

45°

Convegno Nazionale di Studi di Medicina Trasfusionale

Rimini | 29-31 maggio 2024



ERAS & PBM: best practice?

Marco Catarci, MD, FACS

General Surgery Unit - Ospedale «Sandro Pertini» - Rome, Italy

- Honoraria from *Baxter Spa Italy*, for advisory board on Hemostatics & Adhesion prevention
- Unconditional support to the *Enhanced Recovery – Patient Blood Management implementation program* of the Italian Surgical Association (ACOI) from *Vifor Pharma, B.Braun Italy and Baxter Spa Italy*.



Deputy President, Italian Surgical Association (ACOI)



Founder and Coordinator, the **Italian ColoRectal Anastomotic Leakage (iCral™)** study group



SISTEMA SANITARIO NAZIONALE
ASL ROMA 2



 **PATIENT BLOOD
MANAGEMENT ITALIA**

Il Centro Nazionale Sangue (CNS) sta promuovendo dal 2012 – *in linea con la Risoluzione WHA63.12 del 21/05/2010 dell'Organizzazione Mondiale della Sanità – il Patient Blood Management (PBM), una strategia diretta a predisporre "metodi e strumenti innovativi e più efficaci per garantire l'appropriatezza della gestione, organizzativa e clinica, della risorsa sangue".*

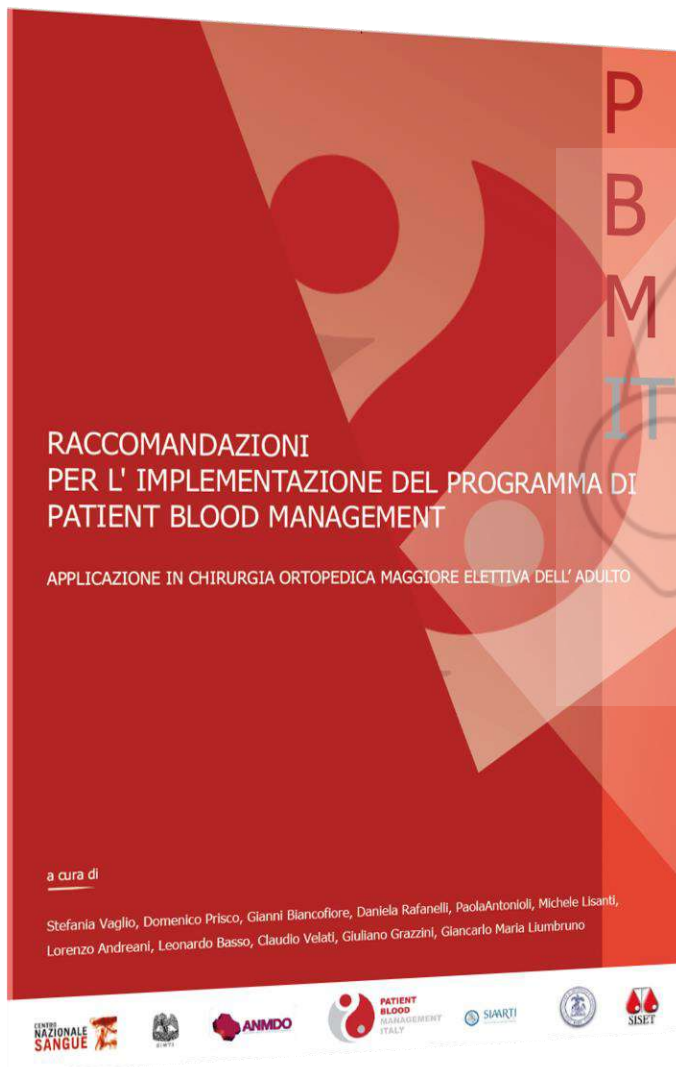
- Evidence-based multidisciplinary and multimodal strategy, which puts patient health and safety at the center and improves clinical outcomes based on patients' blood resources.
- This approach significantly reduces the use of blood products.

2015 Following the WHA63.12 resolution by WHO (2010), the **Italian Health Ministry** releases the «Provisions on quality and safety requirements for blood and blood components», stating that **specific PBM programs should be defined and implemented throughout the country** on the basis of specific guidelines of the «Centro Nazionale Sangue» (*national blood center, CNS*)

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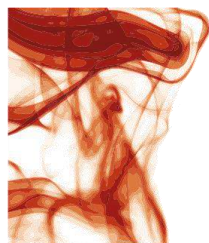


2013-2015 The CNS and four national scientific societies of transfusion medicine, hospital management, anesthesiology, and orthopedic surgery release the **guidelines for PBM in elective major orthopedic surgery.**

Marco Catarci, MD, FACS – UOC Chirurgia Generale - Ospedale Sandro Pertini



SISTEMA SANITARIO NAZIONALE
ASL ROMA 2



CENTRO NAZIONALE SANGUE

Istituto Superiore di Sanità



2016: CNS releases the «PBM program guidelines»,

containing clear statements about:

- *Anemia screening & management*
- *Restrictive transfusion thresholds*
- *One-at-a-time policy*
- *Concentrated i.v. iron formulations*
- *Perioperative bleeding control (tranexamic acid)*
- *Implementation of local PBM teams*



The Aussies' bites recipe (no law; 4.5M Au\$ investment)

TRANSFUSION
2017

Results from the
world's largest PBM
study (n=605'046)

ORIGINAL RESEARCH
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

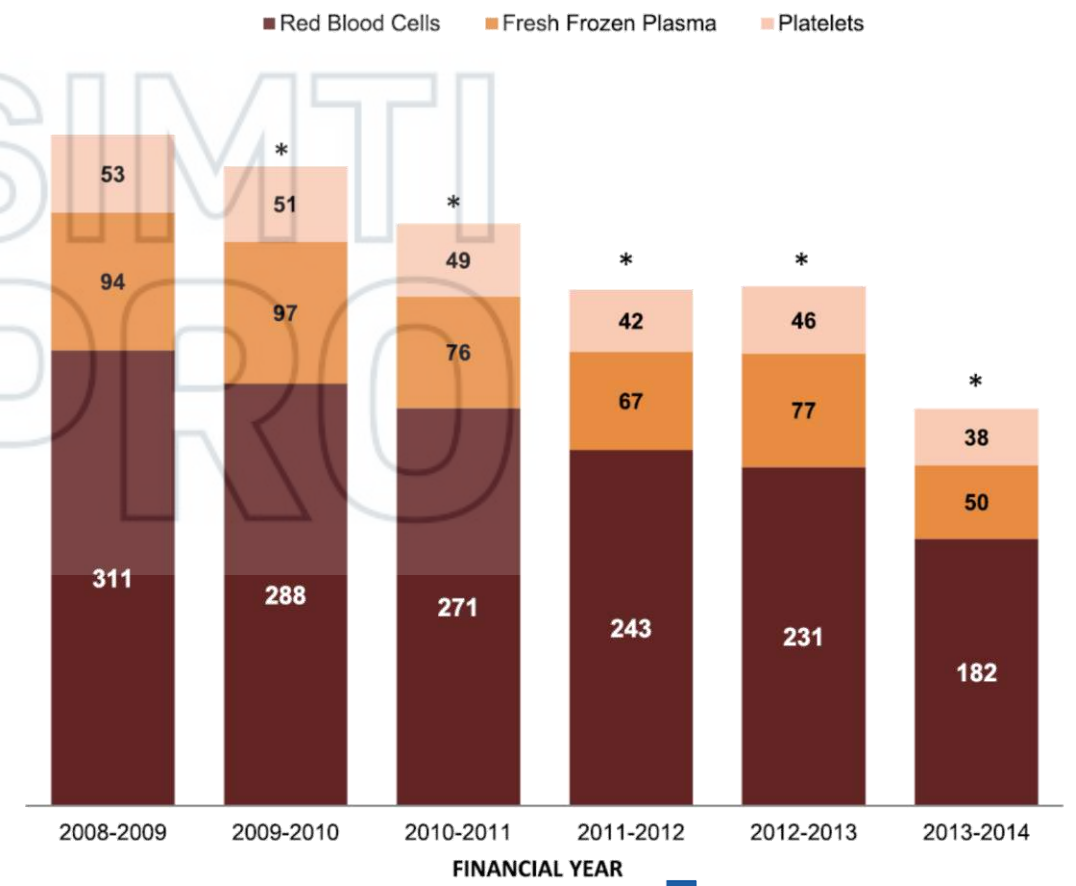
Michael E. Leahy,^{1,2,3} Axel Hoffmann,^{4,5,6} Simon Fowler,⁷ Kevin M. Trentino,⁸
Sally A. Burrows,⁹ Stuart G. Swain,⁶ Jeffrey Hamdorf,^{6,10} Trudi Gallagher,^{11,12}
Audrey Koay,¹¹ Gary C. Goethel,^{11,13} and Shannon L. Farmer¹⁴

BACKGROUND: Patient blood management (PBM) programs are associated with improved patient outcomes, reduced transfusions and costs. In 2008, the Western Australia Department of Health initiated a comprehensive health-system-wide PBM program. This study assesses program outcomes.

STUDY DESIGN AND METHODS: This was a retrospective study of 605,046 patients admitted to four major adult tertiary-care hospitals between July 2008 and June 2014. Outcome measures were red blood cell (RBC), fresh-frozen plasma (FFP), and platelet units transfused; single-unit RBC transfusions; pretransfusion hemoglobin levels; elective surgery patients anemic at admission; product and activity-based costs of transfusion; in-hospital mortality; length of stay; 28-day all-cause emergency readmissions; and hospital-acquired complications.

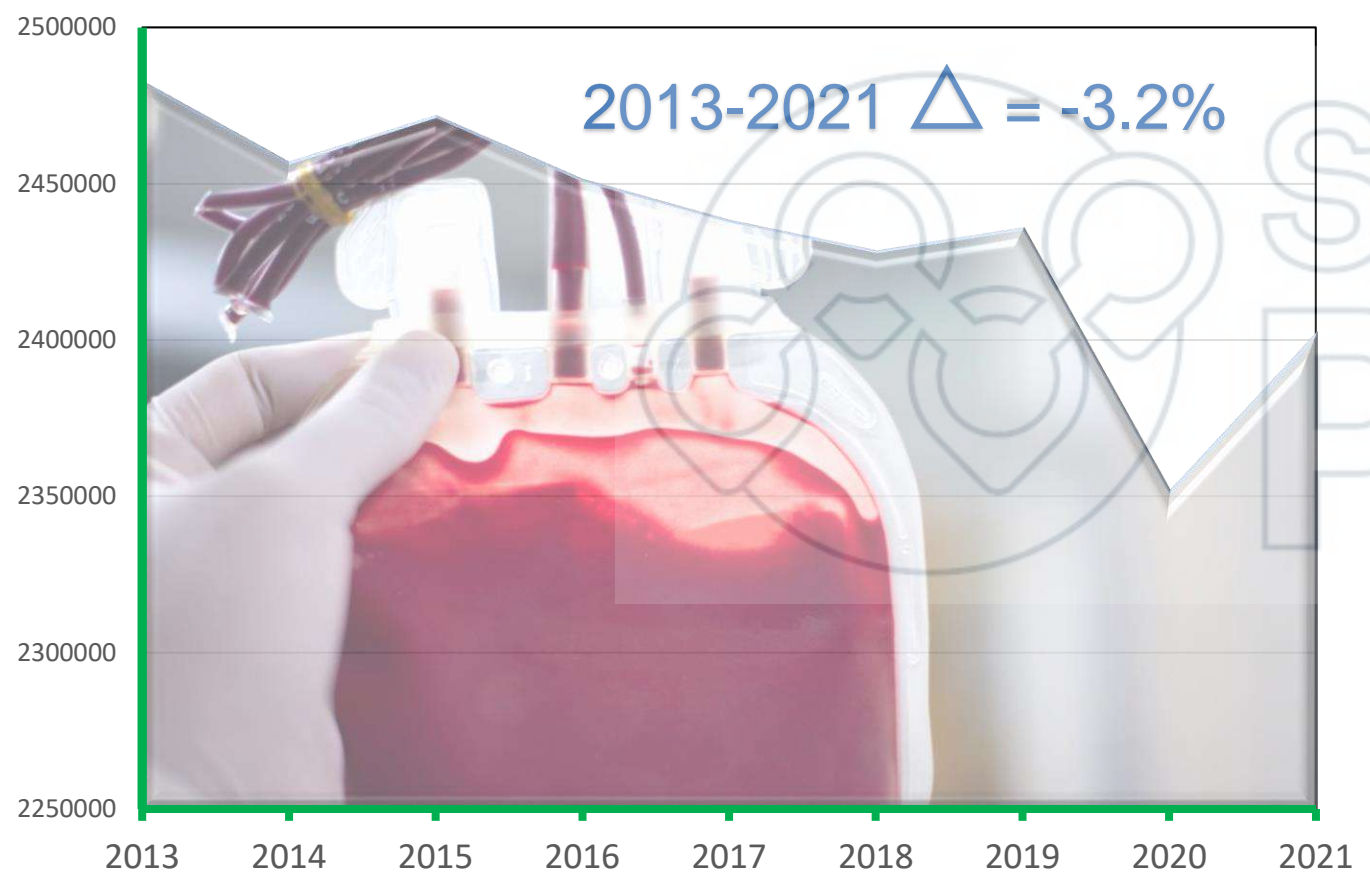
RESULTS: Comparing fiscal year with baseline, units of RBCs, FFP, and platelets transfused per admission decreased 41% (p < 0.001), representing a saving of AU\$18,507,002 (US\$16,076,298) and between AU\$80 million and AU\$100 million (US\$75 million and US\$97 million) estimated activity-based savings. Mean pretransfusion hemoglobin levels decreased 7.9 g/dL to 7.3 g/dL (p < 0.001), and anemic elective surgery admissions decreased 20.9% to 14.4% (p < 0.001). Single-unit RBC transfusions increased from 33.3% to 63.7% (p < 0.001). There were risk-adjusted reductions in hospital mortality (odds ratio [OR], 0.72; 95% confidence interval [CI], 0.67-0.77; p < 0.001), length of stay (incidence rate ratio, 0.85; 95% CI, 0.84-0.87; p < 0.001), hospital-acquired infections (OR, 0.79; 95% CI, 0.73-0.86; p < 0.001), and acute myocardial infarction/stroke (OR, 0.69; 95% CI, 0.58-0.82; p < 0.001). All-cause emergency readmissions increased (OR, 1.06; 95% CI, 1.02-1.10; p = 0.001).

CONCLUSION: Implementation of a unique, jurisdiction-wide PBM program was associated with improved patient outcomes, reduced blood product utilization, and product-related cost savings.



The Italian recipe (law)

No. of transfused RBCs units



A survey on the implementation of Patient Blood Management programs in Italy

Vanessa Agostini¹, Francesca Masiello², Stefania Vaglio³, Eva Veropalumbo⁴, Ursula La Rocca², Simonetta Pupella², Vincenzo De Angelis²

Blood Transfus 2023; doi: 10.2450/BloodTransfus.724

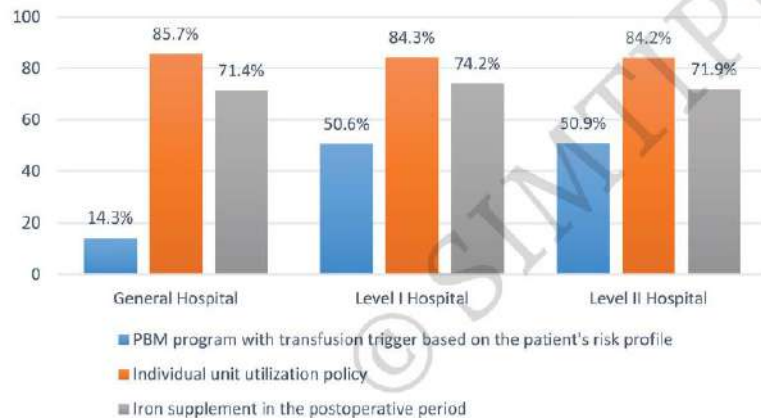
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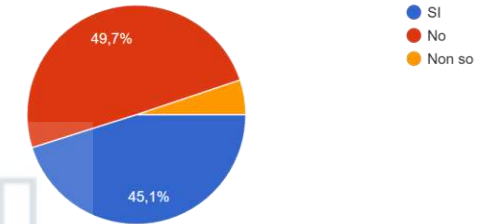


Table I - PBM implementation data in General, Level 1 and Level 2 Hospital related at 2018 year

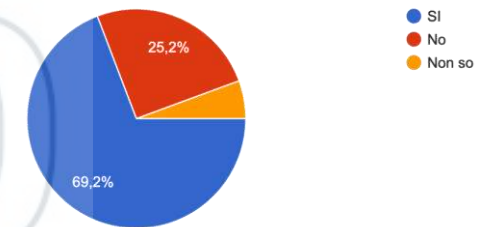
Implementation items	General Hospital (%)	Level 1 Hospital (%)	Level 2 Hospital (%)	Mean and SD
General management of PBM program				
PBM WG creation	71.4	79.8	77.2	76.1±4.3



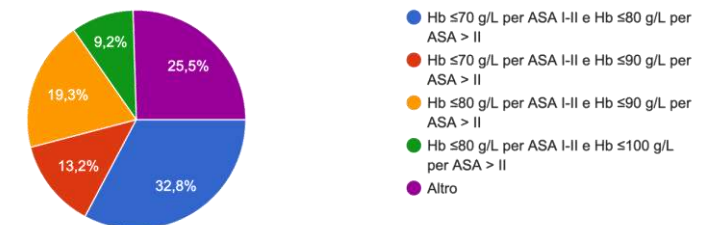
Nel vostro Ospedale esiste un protocollo di patient blood management (PBM) per la chirurgia digestiva maggiore condiviso tra chirurghi, anestesisti...realizzato con la direzione strategica (i.e. PDTA)?
370 risposte



Esiste una strategia/protocollo di soglie trasfusionali?
357 risposte



In caso di risposta affermativa al quesito precedente, specificare le soglie (una sola risposta consentita):
357 risposte



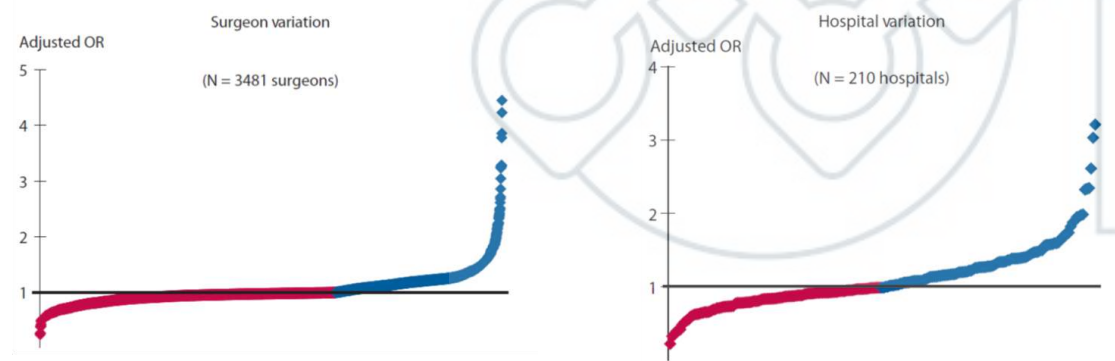
PBM implementation: a worldwide issue?

Large Variation in Blood Transfusion Use After Colorectal Resection: A Call to Action




Christopher T. Aquina, M.D.¹ • Neil Blumberg, M.D.² • Christian P. Probst, M.D.¹
 Adan Z. Becerra, B.A.¹ • Bradley J. Hensley, M.D., M.B.A.¹ • Katia Noyes, Ph.D., M.P.H.¹
 John R. T. Monson, M.D.¹ • Fergal J. Fleming, M.D.¹

Dis Colon Rectum 2016; 59: 411–418
 DOI: 10.1097/DCR.0000000000000588
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World Health Organization. (2021).
<https://apps.who.int/iris/handle/10665/346655>.
 License: CC BY-NC-SA 3.0 IGO



POLICY BRIEF

THE URGENT NEED TO IMPLEMENT PATIENT BLOOD MANAGEMENT

- **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

ERAS & PBM: false friends?

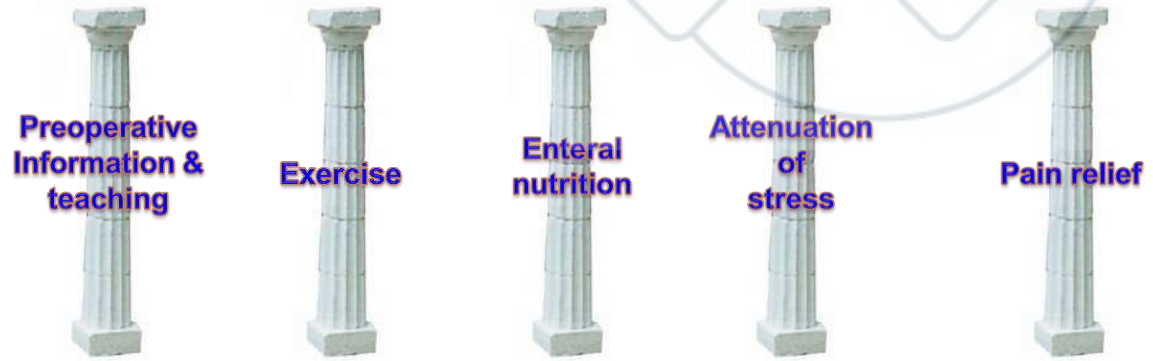
Both are evidence-based, patient-centered, multidisciplinary and multimodal strategies

Mandatory by law: **NO**
Guidelines available since: **2003**
Bottom-up initiatives: **rich**



Mandatory by law: **YES**
Guidelines available since: **2013**
Bottom-up initiatives: **poor**

ERAS 5 pillars



PBM 3 pillars



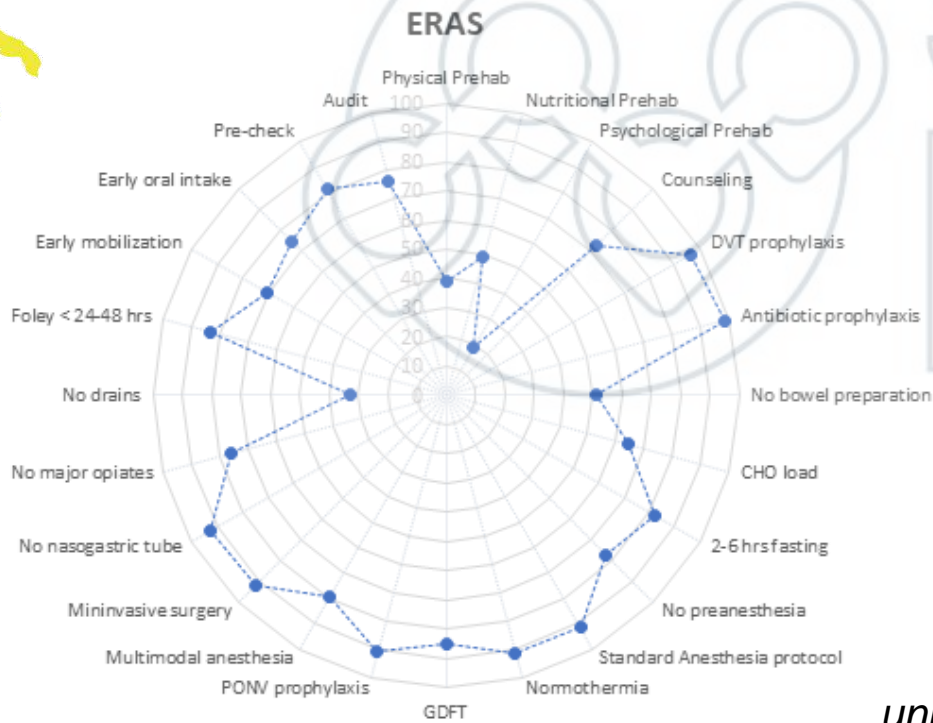
italian Colorectal anastomotic leakage (iCral™) study group



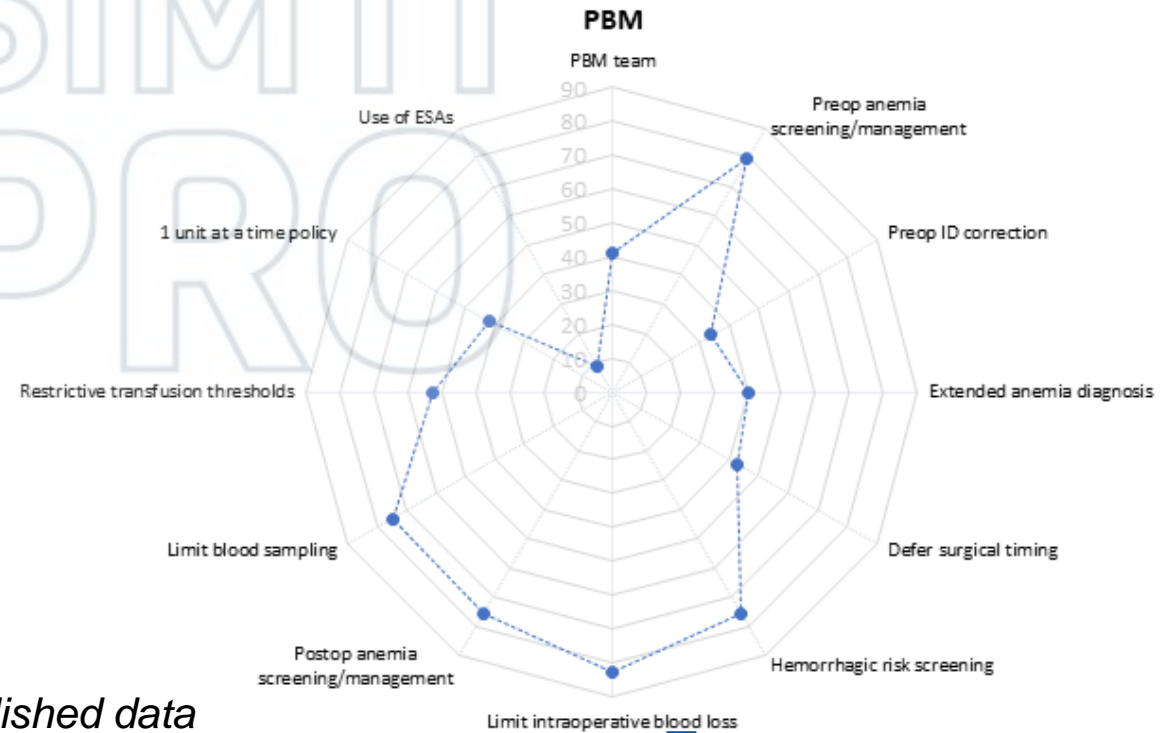
iCral 4: ERAS & PBM prospective study 2022-23 60 centers, 3,544 enrolled colorectal resections



Median adherence 75%



Median adherence 45%

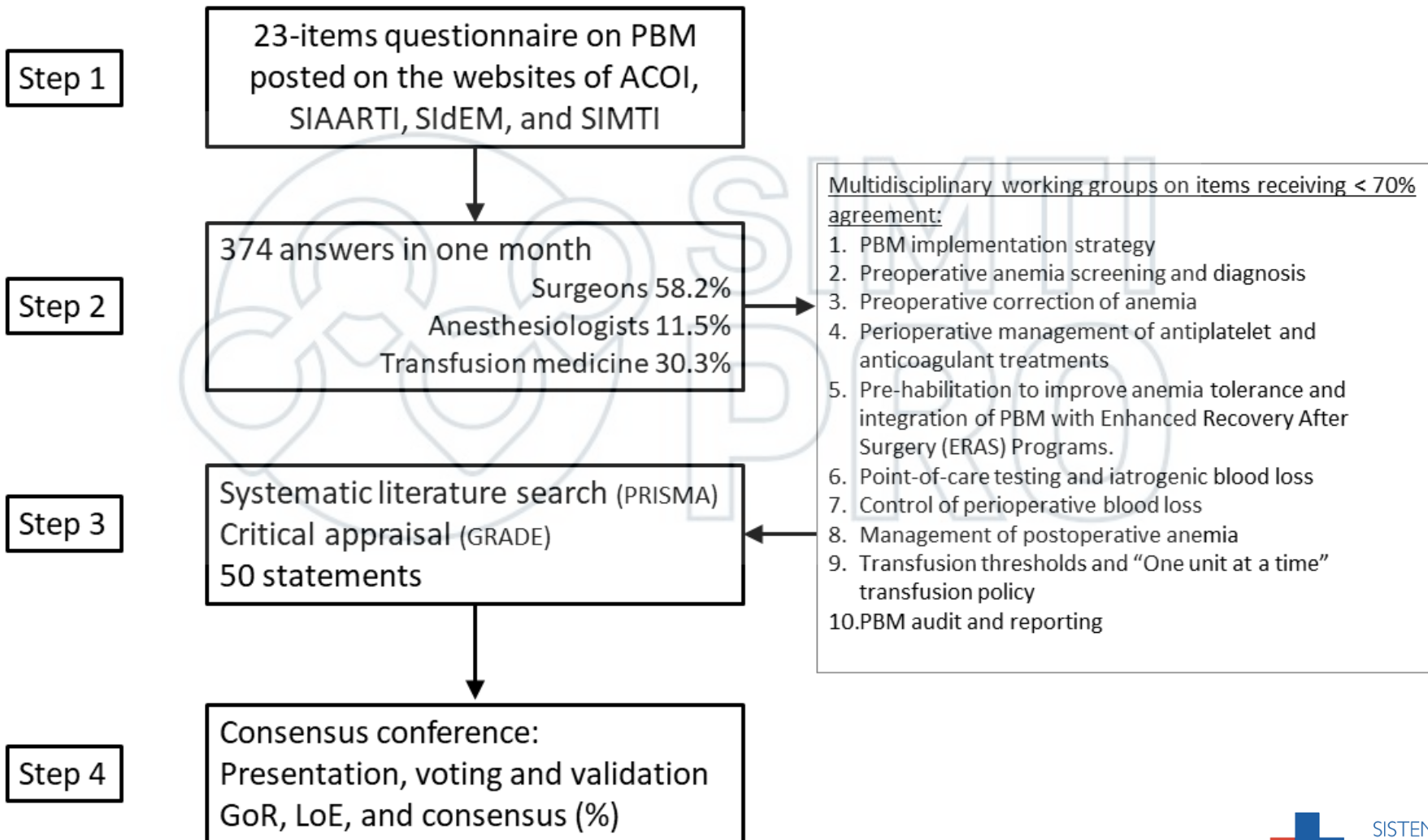


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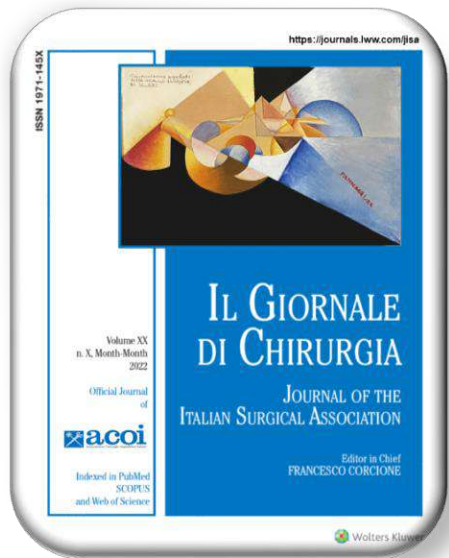


Consensus conference multisocietaria 2023 « Patient Blood Management in chirurgia digestiva maggiore »

January 2023



December 2023



IL GIORNALE DI CHIRURGIA JOURNAL OF THE ITALIAN SURGICAL ASSOCIATION

Original Article

OPEN

Patient blood management in major digestive surgery

Recommendations from the Italian multisociety (ACOI, SIAARTI, SIdEM, and SIMTI) modified Delphi consensus conference

Marco Catarci^{a,*}, Luigi Tritapepe^b, Maria Beatrice Rondinelli^c, Ivo Beverina^d, Vanessa Agostini^e, Filippo Buscemi^f, Marco Amisano^g, Grazia Maria Attinà^h, Gabriele Baldiniⁱ, Alessandro Cerutti^j, Cinzia Moretti^k, Rossella Procacci^l, Sergio D'Antico^m, Gabriella Errigoⁿ, Gianandrea Baldazzi^o, Massimiliano Ardu^p, Michele Benedetti^q, Roberta Abete^r, Rosa Azzaro^s, Paolo Delirio^t, Valeria Lucentini^u, Paolo Mazzini^v, Loretta Tessitore^w, Anna Chiara Giuffrida^x, Chiara Gizzi^y, Felice Borghi^z, Paolo Ciano^{aa}, Simona Carli^{ab}, Stefania Iovino^{ac}, Pietro Carmelo Manca^{ad}, Paola Manzini^{ae}, Silvia De Franciscis^{af}, Emilia Murgi^{ag}, Federica Patrizi^{ah}, Massimiliano Di Marzo^{ai}, Riccardo Serafini^{aj}, Soraya Olana^{ak}, Ferdinando Ficari^{al}, Gianluca Garulli^{am}, Paolo Trambaiolo^{an}, Elisabetta Volpato^{ao}, Leonardo Antonio Montemurro^{ap}, Luigi Coppola^{aq}, Ugo Pace^{ar}, Daniela Rega^{as}, Mariano Fortunato Armellino^{at}, Massimo Basti^{au}, Vincenzo Bottino^{av}, Giovanni Ciaccio^{aw}, Gianluigi Luridiana^{ax}, Pierluigi Marini^{ay}, Francesco Nardacchione^{az}, Vincenzo De Angelis^{ba}, Antonino Giarratano^{bb}, Angelo Ostuni^{bc}, Francesco Fiorini^{bd}, Marco Scatizzi^{be}

Patient blood management in major digestive surgery in Italy: the time has come....

Vincenzo De Angelis^{a,*}, Ursula La Rocca^b

44 Healthcare professionals

4 Scientific societies

93-100% consensus

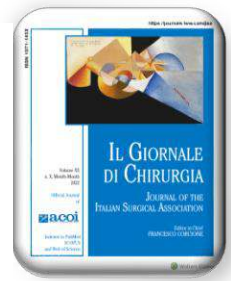
21 GoR «A» statements

27 GoR «B» statements

2 GoR «C» statements

Patient blood management in major digestive surgery

Recommendations from the Italian multisociety (ACOI, SIAARTI, SIdEM, and SIMTI) modified Delphi consensus conference



Patient Blood Management in chirurgia digestiva maggiore
Raccomandazioni della Consensus Conference multisocietaria
(ACOI, SIAARTI, SIdEM, SIMTI)



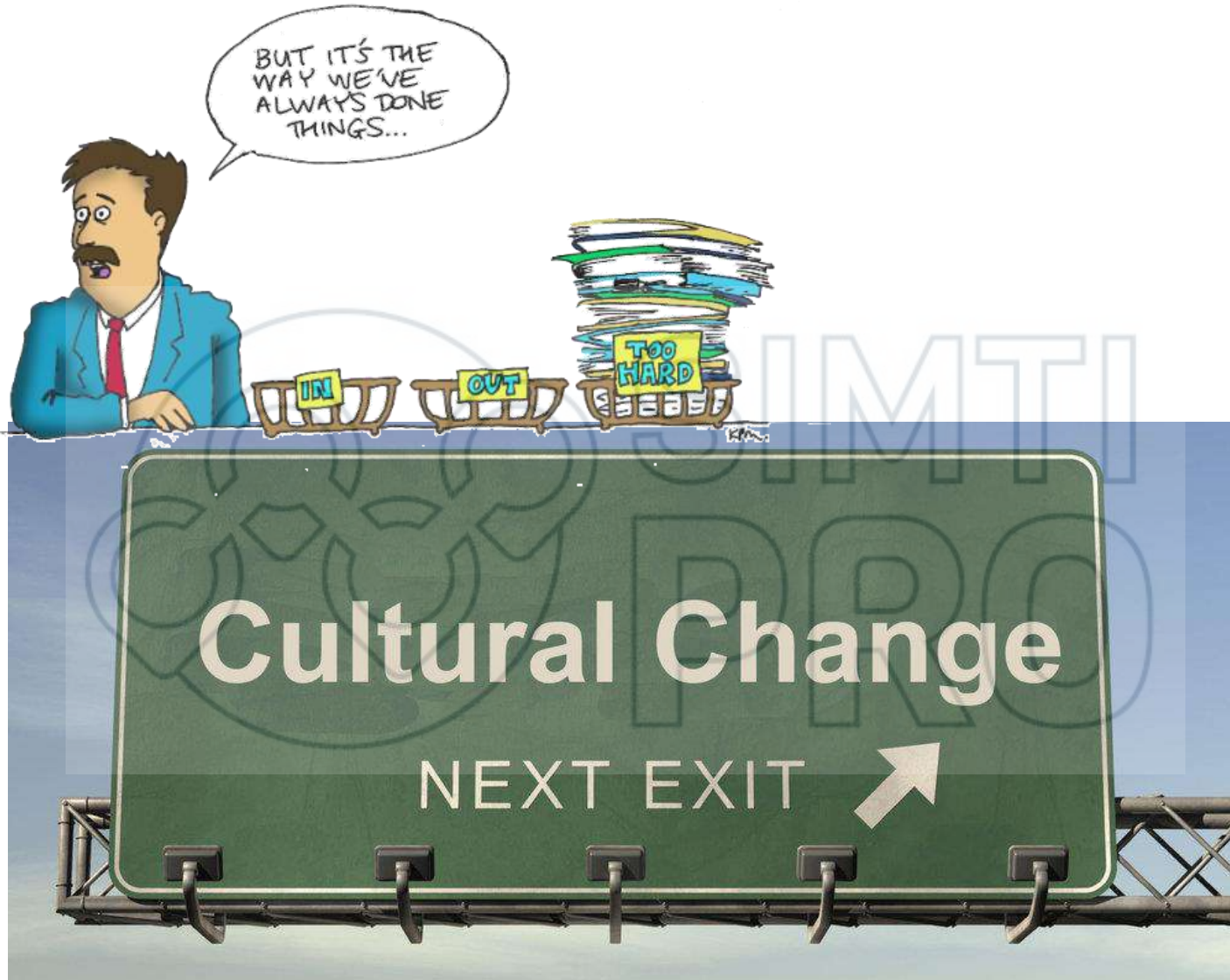
Guida tascabile di riferimento per il clinico



Estratto da: Catarci M, Tritapepe L, Rondinelli MB, et al.
G Chir – JISA 2024; 44(1):e41.

1. Multiplicating bottom-up local implementation
2. Funding of implementation (i.e. case-manager enrollment) and clinical audit
3. Stimulating clinical research on gray areas (GoR «B-C» statements)
4. Stimulating consensus statements in other surgical specialties (i.e. cardiovascular, thoracic, Ob-Gyn)
5. Creating a «good perioperative practice» synergic bundle:

«ERAS + PBM + HAIs prevention»



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