

# Speed up your patient's blood management with autologous platelets and hemostasis management system

Sponsored by i-Sep and HemoSonics International

Chair: Donat Spahn

Friday 21<sup>st</sup> of April 2023

## 1. PATIENT BLOOD MANAGEMENT: LATEST GUIDELINES

Donat Spahn

The reasons for which Patient Blood Management (PBM) is so important are collected in the WHO document *The urgent need to implement patient blood management*, published in 2019<sup>1</sup>. Currently, there are several clinical practice guides approaching all three pillars of PBM and summarizing the evidence backing its implementation.

**The three pillars of PBM are backed by robust evidence and by top-level recommendations from international scientific societies.**

### 2022 ESC Guidelines on cardiovascular assessment and management of patients undergoing non-cardiac surgery<sup>2</sup>

- Se recomienda tratar la anemia antes de la cirugía no cardíaca para reducir la necesidad de la transfusión de hematíes durante la cirugía (Nivel IA).
- In surgery patients with expected blood losses of 500 ml or more, cell salvage is recommended (Level IA)
  - Cell salvage significantly decreases the number of red blood cell transfusions, as well as the hospital stay, among other parameters, and it also improves the clinical outcome<sup>3</sup>. As for the drawbacks, it is not applicable to non-sterile environments and it does not have any coagulation potential. However, retransfusion of both red blood cells and platelets is now possible thanks to the development of new cell salvage devices<sup>4</sup>.
- When diagnose systems are available at the point of care, they are recommended as a guide to therapy with blood products (Level IA) ➡ **The evidence and recommendation level IA implies that all hospitals should have these systems available.**

### STS/SCA/AmSECT/SABM Update to the Clinical Practice Guidelines on Patient Blood Management<sup>5</sup>

- Routine use of cell salvage through centrifugation helps preserve blood in surgeries with cardiopulmonary bypass (Level IA).
- In patients undergoing cardiac surgery, a restrictive strategy of red blood cell allogeneic transfusion in the perioperative setting is recommended over a free transfusion strategy (Level IA).



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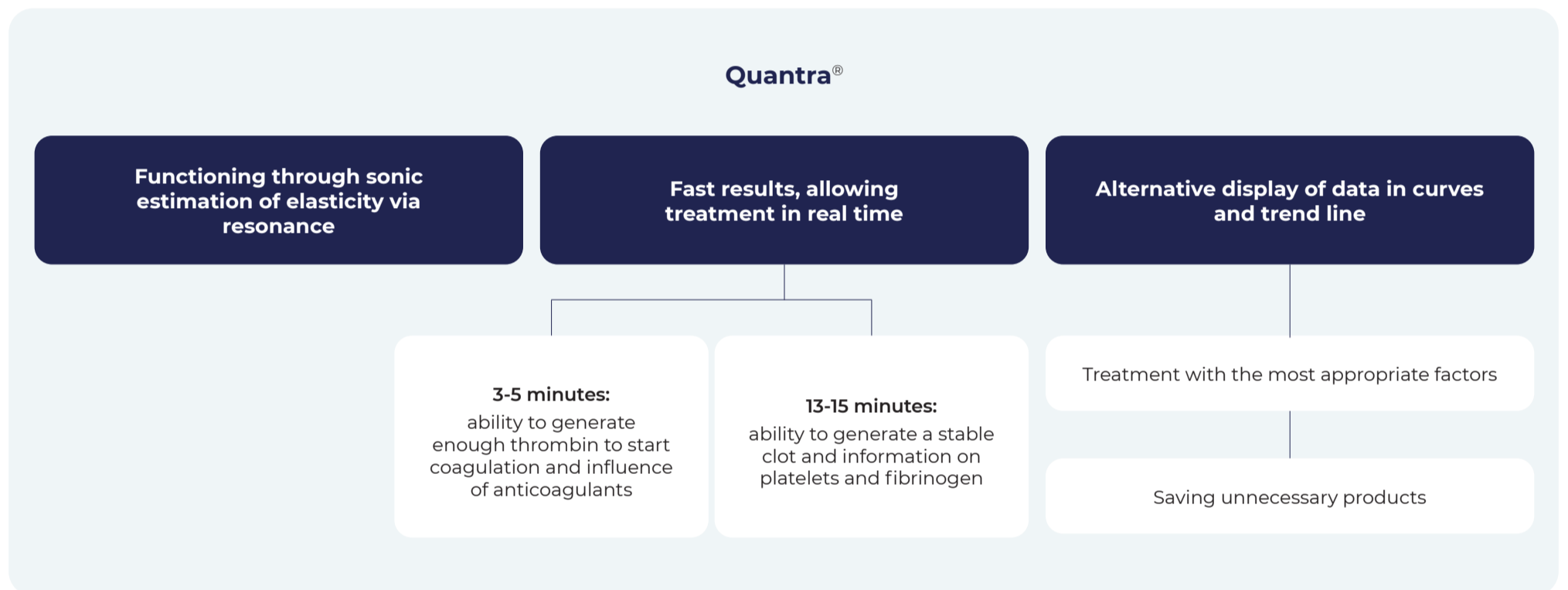
Friday 21<sup>st</sup> of April 2023

## 2. IMPLEMENTATION OF A NEW VET SYSTEM IN CARDIOTHORACIC SURGERY EXPERIENCE WITH THE QUANTRA

Pierre Tibi

When implementing PBM, every possible effort must be made to avoid a transfusion with allogeneic blood, given the consequences in terms of morbidity and mortality, as well as the associated costs<sup>6-8</sup>. This is why, as recommended by current guides, an assessment at the point of care through viscoelastometry must be integrated in action algorithms<sup>5</sup>.

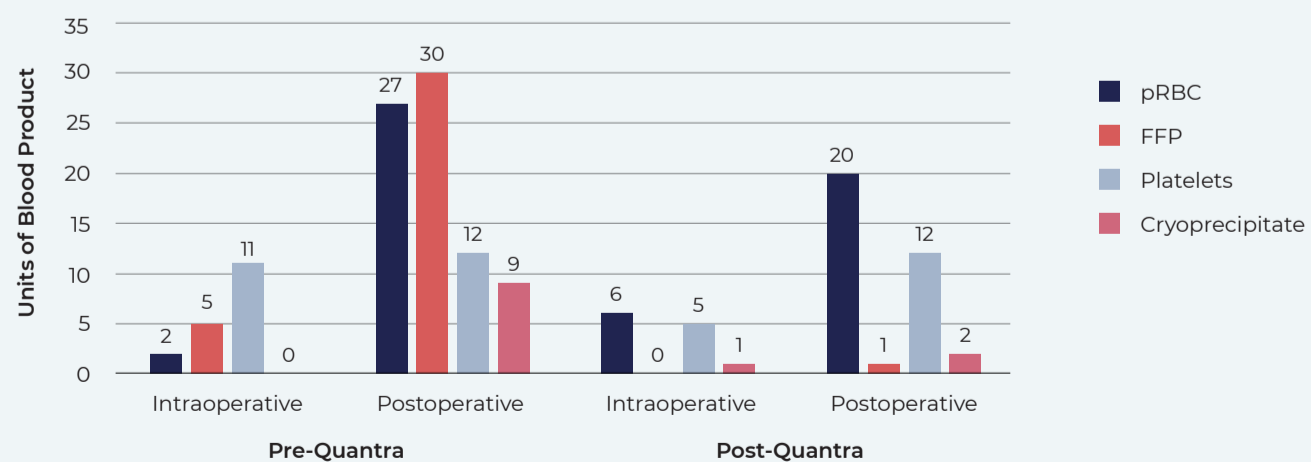
Viscoelastometry tests are an absolutely necessary tool for any hospital practicing cardiac surgery.



In a recent study, a change in the use pattern of blood products has been observed, resulting from the implementation of Quantra® and a specific algorithm, which eventually entails a reduction in the amount of products used and the associated costs<sup>9</sup>.

- ✓ Larger reduction of the use of fresh plasma concentrate (probably the most commonly administered product in settings without viscoelastometry, given its price).
- ✓ Sizeable decrease in units of cryoprecipitate, platelets, and red blood cells, yet not significant.
- ✓ Increase in the number of patients who required transfusion of a single blood product, and decrease of those who required one or more.
- ✓ Savings of 41% of the costs (more than 40,000 dollars, overall), resulting from 64 patients.

### Blood Products Utilized in the Intra- and Post-Operative Periods



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## 3. SAMETM BY I-SEP PLATELETS + ERYTHROCYTES: THE NEW INTRA-OPERATIVE CELL SALVAGE GAME CHANGER

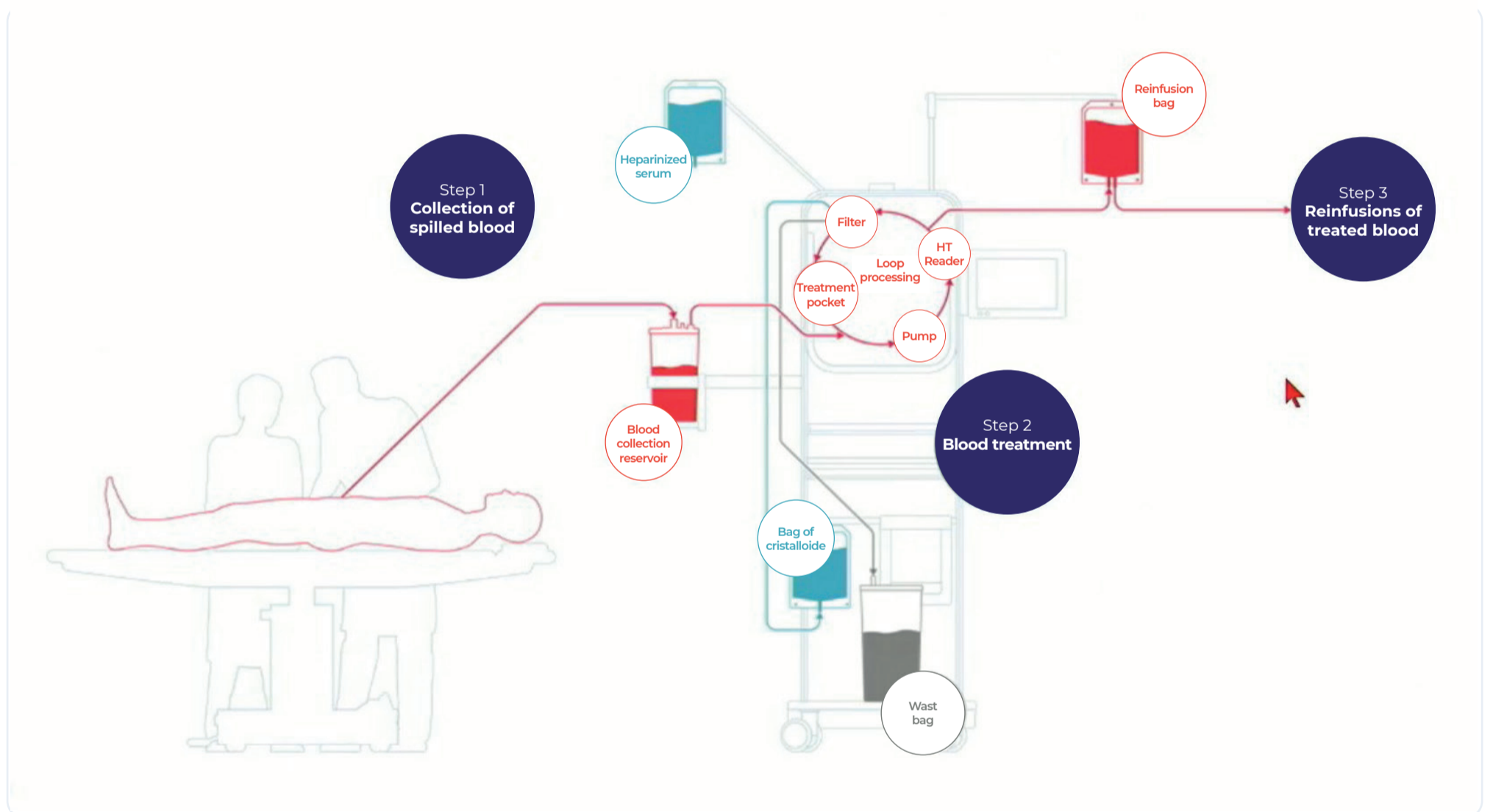
Bertrand Rozec

The implementation of a PBM program in the surgery service at the Institut du Thorax in Nantes University Hospital, together with an in-hospital communication & education program on PBM, yielded the following results:

<p>Reduction in the number of patients transfused between 2015 and 2020, mostly with red blood cells and frozen fresh plasma</p>	<p>Reduction of associated costs ↓ accumulated savings exceeding 13 million euros</p>	<p>Lower transfusion rate at the cardiac surgery service</p>	<p>Implementation of cell salvage in all ORs, as recommended by current guides<sup>10,11</sup></p>	<p>The utilization of platelets stayed stable for the period from 2015 to 2021, despite the lower use of red blood cells and frozen fresh plasma</p>
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The new cell salvage paradigm covers not only red blood cells, but also platelets.

In France, the i-SEP company developed an autotransfusion device based on the Same™ filtration, which allows salvaging both red blood cells and platelets, with an 88% and 37% performance, respectively\*. The system causes minimum platelet activation, but a strong response to thrombin stimulation.



A prospective multi-center study will assess its safety and the performance of the device in patients undergoing elective cardiothoracic surgery with risk of hemorrhage, most of them, anemic.

<p>Efficiency in salvaging of red blood cells, platelets, and leukocytes of 86%, 52%, and 90%, respectively</p>	<p>The washout efficiency of heparin, free hemoglobin, proteins, and triglycerides observed is 94 - 99%</p>	<p>No platelet activation has been observed, and so far, 38 cardiac surgeries with cardiopulmonary bypass have been performed</p>	<p>Better results with the Same™ system than with the Xtra™ system by LivaNova, in a series of 4 patients, in terms:</p>
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- Blood volumen lost in 48 hours
- Number of transfusions
- Days in the ICU
- Evaluation parameters of hemostasis via Quantra®

### FUTURE CHALLENGES:

<p>Developing prospective randomized controlled trials to compare cell salvage through centrifugation and through filtration.</p>	<p>Expansion of cell salvage to all kinds of patients undergoing cardiac surgery, and financial evaluation of using these devices.</p>
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