dicembre 2015
DECRETO 2 novembre 2015.
Disposizioni relative ai requisiti di qualità e sicurezza del sangue e degli emocomponenti.
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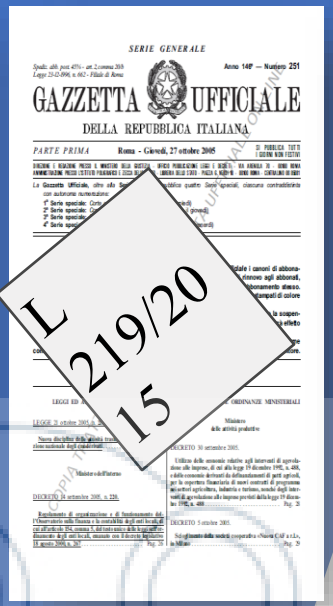
SERIE GENERALE
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L 219/2005


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SIMTI
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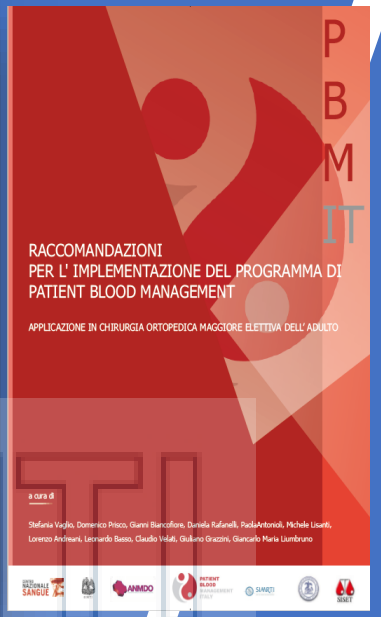
3ª Edizione
Ottobre 2017
Gruppo di Redazione
G. Grazzini, P. Berti, P. Boccagni, R. Bonini, F. Fiorin, G. Gandini, L. Menichini


PBMIT
RACCOMANDAZIONI
PER L' IMPLEMENTAZIONE DEL PROGRAMMA DI PATIENT BLOOD MANAGEMENT
APPLICAZIONE IN CHIRURGIA ORTOPEDICA MAGGIORE ELETTIVA DELL' ADULTO
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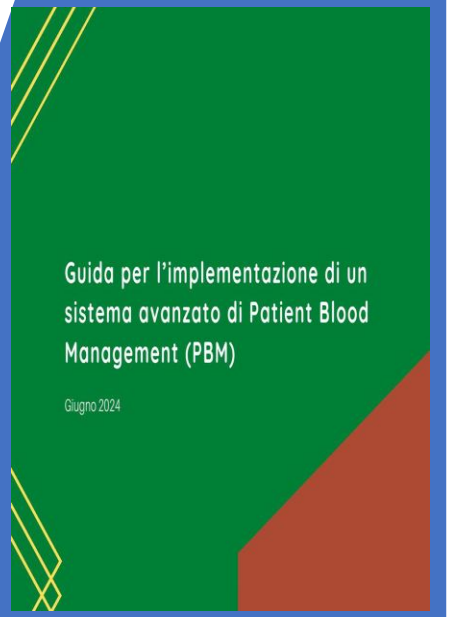
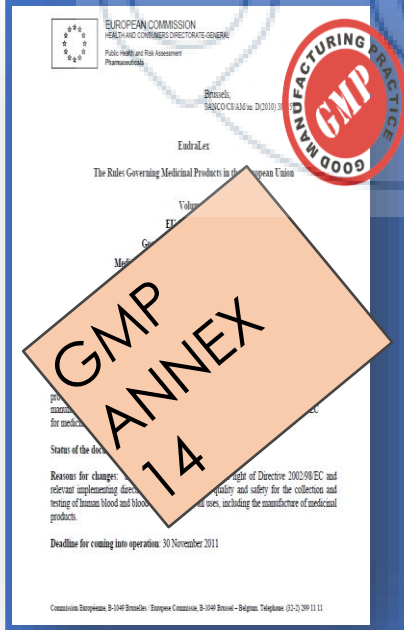

Guida per l'implementazione di un sistema avanzato di Patient Blood Management (PBM)
Giugno 2024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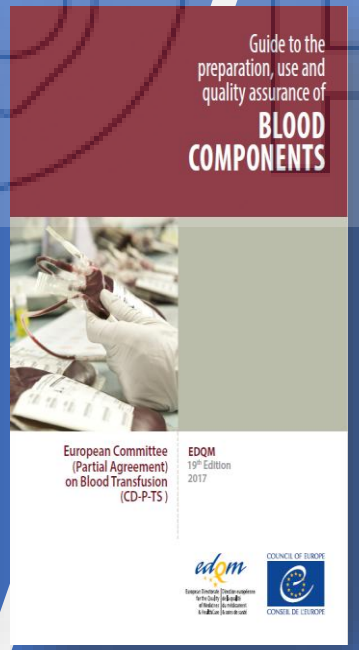
HEALTH AND CONSUMERS DIRECTORATE-GENERAL
Public Health and Risk Assessment
Pharmaceuticals
EudraLex
The Rules Governing Medicinal Products in the European Union
GOOD MANUFACTURING PRACTICE
GMP
GMP ANNEX 14
Deadline for coming into operation: 30 November 2011


Guide to the preparation, use and quality assurance of
BLOOD COMPONENTS
European Committee (Partial Agreement) on Blood Transfusion (CD-P-TS)
EDQM
19th Edition
2017
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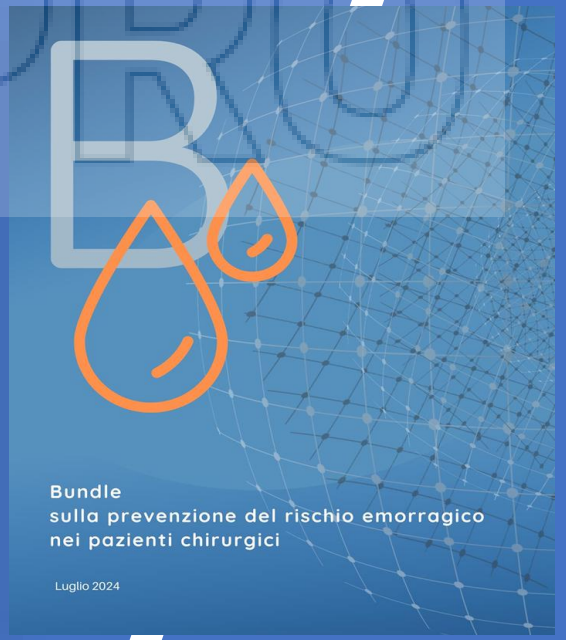
COUNCIL OF EUROPE
CONSEIL DE L'EUROPE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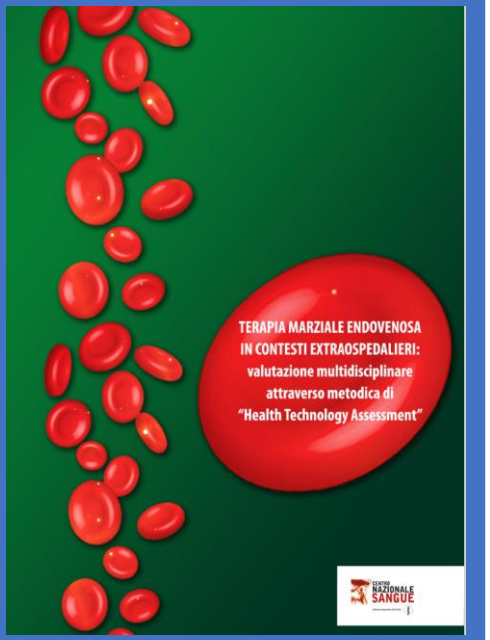
Luglio 2024


TERAPIA MARZIALE ENDOVENOSA IN CONTESTI EXTRAOSPEDALIERI:
valutazione multidisciplinare attraverso metodica di "Health Technology Assessment"
CENTRO NAZIONALE SANGUE

2025

World Health Organization

Guidance on implementing **patient blood management** to improve global **blood health** status

Ponlapat Rojnuckarin, Chulalongkorn University, Bangkok, Thailand

Beatrice Rondinelli, Azienda Unita Sanitaria Locale della Bologna (AUSL Bologna), Bologna, Italy

Diego Zuluaga Santamaria, Health Services University of Antioquia, Medellín, Colombia

Jameela Sathar, Ampang Hospital, Selangor, Malaysia

Alberto Martín Díaz Seminario, National Maternal Perinatal Institute of Peru INMP, Lima, Peru

Linda Shore-Lesserson, Zucker School of Medicine at Hofstra Northwell, Manhasset, New York, U America (15 April to 31 May 2024)

Ben Slater, St Vincent's Hospital, Melbourne, Australia

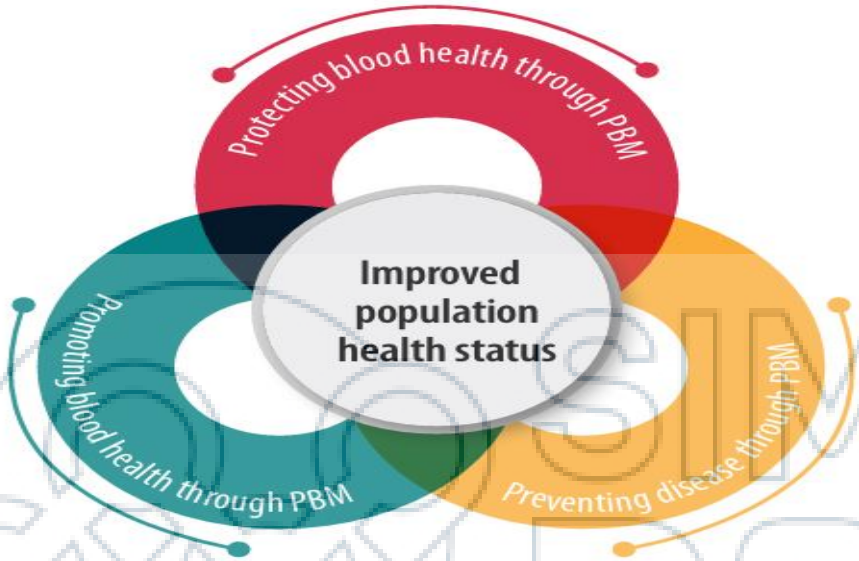
Cynthia So-Osman, Sanquin Blood Supply and Erasmus Medical Center-Rotterdam, The Netherla

Donat Spahn, Institute of Anesthesiology (Emeritus), University Hospital Zurich, Zurich, Switzerla

Daniel Surbek, Inselspital, University Hospital Bern, Bern, Switzerland

Pierre Tibi, Dignity Health, Yavapai Regional Medical Center, Prescott, AZ, United States of Ameri May 2024)

Fig. 1. Improved population health status through PBM



Achievement of blood health through PBM deserves priority

Fig. 1. Improved population health status through PBM

Box 1

Definitions of patient blood management (PBM) and blood health and how they relate

Patient blood management is a *patient-centred, systematic, evidence-based approach to improve patient outcomes by managing and preserving a patient's own blood, while promoting patient safety and empowerment (2).*

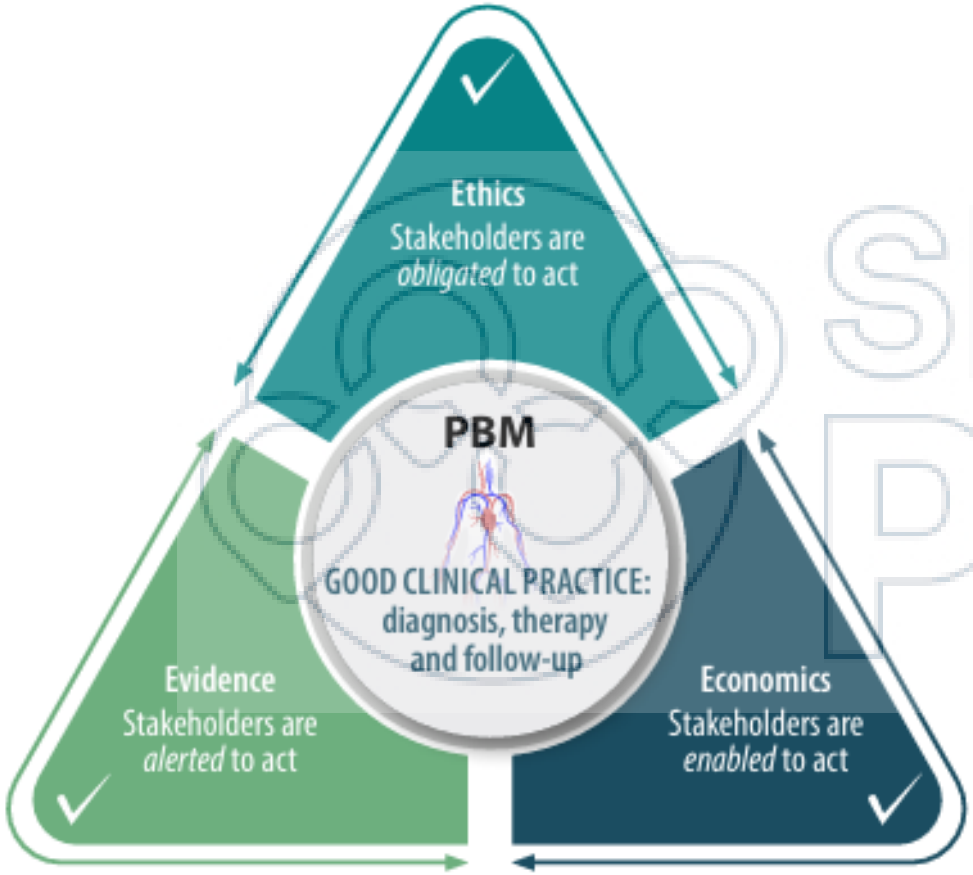
Blood health[1] *is the optimal function of individual elements of blood, and their associated interactions with all other organs and organ systems (3).*

Blood is an organ. Although it is often treated or viewed as a connective tissue, a commodity, a medicine or a replacement fluid, circulating human blood fits every criterion that defines an organ of the human body. In fact, no other organ system can survive without properly functioning blood and, uniquely, markers in the blood provide information on the health of every other part of the body. Given this distinctive, or even principal role that blood plays in overall human well-being, striving for blood health through PBM is an ethical and societal imperative in every corner of the globe *(3)*.

PBM is a medical model that manages the patient's own circulating blood with the same consideration as should be given to any other organ or organ system. This includes prevention, diagnosis, treatment and follow-up while aiming for maximal blood health as the therapeutic goal. Health care professionals must understand PBM and integrate it as the standard of care. The public and patients need to understand the concept of blood health, and health authorities must declare blood health a public health priority. Addressing blood health holistically, including its relationship to the heart and the vasculature, will even translate into a significant beneficial impact on cardiovascular health.

[1] With this guidance document WHO introduces the term *blood health* into its vocabulary.

Fig. 2. The "3Es" to drive implementation of patient blood management on the health care organization level



Self-evident ethical obligations:

- Respect patient autonomy
- Manage patients' own blood with with the same respect as any other
- Improve equity and access to care
- Respect donors by ensuring their blood donation will be requested an used only when clinically essential to meet the needs of patients

Sufficient peer-reviewed evidence:

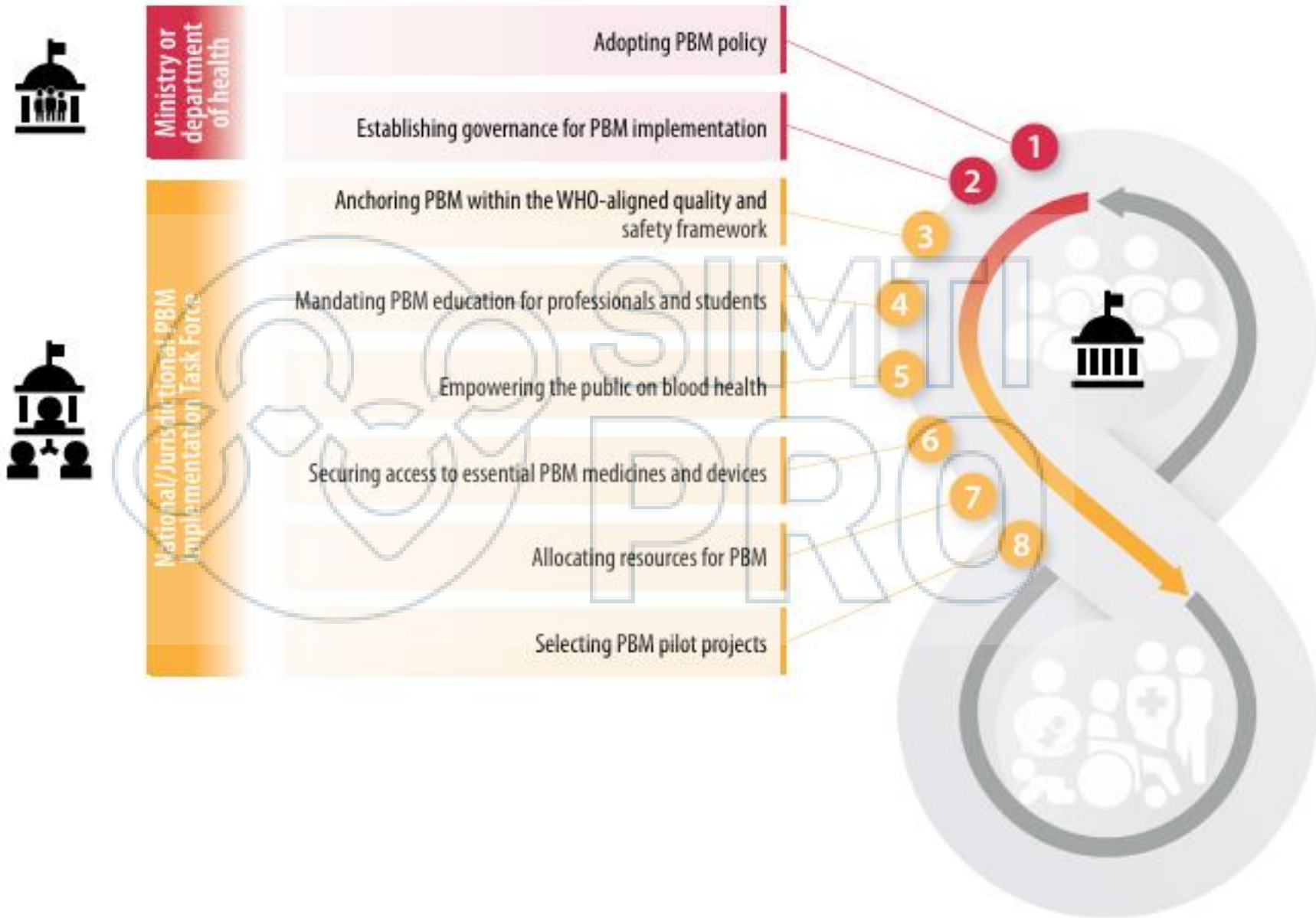
- Clinicians should adopt PBM
- Health authorities should mandate PBM

Savings potential of a macroeconomic magnitude:

- Reducing global burden of disease by millions of YLDs
- Reducing transfusion related cost by tens of billions of dollars
- Decreasing significant overall treatment costs
- Costs to enable can be obtained by re-allocating funds from blood acquisition budgets

YLD, years lived with disability.
Source: Hofmann A. et al. (2022) *(4)*.

Fig. 4. Phase A of the 8-model – Preparing the national/jurisdictional health care system for PBM



Commission

European Health Union

New rules for greater safety and quality of blood, tissues, and cells

BY 2027

Supporting high safety and quality standards based on up-to-date technical rules for substances of human origin (SoHO)

Extending protective measures to donors and to offspring born from medically assisted reproduction

Extending the safety and quality framework to **other donated SoHO** such as breast milk

Improving **harmonisation** across Member States, facilitating cross-border exchange of SoHO and **improving patient access** to the therapies they need

Implementing **digital-ready policies**

Creating conditions for **safe, effective and accessible innovation**

Improving **crisis**

Regolamento Europeo SoHO e PBM

Regolamento (UE) 2024/1938

- Adottato il 13 giugno 2024, in vigore dal 7 agosto 2027. Sostituisce le Direttive 2002/98/CE (sangue) e 2004/23/CE (tessuti e cellule) con un unico atto vincolante per tutti gli Stati Membri

Ambito e Innovazioni Chiave

- Copre tutte le sostanze di origine umana (sangue, tessuti, cellule, latte materno, microbiota). Standard armonizzati di qualità e sicurezza, piattaforma digitale EU-SoHO, tracciabilità donatore-ricevente per 30 anni

Protezione Donatori e Riceventi

- Principio di donazione volontaria e non remunerata, sistema di allerta rapida per eventi avversi (segnalazione entro 24 ore), monitoraggio degli esiti clinici a lungo termine

Continuità dell'Autosufficienza

- Piani di emergenza nazionali obbligatori, visibilità transfrontaliera delle scorte in tempo reale, resilienza del sistema trasfusionale durante le crisi

Implicazioni per il PBM

- Il PBM è riconosciuto come strategia complementare alla sicurezza trasfusionale. Il progetto IMPLEMENT-SoHO (2026–2028) e l'iniziativa Blood and Beyond promuovono l'integrazione del PBM nelle politiche sanitarie UE

SPECIAL ARTICLE

Essential Role of Patient Blood Management in a Pandemic: A Call for Action

Aryeh Shander, MD,* Susan M. Goobie, MD,† Matthew A. Warner, MD,‡ Matti Aapro, MD,§ Elvira Bisbe, MD, PhD,‖ Angel A. Perez-Calatayud, MD,¶ Jeannie Callum, MD,# Melissa M. Cushing, MD,** Wayne B. Dyer, PhD,†† Jochen Erhard, MD,‡‡ David Faraoni, MD, PhD,§§ Shannon Farmer, MBS, ‖‖¶¶ Tatyana Fedorova, PhD,## Steven M. Frank, MD,*** Bernd Froessler, MD, PhD,†††‡‡‡ Hans Gombotz, MD,§§§ Irwin Gross, MD,‖‖‖¶¶¶ Nicole R. Guinn, MD,### Thorsten Haas, MD,**** Jeffrey Hamdorf, MD, PhD,†††† James P. Isbister, MD,‡‡‡‡ Mazyar Javidroozi, MD, PhD,* Hongwen Ji, MD,§§§§ Young-Woo Kim, MD,‖‖‖‖ Daryl J. Kor, MD,¶¶¶¶ Johann Kurz, PhD,#####***** Sigismond Lasocki, MD, PhD,††††† Michael F. Leahy, MBChB,‡‡‡‡‡ Cheuk-Kwong Lee, MD,§§§§§ Jeong Jae Lee, MD, PhD,‖‖‖‖‖ Vernon Louw, MBChB, PhD,¶¶¶¶¶ Jens Meier, MD,##### Anna Mezzacasa, PhD,****** Manuel Munoz, MD, PhD,‡‡‡‡‡‡ Sherri Ozawa, RN,‡‡‡‡‡‡ Marco Pavesi, MD,§§§§§§ Nina Shander, BS,‖‖‖‖‖‖ Donat R. Spahn, MD,¶¶¶¶¶¶ Bruce D. Spiess, MD,###### Jackie Thomson, MBChB,******* Kevin Trentino, MPH,†††††††‡‡‡‡‡‡‡ Christoph Zenger, PhD,§§§§§§§ and Axel Hofmann, Dr.rer.medic,‖‖‖‖‖‖‖¶¶¶¶¶¶¶####### on behalf of the International Foundation of Patient Blood Management (IFPBM) and Society for the Advancement of Blood Management (SABM) Work Group

The World Health Organization (WHO) has declared Coronavirus Disease 2019 (COVID-19), the disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a pandemic. Global health care now faces unprecedented challenges with widespread and rapid human-to-human

Table 1. The ABC Toolbox for PBM (From the IFPBM-SABM Workgroup)

Tools	Anemia and Iron Deficiency	Blood Loss and Bleeding	Coagulopathy
1. Program implementation methodology	• Change culture across your institution[11-13] • Disseminate evidence-based PBM guidelines/recommendations and detect and discourage nonevidence practices[14-22] • Translate evidence-based guidelines/recommendations into clinical practice[13,23] • Identify practice areas that need improvement		
2. Diagnostic devices	• Point-of-care hemoglobin analyzers • Point-of-care testing for iron deficiency if available	• Point-of-care coagulation and platelet function testing and goal-directed treatment[24-26] • Rapid diagnostic tests for the presence of DOACs if available[27]	• Point-of-care coagulation and platelet function testing and goal-directed treatment[24-26] • Rapid diagnostic tests for presence of DOACs if available[27]
3. Treatment devices		• Pre- and postoperative cell recovery (cell saver)[28] • ANH[29]	
4. Pharmaceuticals	• Oral/intravenous iron[30-33] • Folic acid[34] • Vitamin B_{12}[34,35] • Erythropoiesis-stimulating agents[30,32,33]	• Antifibrinolytics (tranexamic acid, aminocaproic acid)[36-39] • Topical hemostatic agents • Local vasoconstrictive agents • WBC and platelet-stimulating agents where appropriate • Consider high Fio_2 (1.0) in patients with life-threatening anemia	• Fibrinogen concentrate[40] • PCC[40] • Other clotting factors • Vitamin K intravenously

Table 1. Continued

Tools	Anemia and Iron Deficiency	Blood Loss and Bleeding	Coagulopathy
7. SOP and procedural guidelines	• SOPs for detection, evaluation, and management of anemia and iron deficiency for specific settings: • Pre- and postsurgery • Cancer • Heart failure • Chronic kidney disease • Pregnancy and postpartum • Pediatrics • Hospital-acquired anemia • Patients with iron-restricted erythropoiesis • Anemia of inflammation	• Management of anticoagulants and antiplatelet agents before interventions • Bleeding history-taking • Bleeding management algorithms • Procedural guideline for cell salvage • Procedural guideline for ANH • Maintaining normothermia • Major hemorrhage protocol • Guidelines on oral versus intravenous iron, iron preparations, and dosing • Establish "single-unit transfusion policy"[52–55]	
8. Data collection, benchmarking, and reporting systems	• Patient-centered and data-driven decision-making • Measure the change with respect to patient outcomes/cost savings[56] • Report the change[57]		
9. Continuous education and training	• Multidisciplinary and multiprofessional programs organized and led by local champions • Regular updating of curricula/learning content • Ensuring introductory courses for new and junior staff		
10. Patient education, information, and consent	• Develop a simplified education management plan • Establish procedures for communicating with patients retreatment plan, risks/benefits, and obtaining consent[58] • Communicate plan to all members of the team		
11. Infrastructure	• Appoint PBM staff and allocate/reallocate funds accordingly[13] • Create job descriptions for PBM dedicated staff[13] • Install necessary medical devices and equipment[13,23] • Reengineer clinical pathways and infrastructure to allow appropriate preoperative/preintervention patient assessment and optimization[13,23] • Ensure appropriate waiting zones and treatment areas particularly for preoperative/preintervention patient optimization[13] • Form a multidisciplinary PBM committee[13]		

PATIENT BLOOD MANAGEMENT

Original article

Maturity Assessment model for Patient Blood Management to assist hospitals in improving patients' safety and outcomes. The MAPBM project

Elvira Bisbe[1], Albert Garcia-Casanovas[2], Carles Illa[3], Jordi Varela[4], Misericordia Basora[5], Marta Barquero[6], Maria J. Colomina[7], Lucia González[8], Axel Hofmann[9,10], MAPBM Working Group[11*] (listed in Appendix 1)

[1]*Anaesthesia Department, Hospital del Mar Medical Research Institute, IMIM, Barcelona, Spain;*
[2]*Perioperative Medicine Research Group, Hospital del Mar Medical Research Institute, IMIM, Barcelona, Spain;*
[3]*Healthcare, IQVIA Spain,*

Background - Patient blood management (PBM) is an evidence-based care bundle with proven ability to improve patients' outcomes by managing and preserving the patient's own blood. Since 2010, the World Health Organisation has urged member states to implement PBM. However, there has been limited progress in developing PBM programmes in hospitals due to the implicit challenges of implementing them. To address these challenges, we developed a Maturity Assessment Model (MAPBM) to assist healthcare organisations to measure, benchmark, assess in PBM, and communicate the results of their PBM programmes. We describe the MAPBM model, its benchmarking programme, and the feasibility of implementing it nationwide in Spain.

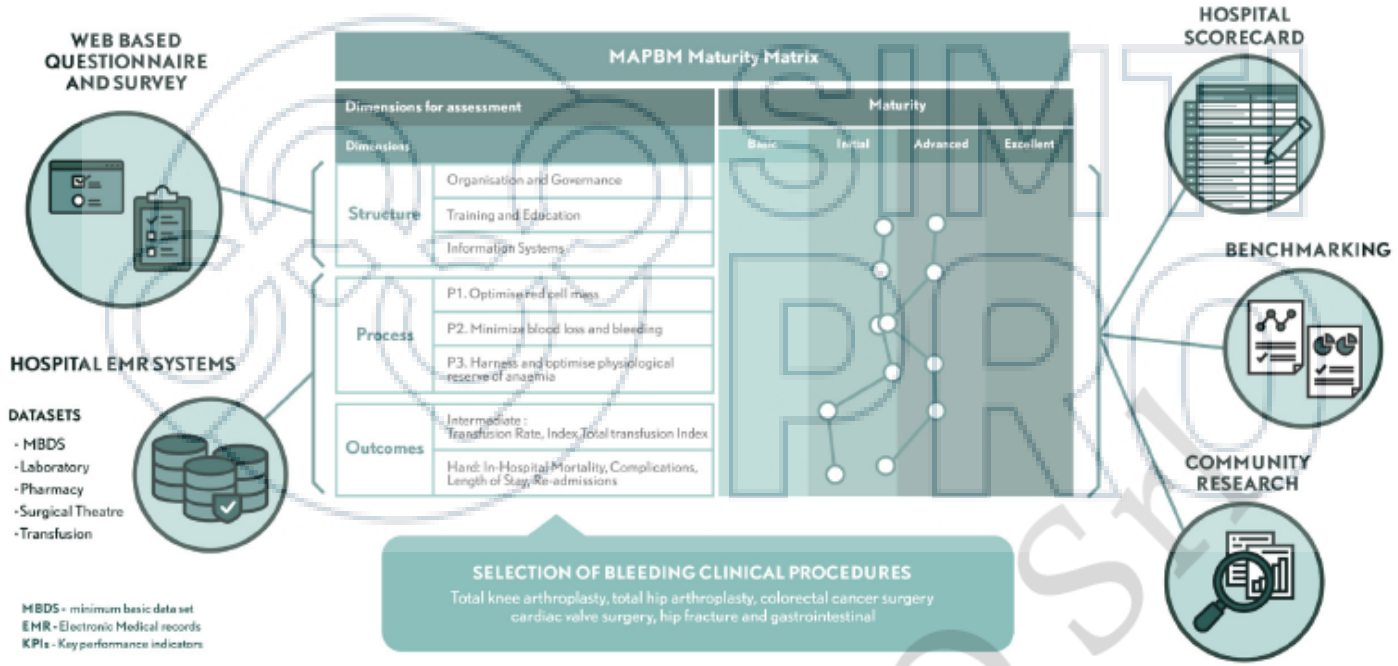


Figure 1 - Maturity Assessment for Patient Blood Management programme framework and maturity matrix

Transfusion and Apheresis Science 45 (2011) 281–285

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Transfusion and Apheresis Science

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Integrated strategies for allogeneic blood saving in major elective surgery

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Red blood cell storage
Peri-surgical blood transfusions
Blood-saving

ABSTRACT

Background: Large use of allogeneic red blood cell concentrates (RBCc), albeit necessary in major surgery, may influence patients' outcome.
Design and methods: We introduced an integrated strategy including patients' evaluation and supplementation associated with autologous blood collection and saving to support major elective surgery at our hospital since 2008. After 2 years of stabilization of this approach, we analyzed the results obtained in 2010 in terms of allogeneic blood usage and reduction of transfusion of stored RBCs.
Results: Analyzing 2010 results we found that usage of total autologous RBCc units was increased by 2.2 folds, of "not stored" autologous RBCc units by 2.4 folds and of allogeneic RBCc unit transfusion reduced by 65%. The significant reduction in the number of transfused allogeneic RBCc units associated with the use of "fresher" blood could prevent patients' complications due to immunomodulation and biologic/metabolic disregulation.

1. Introduction

The current use of red blood cell concentrates (RBCc) in transfusion support of patients undergoing major surgery is a standard and effective practice to counteract blood loss and consequent hemodynamic effects related to acute anemia and hemodilution. Tissue oxygenation requires an adequate hemoglobin concentration in circulating blood and a sufficient tissue perfusion is function of heart activity which is sustained by a proper myocardium oxygenation by coronary flow and oxygen transportation. Beyond certain limits acute blood loss reduced oxygen transportation but not tissue perfusion which increases until a hemoglobin (Hb) concentration is maintained around the value of 10 g/dL; when acute blood loss determines an Hb decrease below 10 to 9 g/dL, tissue oxygenation decreases without increase in tissue perfusion and in the absence of potentiating mechanisms for oxygen tissue delivery due to the lack of so prompt metabolic changes translating into Hb affinity reduction at tissue levels [1–3]. Hence, the reaching of Hb values below 7 to 6 g/dL in an acute fashion determines a progressive failure in aerobic metabolism which results in significant reduction of energetic compounds and acidosis. At this stage, RBCc transfusion is the only chance to recover tissue oxygenation and generalized energy failure. Generally, these circumstances occur when more than 50% of blood volume is lost in a short time in a subject who has a pre-bleeding normal Hb values or after 30–40% of blood loss in subjects who experience hemorrhage with a starting suboptimal

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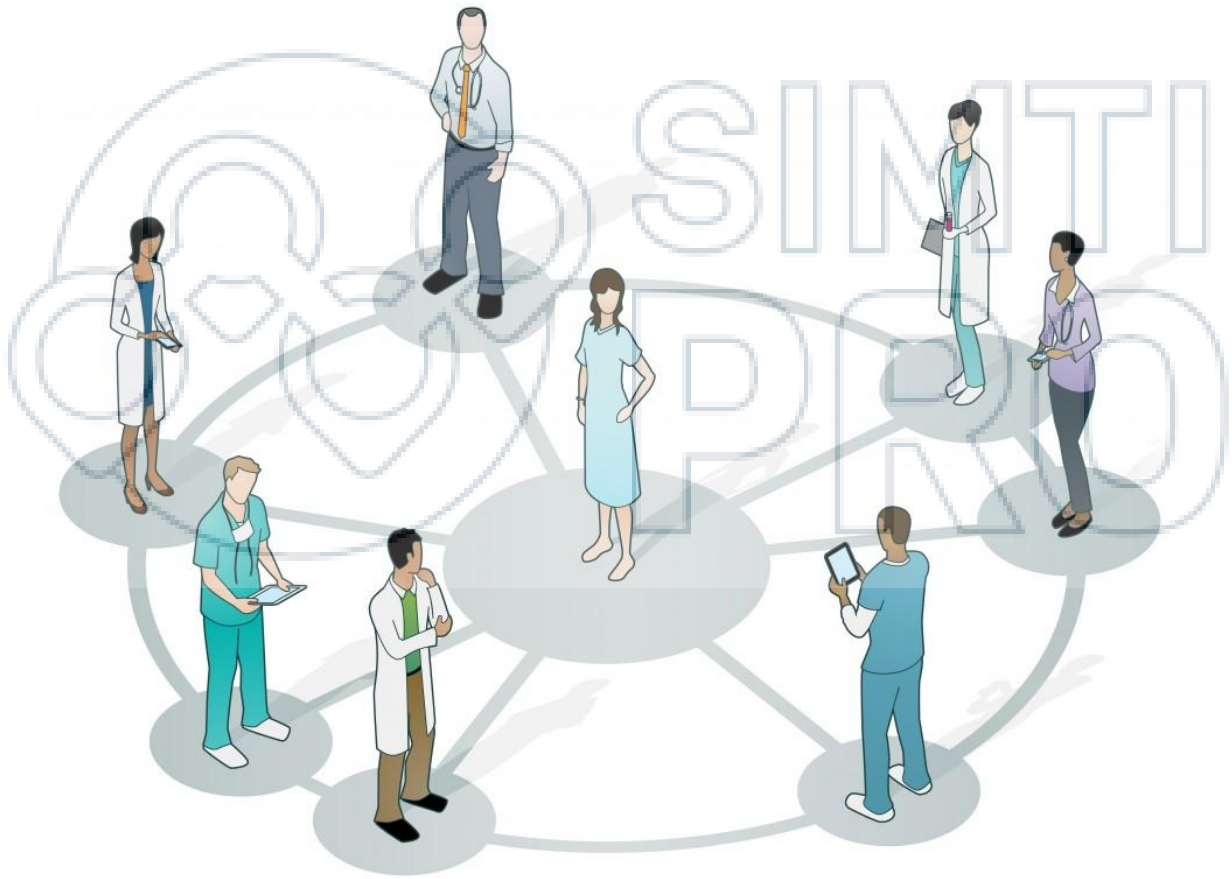
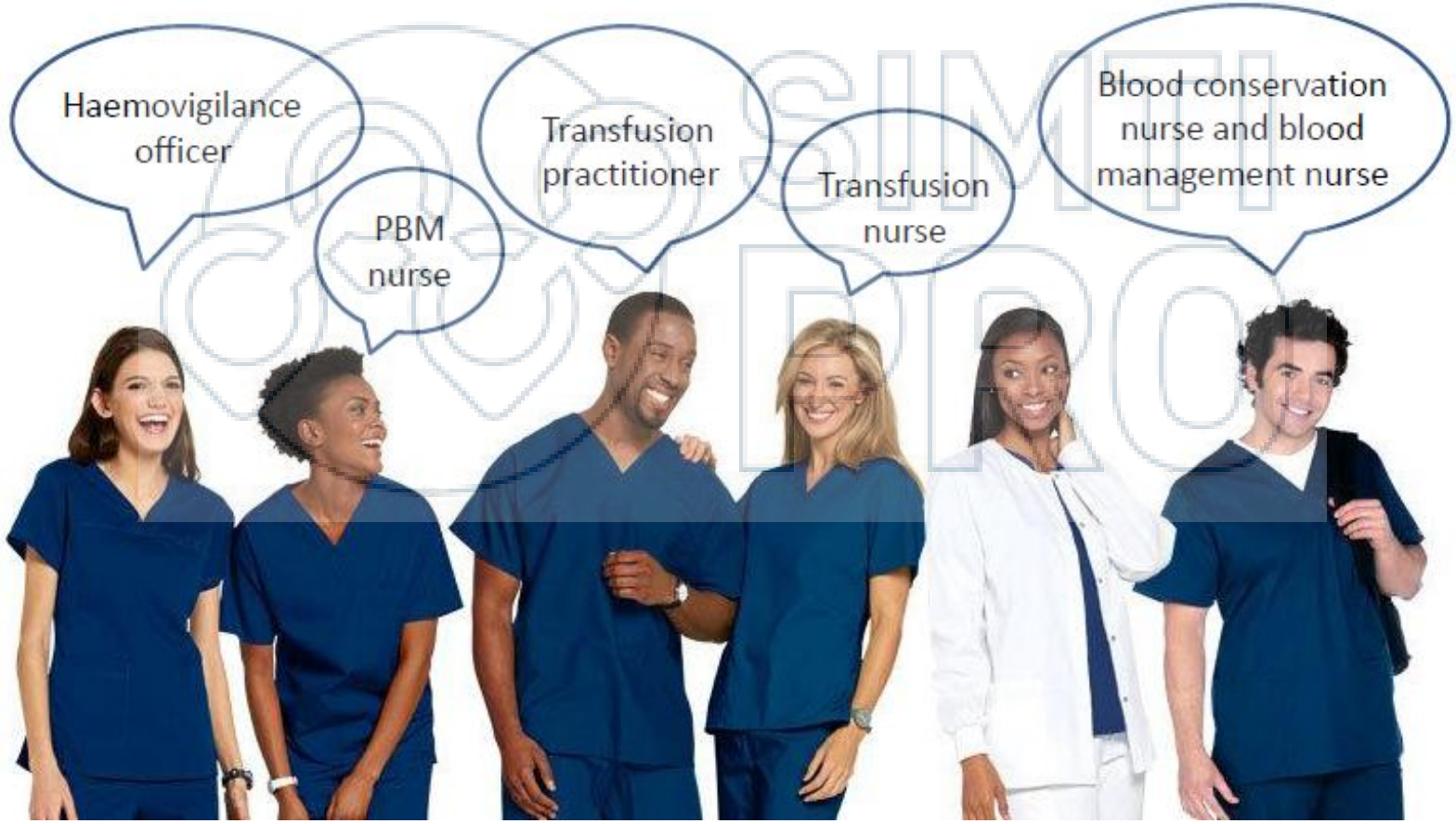
PATIENT BLOOD MANAGEMENT

Condivisione ed Orientamento Multidisciplinare



TEAM MULTIDISCIPLINARE



Pilastri gestionali
Modello Operativo

P

Gruppo Interdisciplinare Identificato

Integrazione e Condivisione SOPs

B

Training operativo ed applicativo

Formazione interdisciplinare- Hospital meeting

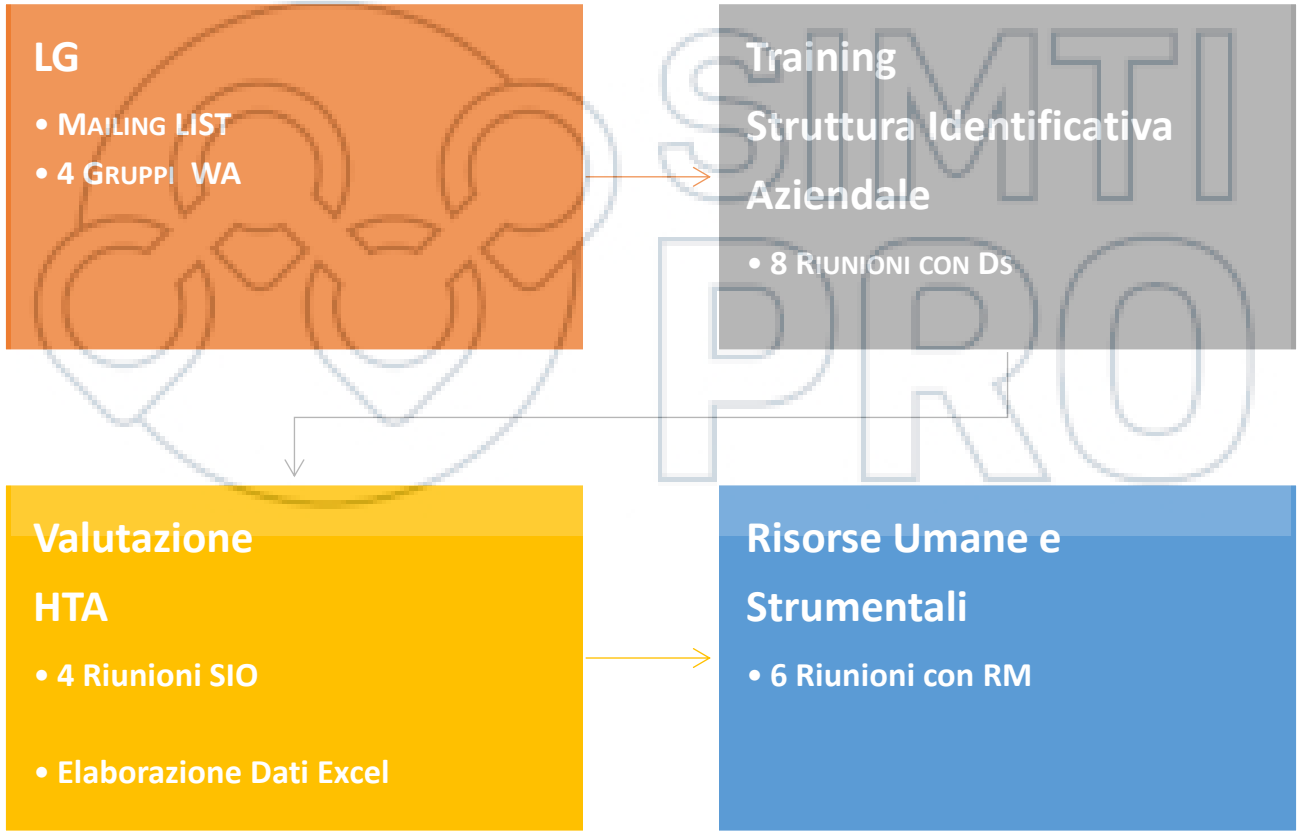
M

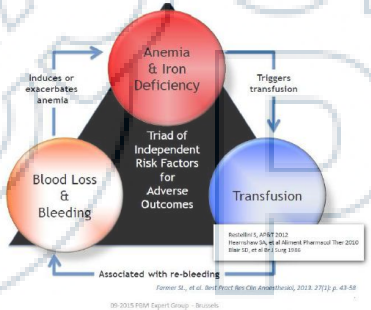
Database ed Integrazione gestionali- SIO

Indicatori fase preoperatoria e intraoperatoria


Direzione
Strategica
Risk manager
Coordinatore
GDL
Gruppo di
Anestesisti
Coordinatori inf dei
Reparti
Gruppo dei
Chirurghi
Coordinatori Inf
Farmacia
E Ufficio Risorse
umane e
strumentali

Formazione e Condivisione





- POCT IN AMBITO PBM

SISTEMA SANITARIO REGIONALE

AZIENDA OSPEDALIERA
SAN CAMILLO FORLANINI

REGIONE LAZIO

DELIBERAZIONE N. 0629 **DEL** 10 MAG. 2018

Struttura proponente: UOSD Qualità, Certificazione e Sicurezza delle Cure - Risk Management Centro di Costo: G0DG43JD1S

Codice settore proponente: **RMDG15/2018** del 20/04/2018

Oggetto: Adozione del Percorso Diagnostico Terapeutico Assistenziale di Blood Management (PBM) per i trattamenti chirurgici programmati. "***Il Provvedimento non comporta oneri di spesa***"

L'estensore
(Dott. Antonio Silvestri)

IL DIRETTORE GENERALE
Dott. Fabrizio d'Alba

Parere del Direttore Amministrativo: Dott.ssa Francesca Milito

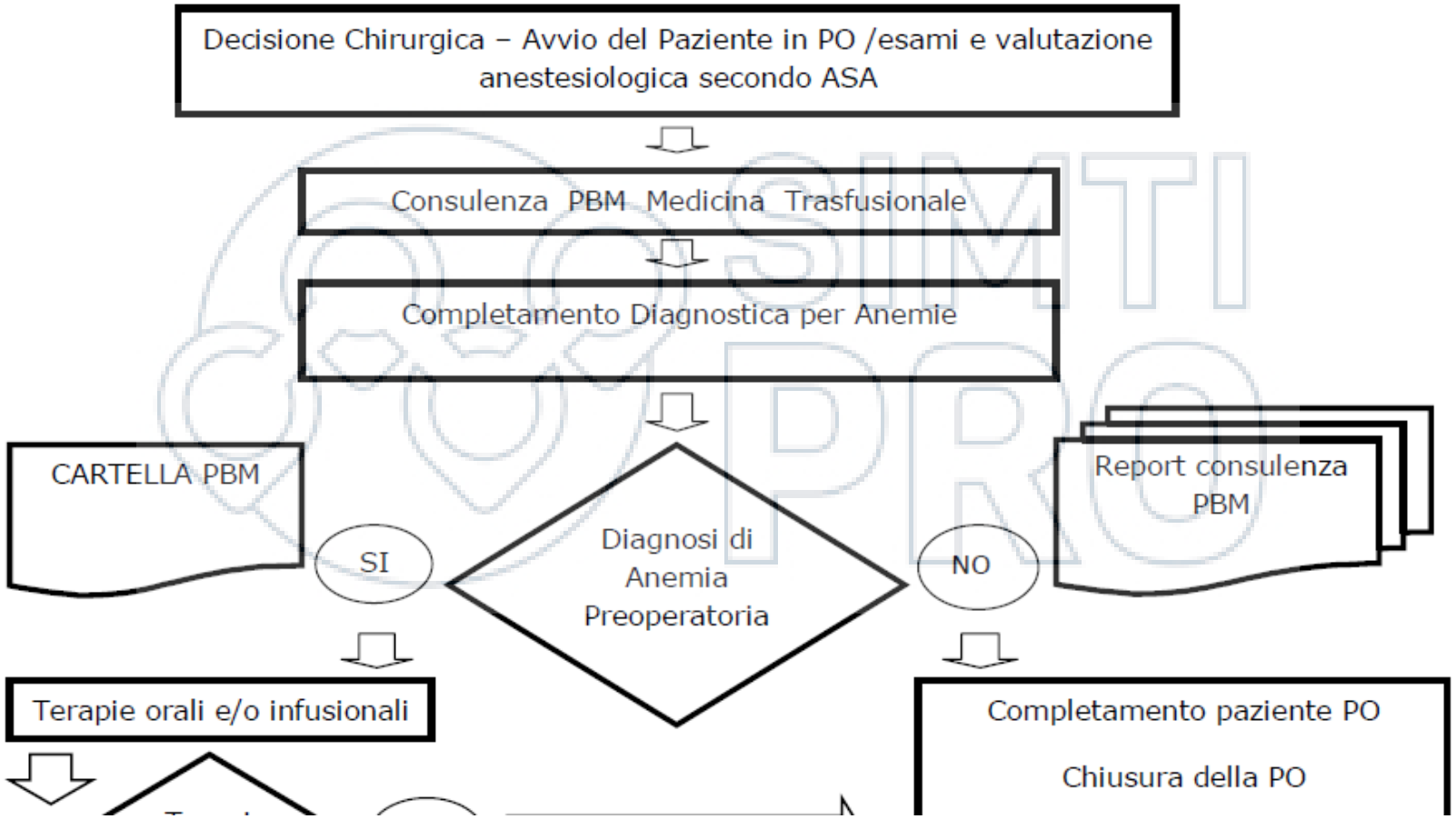
☒ FAVOREVOLE ☐ NON FAVOREVOLE (*con motivazioni allegate al presente atto*)

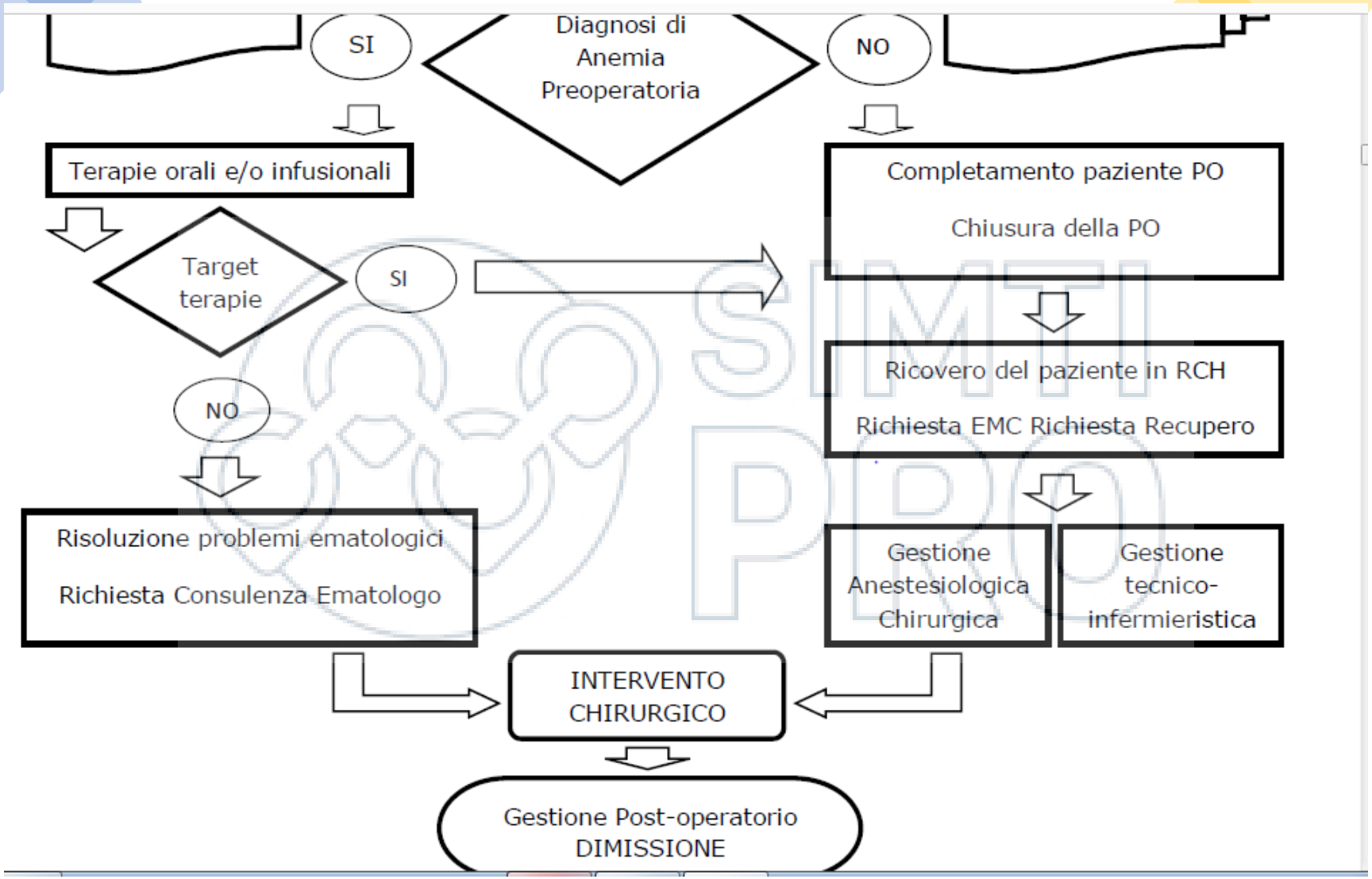
Firma

Data 4/5/2018

6. DIAGRAMMA DI FLUSSO

Il percorso descritto in questo PDTA è schematizzato nella flow-chart seguente:




SI
Diagnosi di Anemia Preoperatoria
NO
Terapie orali e/o infusionali
Target terapie
SI
Completamento paziente PO
Chiusura della PO
NO
Ricovero del paziente in RCH
Richiesta EMC Richiesta Recupero
Risoluzione problemi ematologici
Richiesta Consulenza Ematologo
Gestione Anestesiologica Chirurgica
Gestione tecnico-infermieristica
INTERVENTO CHIRURGICO
Gestione Post-operatorio DIMISSIONE

SISTEMA SANITARIO REGIONALE

AZIENDA OSPEDALIERA
SAN CAMILLO FORLANINI

REGIONE
LAZIO

DELIBERAZIONE N. 1932 DEL 21 DIC. 2022

Struttura proponente: UOSD Qualità, Certificazione e Sicurezza delle Cure-Risk Management Centro di Costo: G0DG43JD1S

Codice settore proponente: RMDG 08/2022 del 12/12/2022

Oggetto: Aggiornamento e revisione del Percorso Diagnostico Terapeutico Assistenziale di Blood Management (PBM) per i trattamenti chirurgici programmati. *"Il Provvedimento non comporta oneri di spesa"*

"Il Provvedimento non comporta oneri di spesa"

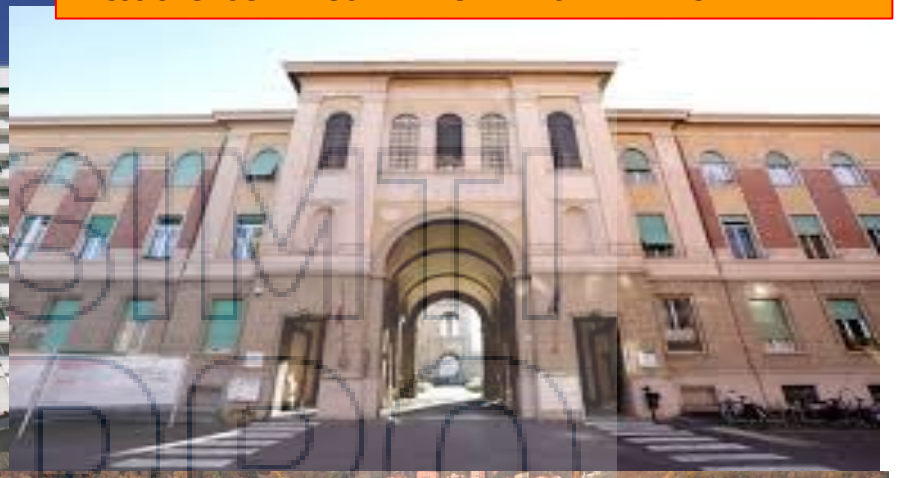
L'estensore
(Dott. Antonio Silvestri)

IL DIRETTORE GENERALE
Dr. Narciso Mostarda

METROPOLITAN TRANSFUSIONAL MEDICINE DEPARTMENT -AUSL BOLOGNA

Maggiore Hospital : C.A. Pizzardi

IRCSS S. ORSOLA HOSPITAL -UNIVERSITY MEDICINE



IRCSS Bellaria Hospital

IRCSS Istituto Ortopedico Rizzoli

By Maria Beatrice Rondinelli

ANALISI STRUTTURALE –RISORSE DISPONIBILI DELL'ARTE

REVISIONE DELLE PROCEDURE –SOPS

MODULISTICA DEDICATA

COINVOLGIMENTO DEGLI STAKEHOLDERS-
GRUPPO INTERDISCIPLINARE DEDICATO

SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Unità Sanitaria Locale di Bologna

Istituto delle Scienze Neurologiche
Istituto di Ricovero e Cura a Carattere Scientifico

CONVEGNO NAZIONALE

Integrazione
Interdisciplinarietà
Innovazione
della MEDICINA TRASFUSIONALE

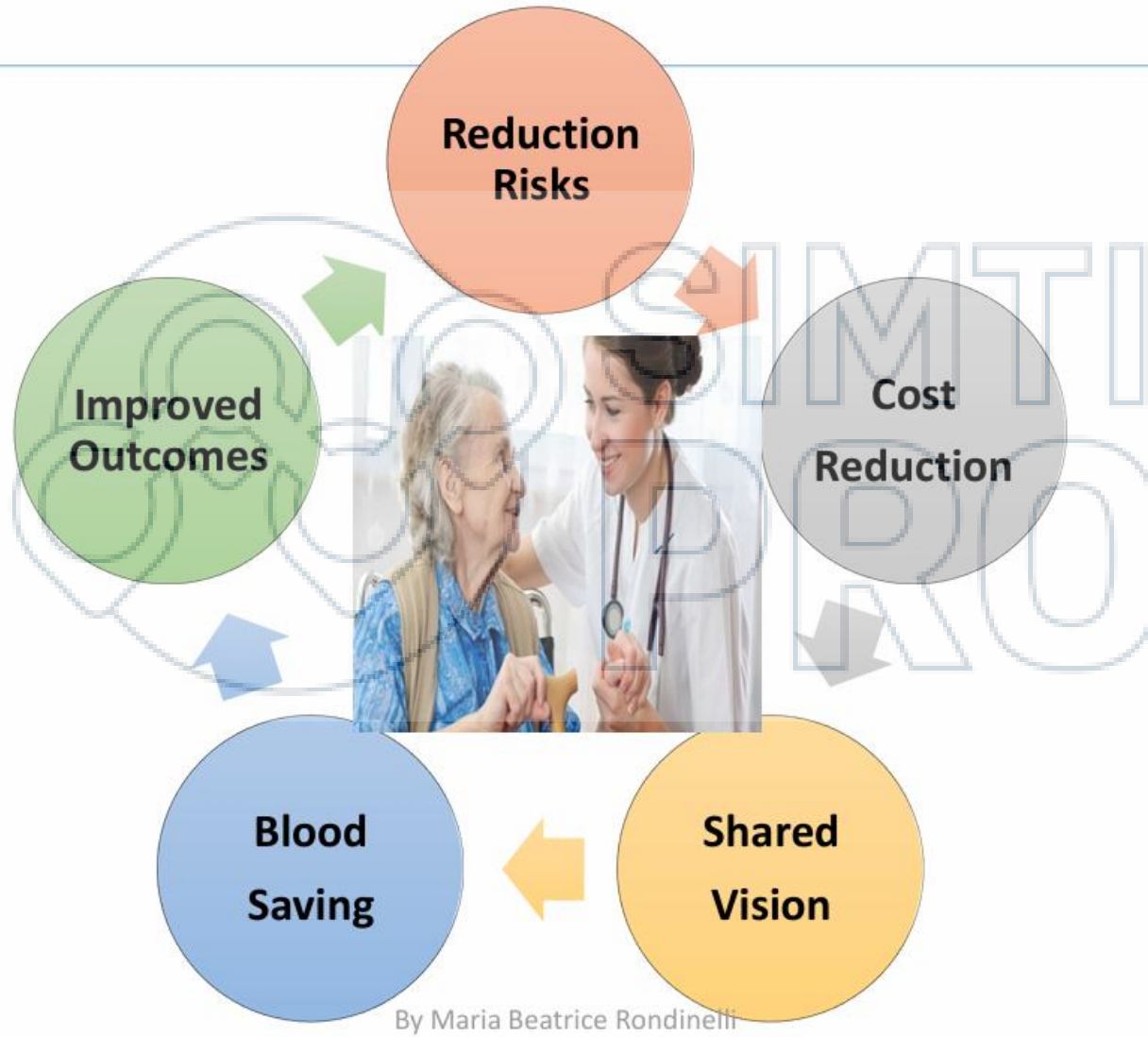
7 marzo 2025
h 9.00/17.00

Aula Magna
Ospedale Maggiore
Bologna

MEMORIAL
a ***Marco Pavesi***

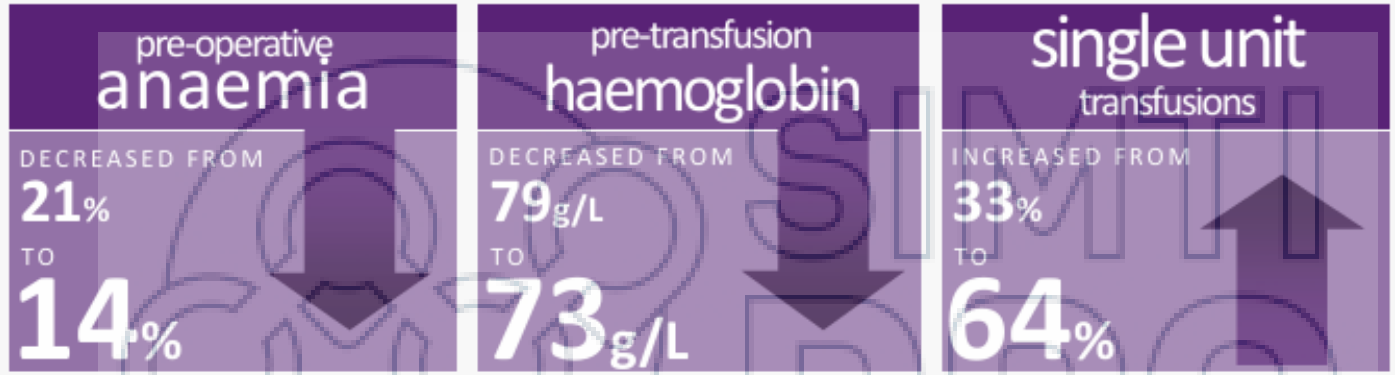
Responsabile scientifico: **Maria Beatrice Rondinelli**
Direttrice S.C. Servizio Immunoematologia e Medicina Trasfusionale Area Metropolitana Bologna

PBM GOVERNANCE

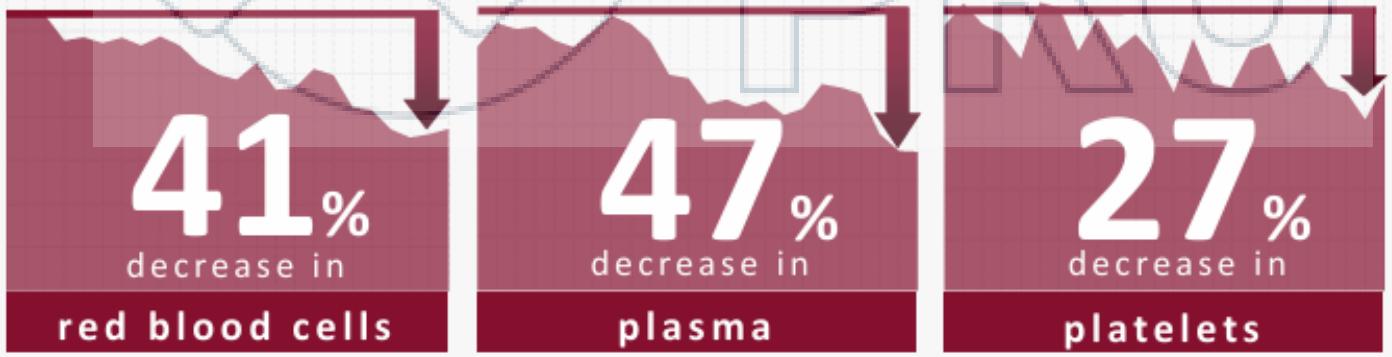


IMPROVED PATIENT OUTCOMES

IMPROVED KEY PROGRAM INDICATORS



REDUCTIONS IN UNITS OF BLOOD TRANSFUSED



PRODUCT COST SAVINGS

Over the six-year study period blood product cost savings were:

ACTIVITY BASED COST SAVINGS

...however with the hospital costs of administering a transfusion added, the gross savings are estimated to be between:

Strumenti operativi

LG	**AUDIT PRELIMINARI**
	VALUTAZIONE DEI DATI RETROSPETTIVI
	DATI SIO
Training	**IDENTIFICAZIONE DELLA LEADERSHIP**
Struttura Identificativa	**STAKEHOLDERS**
Aziendale	
Valutazione HTA	**Scelta degli Indicatori di efficacia e di processo**
Risorse Umane e Strumentali	**Analisi delle competenze**

Efficacia ed Efficienza

Efficacia indica la capacità di raggiungere l'obiettivo prefissato

Efficienza valuta l'abilità di farlo impiegando le risorse minime ed indispensabili

Key Performance Indicators

Indicatori di Efficacia Clinica

- Tasso di trasfusione per procedura chirurgica, mortalità e morbilità correlate, durata della degenza, tasso di infezioni postoperatorie

Indicatori di Appropriatezza Trasfusionale

- Percentuale di single-unit transfusion, soglia di Hb pre-trasfusionale, aderenza ai protocolli trasfusionali, rapporto richieste/trasfusioni effettuate

Indicatori di Gestione dell'Anemia

- Prevalenza di anemia preoperatoria, tasso di screening e trattamento preoperatorio, valori medi di Hb all'ingresso e alla dimissione

Indicatori di Risparmio Ematico

- Unità di emocomponenti consumate per paziente, utilizzo di tecniche di recupero intraoperatorio (cell saver), riduzione dello spreco di emocomponenti

Indicatori Economici

- Costo per unità trasfusa, risparmio complessivo sui prodotti ematici, costi evitati per riduzione delle complicanze e della degenza

Indicatori di processo e di esito

UO riferimento	Definizione	Indicatore	Valore attuale	Target	Risparmio netto/anno
UOSD POcentralizzata	**Appropriatezza fase preoperatoria**	N°Paz.inviati a Consulenza PBM/N°Interventi Chirurgici elettivi candidati al percorso di PBM	~52%	>/=60%	**Riduzione giorni ricovero**
UOC SIMT	**Congruità nella diagnostica delle anemie**	N°Consulenze PBM efficaci /N°Interventi Chirurgici elettivi candidati al percorso di PBM	~50%	>/=70%	**1000 Unità >€196.000**
UOC Farmacia	**Efficienza risorse farmacologiche**	N°Terapie infusionali Marziali Effettuate/N° Terapie Inf. Marziali Richieste	~50%	>/=60%	**500 Unità >€98.000**
UOC Anestesia e Rianimazione	**Congruità PBM Intraoperatorio**	N° Paz.gestiti con POCT/N°Paz chirurgici elettivi maggiori con sanguinamento non chirurgico	~40%	>/=50%	**Riduzione giorni ricovero**
UOC Anestesia e Rianimazione	**Appropriatezza richiesta del recupero sangue**	N° unità equivalenti ottenute da recupero /N°di recuperi richiesti	~30%	>/=50%	**>€200.000**
UOC Ematologia	**Appropriatezza consulenza ematologica nel percorso PBM**	N° Paz. con problemi emostatici-trombotici con richiesta di consulenza ematologica/ N°Paz in terapie con antiaggreganti-anticoagulanti	~20%	>/=50%	**Rispetto dei DRG chirurgici** **Riduzione giorni di ricovero** **500 Unità >€98.000**
UU.OO.CC. Chirurgia	**Appropriatezza soglie trasfusionali**	N°unità allogeniche trasfuse/N°unità richieste	~60%	<50%	
UOC SIMT	**Congruità gestione postoperatorio**	N° Paz. anemici valutati nel postop/N°paz di chirurgia elettiva maggiore candidati a PBM	~10%	>30%	**Riduzione giorni ricovero**

Indicatori di processo e di esito

UO riferimento	Definizione	Indicatore	Valore attuale	Target	Risparmio netto/anno
UOSD POcentralizzata	**Appropriatezza fase preoperatoria**	N°Paz.inviati a Consulenza PBM/N°Interventi Chirurgici elettivi candidati al percorso di PBM	~52%	>/=60%	**Riduzione giorni ricovero**
UOC SIMT	**Congruità nella diagnostica delle anemie**	N°Consulenze PBM efficaci /N°Interventi Chirurgici elettivi candidati al percorso di PBM	~50%	>/=70%	**1000 Unità >€196.000**
UOC Farmacia	**Efficienza risorse farmacologiche**	N°Terapie infusionali Marziali Effettuate/N° Terapie Inf. Marziali Richieste	~50%	>/=60%	**500 Unità >€98.000**
UOC Anestesia e Rianimazione	**recupero sangue**	N° Paz.gestiti con POCT/N°Paz chirurgici ottenute da recupero /N°di recuperi richiesti	~30%	>/=50%	**Riduzione**
UOC Ematologia	**Appropriatezza consulenza ematologica nel percorso PBM**	N° Paz. con problemi emostatici-trombotici con richiesta di consulenza ematologica/ N°Paz in terapie con antiaggreganti-anticoagulanti	~20%	>/=50%	**Rispetto dei DRG chirurgici** **Riduzione giorni di ricovero** **500 Unità >€98.000**
UU.OO.CC. Chirurgia	**Appropriatezza soglie trasfusionali**	N°unità allogeniche trasfuse/N°unità richieste	~60%	<50%	
UOC SIMT	**Congruità gestione postoperatorio**	N° Paz. anemici valutati nel postop/N°paz di chirurgia elettiva maggiore candidati a PBM	~10%	>30%	**Riduzione giorni ricovero**

RISPARMIO ECONOMICO ASSICURATO!!!

Indicatori di processo ed esito

UO riferimento	Definizione	Indicatore	Valore attuale Anno 2017	Target prestabilito	Flussi Informativi
UOSD PO centralizzata	**Appropriatezza della fase preoperatoria del PBM**	N°Paz.inviati a Consulenza PBM/N°Interventi Chirurgici elettivi candidati al percorso di PBM	~52%	>/=60%	SIO Cartella SIS
UOC SIMT	**Congruità nella fase diagnostica secondo algoritmo preoperatorio PBM**	N°Consulenze PBM efficaci (>2grHb/N°Paz inviati a Consulenza	~50%	>/=70%	EMONET THEMIX
UOC Farmacia	**Efficienza nelle risorse farmacologiche**	N°Terapie infusionali Marziali Effettuate/N° Terapie Inf. Marziali Richieste	~50%	>/=60%	EMONET THEMIX
UOC Anestesia e Rianimazione	**Congruità nella fase diagnostica secondo algoritmo intraoperatorio PBM**	N° Paz.gestiti con POCT/N°Paz chirurgici elettivi maggiori con sanguinamento non chirurgico	~40%	>/=50%	REGISTRO OPERATORIO
UOC Anestesia e Rianimazione	**Appropriatezza nella richiesta del recupero sangue**	N° unità equivalenti ottenute da recupero /N°di recuperi richiesti	~30%	>/=50%	REGISTRO OPERATORIO

UOC Ematologia	**Appropriatezza nella consulenza ematologica nel percorso PBM**	N° Paz. con problemi emostatici-trombotici con richiesta di consulenza ematologica/ N°Paz in terapie con antiaggreganti-anticoagulanti	**~20%**	**>/=50%**	**EMONET** **CARTELLA DEDICATA**
UU.OO.CC. Chirurgia	**Appropriatezza nelle soglie trasfusionali**	N°unità allogeniche trasfuse/N°unità richieste	**~60%**	**<50%**	**EMONET**
UOC SIMT	**Congruità nella fase terapeutica secondo algoritmo preoperatorio PBM**	N° Paz. anemici valutati nel periodo postop/N°paz che hanno effettuato CONSULENZA	**~10%**	**>30%**	**SIO** **SIS**
UU.OO.CC. Chirurgia	**Adempimento gestione terapeutica postoperatoria del PBM**	N°Paz chirurgici elettivi maggiori con anemia iatrogena/N°di Paz. chirurgici elettivi maggiori ricoverati	**~90%**	**=<60%**	**THEMIX** **SIS**
UOC Professioni Sanitarie	**Adempimento delle raccomandazioni CNS sul CS del PBM**	Redazione ed analisi e somministrazione di un questionario di Customer Satisfaction	**No**	**SI**	**REPORTISTICA**

Take Home messages

- I percorsi di PBM si possono e devono realizzarsi con il coinvolgimento degli stakeholders istituzionali
- Database gestionale integrato (Data manager !!!)
- GdL multispecialistico rappresentativo e Leadership condivisa del Coordinatore
- Scelta ed utilizzo di indicatori di contesto per valutare efficacia ed efficienza applicativa
- Monitoraggio del Processo con indicatori specifici
- Valutazione degli esiti e monitoraggio
- Training continuo

SABM : NY 2018

SIMT AM BO

23 Dirigenti medici 9 Dirigenti Biologici
3 Coordinatori 52 Tecnici -39 Infermieri -

GRAZIE !

SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Unità Sanitaria Locale di Bologna

Istituto delle Scienze Neurologiche
Istituto di Ricovero e Cura a Carattere Scientifico

Servizio di Immunoematologia e Medicina Trasfusionale
di Area Metropolitana di Bologna – SIMT A.M.BO
Direttore Dr. ssa Maria Beatrice Rondinelli