

# Cooking Patient Blood Management Implementation

Chair: Maria Beatrice Rondinelli y Jens Meier

Thursday 18<sup>th</sup> of April, 2024

## 1. THE LUSOPHONE SAUCE

Diana Castro Pauperio

At the annual meeting of the Society for the Advancement of Blood Management (SABM) in 2022, the co-participation between several Portuguese-speaking countries was approached to foster the development and implementation of Patient Blood Management (PBM).



Portugal



Brazil



Cape Verde



Angola



Guinea-Bissau



Equatorial Guinea



Mozambique

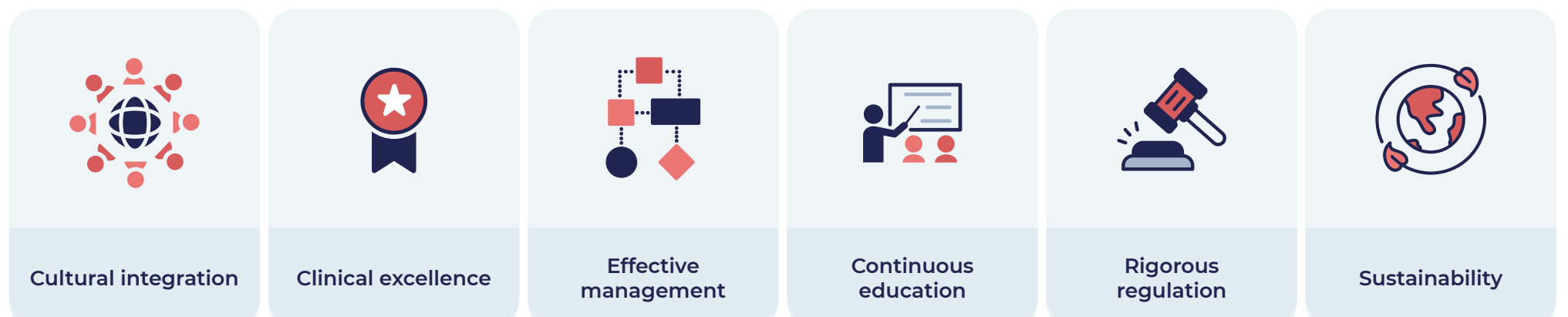


São Tomé and Príncipe

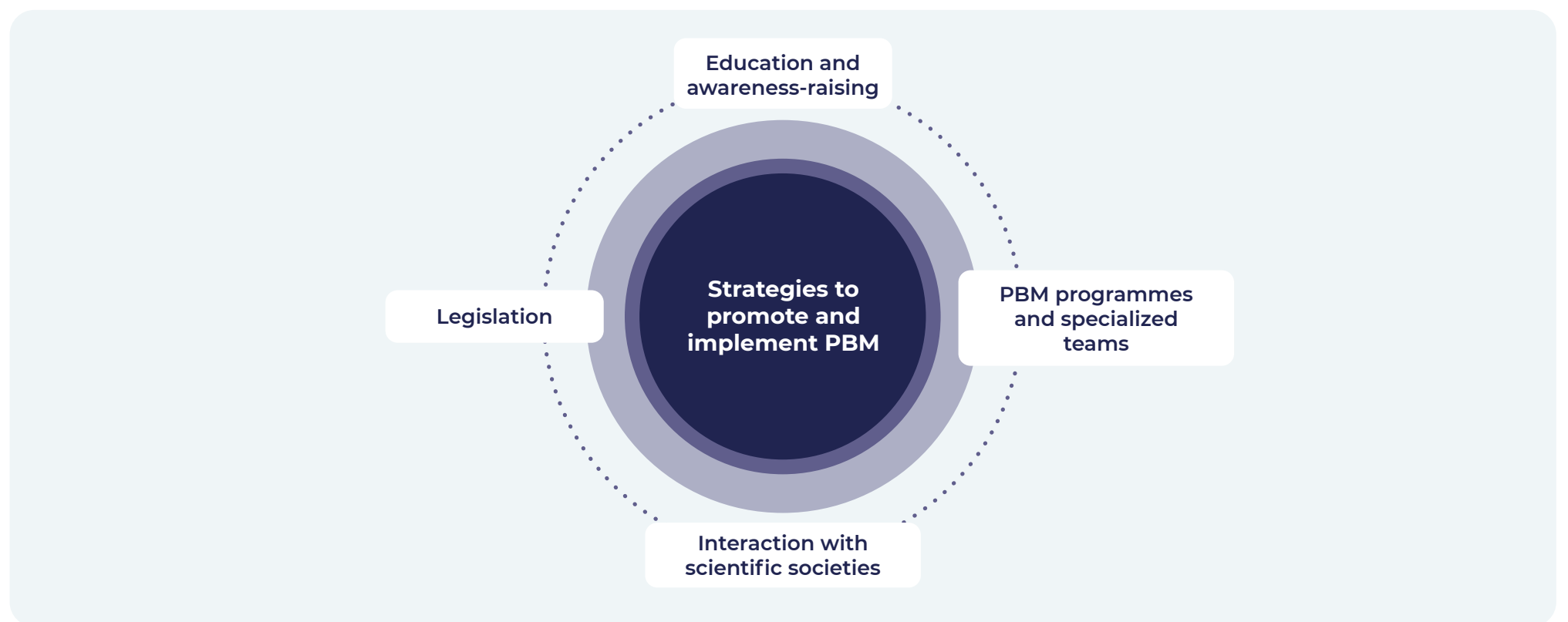


East Timor

This cooperation is based on a number of shared values:

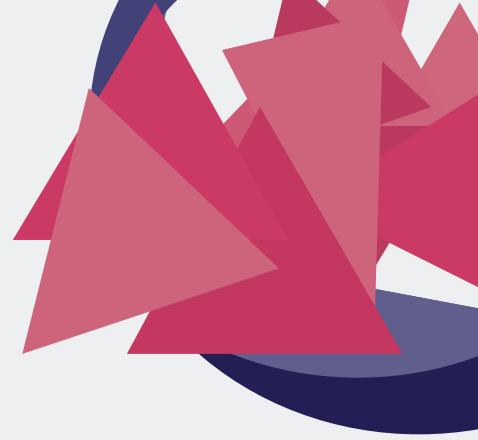


The promotion and implementation of PBM in Brazil and Portugal is being done through a number of common strategies:



The goals of the Brazilian-Portuguese coalition going forward emerge from the challenges ahead, which are the following:

- Cooperation between countries through shared experiences, results, and scenarios in clinical practice. Also through training on how to adapt PBM to the circumstances of each country.
- Expansion to other Portuguese-speaking countries.
- Promotion of education through continuous training platforms for healthcare professionals.
- Data gathering on common clinical practice.
- Assessing the impact of PBM in the life of patients: CROM, PROM, and PREM.
- Clinical innovation, that is, integrating state-of-the-art practices into patient treatment protocols.



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## 2. PATIENT BLOOD MANAGEMENT IMPLEMENTATION COOKBOOK IN MAJOR DIGESTIVE SURGERY (LAW)

Marco Catarci

The implementation of PBM in Italy started after resolution WHA63.15 was published by the World Health Organization. In 2015, after that resolution, the Italian Ministry of Health passed decree 2: *Disposizioni relative ai requisiti di qualità e sicurezza del sangue e degli emocomponenti*<sup>1</sup>, stating the need to define and implement PBM programmes throughout the country based on the guidelines published by the Centro Nazionale Sangue<sup>2</sup>. Moreover, the document with *Recommendations for the implementation of PBM in elective major orthopedic surgery* was published.

The results obtained from these initiatives amounted to a 3.2% decrease of transfused red blood cell units. In Australia, where PBM was not implemented by law but thanks to a 4.5 million Australian dollar investment, during a similar time period (2008-2014), a 41% decrease was achieved.

When interpreting these differences, it must be taken into account that the potential to improve peri-operative results of PBM is strictly linked to overall adherence and compliance. Therefore, disengagement and non-compliance are significant factors for failing PBM results.

A recent prospective study on the effect of adherence to PBM and ERAS — *Enhanced Recovery After Surgery*, multifactor, multidisciplinary, evidence-based peri-operative care initiative pursuing a better, earlier patient recovery after surgery—programmes after colorectal surgery sheds some light to this regard<sup>3</sup>.

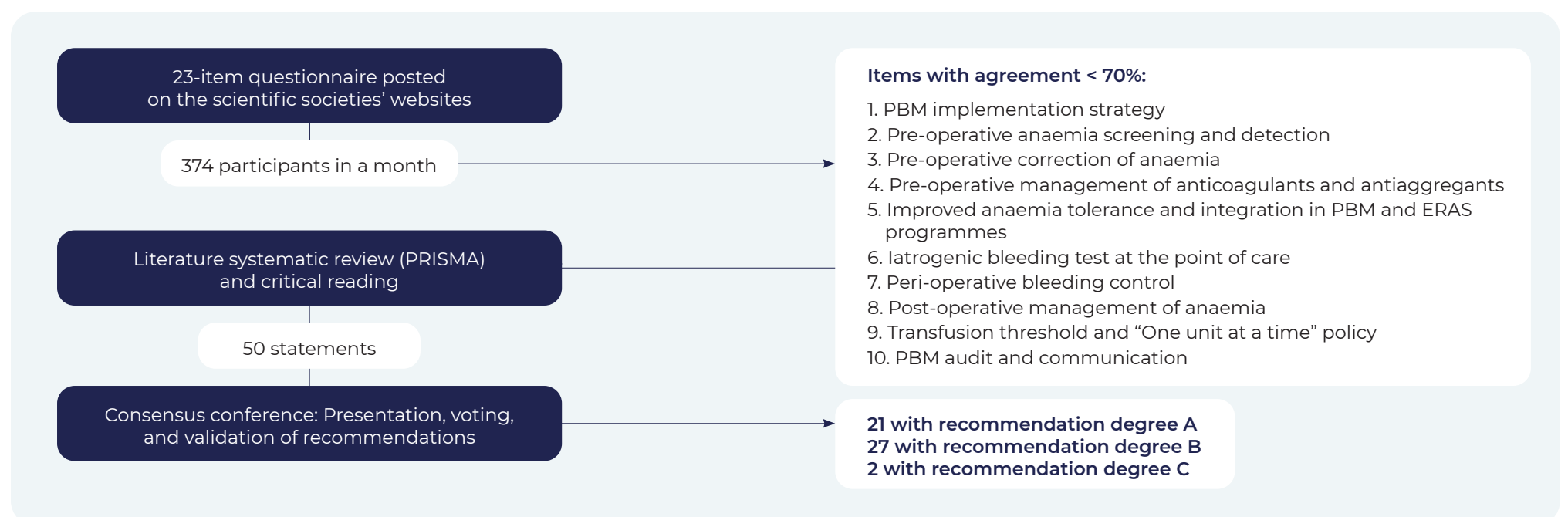
It must be noted that ERAS programmes development started in 2003, their compliance is not mandatory by law, and are based on 5 pillars—pre-operative information, physical exercise, stress mitigation, and pain relief.

PBM programmes are more recent (2013), are based on 3 pillars — anaemia treatment, blood loss minimization, and tolerance to anaemia. Their compliance is not mandatory either, but adherence to PBM is much lower than adherence to ERAS programmes.

60 sites participated and over 3,500 patients were recruited in Italy in the iCral 4 study — Italian Colorectal Anastomotic Leakage. This study showed that the average adherence to PBM is 45%, whereas adherence to ERAS is 75% (unpublished data).

CHARACTERISTICS	ERAS	PBM
Evidence-based	✓	✓
Patient-focused	✓	✓
Multidisciplinary	✓	✓
Multimode strategy	✓	✓
Mandatory by law	✗	✓
Available guidelines	✓	✓
Bottom-up initiatives	✓	✗

For these reasons, four relevant Italian scientific societies—Associazione Chirurghi Ospedalieri Italiani, ACOI; Società Italiana di Anestesia, Analgesia, Rianimazione e Terapia Intensiva, SIAARTI; Società Italiana di Emaferesi e Manipolazione Cellulare, SIdEM, and Società Italiana di Medicina Trasfusionale e Immunoematologia, SIMTI — have worked together and recently published a consensus document on PBM in the field of major digestive surgery<sup>4</sup>. 44 professionals have participated, and 50 recommendations have been put forward:



The consensus document draws future state-wide action lines with regard to PBM in major digestive surgery:

1. Multiplying local-level bottom-up implementation
2. Implementation funding and audits
3. Promotion of research in grey areas (degree of recommendation B or C)
4. Promotion of consensus publication for other surgical specialties
5. Creation of a synergy package of “peri-operative best practices”, including ERAS, PBM, and the prevention of infection associated with the healthcare system

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## 3. THE FRENCH SAUCE (FINANCE)

Sigismund Lasocki

In France, the national healthcare system adopted in 2005 a payment system on a performed activity basis, by which hospitals are paid for their activity vis-à-vis homogeneous patient groups. The implementation of PBM programmes was difficult in the framework of payment per activity and not based on quality.

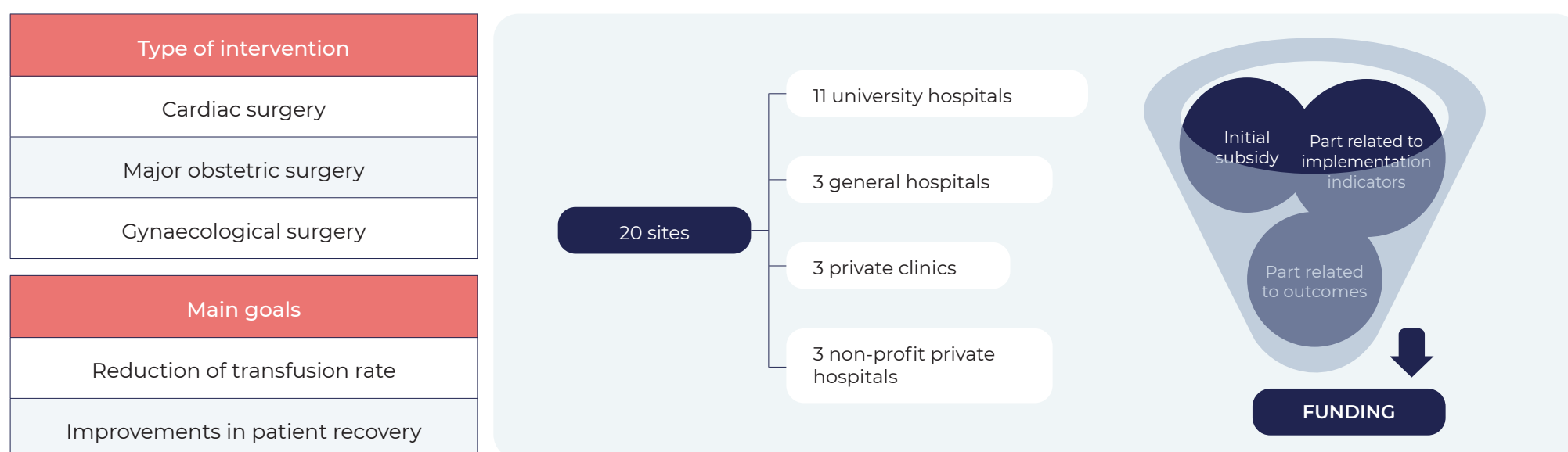
In 2018, the PBM White Book was published in France, promoted by scientific societies of anaesthesiology (SFAR) and transfusion medicine (SFVTT). Seven out of its ten goals were addressed at adopting best medical practices to realize all 3 pillars of PBM — one to include PBM in ERAS programmes; one to create medical directors in charge of PBM coordination at each organization, and one to stress the assessment of financial incentives for the implementation of PBM<sup>5</sup>. This initiative was submitted to many relevant public agencies and assigned public organizations.

In 2023, the results of the PERIOPES observational study were published, assessing the presence of pre-operative anaemia or iron deficiency in over 2000 patients recruited in 16 sites. The study revealed that 34% of patients undergoing surgery suffered from pre-operative anaemia or iron deficiency, and that less than 30% had been treated<sup>6</sup>. The same year, another study was published seeking to analyse the cost difference in healthcare with and without PBM. Pooling data from over 980,000 patients, the study determined that PBM implementation may provide yearly savings beyond 1 billion euros from the perspective of the French healthcare system, as well as over 180,000 red blood cell units every year<sup>7</sup>.

In order to fund and promote organizational innovation for the transformation of the French healthcare system, Article 51 LFSS 2018 was launched in 2018. This article aims at contributing to an improved patient journey with regard to the healthcare service provided, the efficiency of the healthcare system, access to healthcare, and the relevance of prescribed treatments. Thanks to this initiative, PBM implementation is organized around 3 types of surgery — cardiovascular, orthopedic, and gynaecological, — through an interim financial incentive.

In parallel, over the last few years, national guidelines have been developed, approaching PBM implementation through cooperation between healthcare authorities, scientific societies, and patient associations<sup>8,9</sup>.

PBM implementation experimentation through alternative funding, as promoted by Article 51, encompasses three types of interventions and 2 main objectives, and involves 20 different organizations:



Funding is subject to the evaluation of implementation and follow-up indicators, which currently represent, respectively, 37% and 63% of just under 3 million euros in funding.

In summary, PBM implementation experience in France has shown that both the creation of knowledge between stakeholders and the development of recommendations are strictly necessary. Furthermore, the country has chosen funding based on the quality of healthcare and the improvement of the patient experience in terms of healthcare.



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## 4. NORDIC COUNTRIES: STILL AT ANTIPASTI

Agneta Wikman

In 2015, 43 transfusions of red blood cells were performed in Sweden per 1,000 inhabitants, a much higher figure than that of the Netherlands or Australia. In 2022, this figure went down to 34 / 1,000 inhabitants. In Finland, Denmark, and Norway, Nordic countries with similar healthcare systems to the Swedish one, the figures were relatively lower<sup>10</sup>.

A great variability is observed in the number of transfusions per 1,000 inhabitants among the different Swedish regions, including significant differences between the northern and southern regions.

A descriptive nation-wide cohort study analysed the data obtained from the *Scandinavian Donations and Transfusions database (SCANDAT3-S)* between 2008 and 2017. In that study, the use of red blood cell units decreased from 53 in 2008 to 39 in 2017. This reduction came in the wake of international trends, although no specific national intervention was performed. It was also described that 44% of all red blood cell units used in the country were administered to patients who received two units or less during their hospital stay, which means that a significant fraction of transfusions could be avoided with little or no risk for the patients. It was also observed that the highest red blood cell and plasma transfusion rates in women between 20 and 45 occurred in an obstetric setting, whereas the most frequent indication for men in the same age group were traumas. Transfusion rates after the age of 45-50 were higher in males, probably due to their higher disease burden<sup>11</sup>.

In another specific study with obstetric population, the transfusion of two units was the most frequent one, which suggests that most transfusions were performed in hemodynamically stable patients who nonetheless suffered from anaemia. The same study observed a significant intra-hospital variability in the rate of deliveries with transfusions, regardless of the level and hospital type<sup>12</sup>. Such intra-hospital variability was also observed in the ICU transfusion rate throughout the country<sup>13</sup>.

The above results may be a consequence of the low management rate of pre-operative anaemia, when compared to seven other European countries<sup>14</sup>. However, data prove that pre-operative anaemia is a predictive factor independent from transfusion and longer hospital stays.

A summary of the current situation and required future steps in Sweden follows:

Current situation	Future requirements
Progress in terms of PBM is slow	Higher clinical commitment
Many disciplines involved	Higher awareness on all of them
Roles are not very clear in pre-operative management	Training activities Committees Guidelines focused on specific patient groups — age, comorbidities, cancer diagnoses, palliative care, etc.
	Cost-effectiveness studies are important

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