

ARTIGO DE PERSPECTIVA

The Safe Brain Initiative: A Call for Action

A Safe Brain Initiative: Um Apelo à Ação

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Most healthcare professionals and hospital administrators face a significant gap in acquiring systematic feedback on Patient-Reported Outcome Measures (PROMs).¹ PROMs encompass a broad range of patient-reported outcomes related to their experiences, symptoms, and functional outcomes following medical interventions, including anaesthesia and surgery. Integrating PROMs as an essential prerequisite for precision care allows healthcare providers to gather comprehensive information directly from patients about their experiences and outcomes, enabling personalised treatment decisions and interventions. This patient-centred approach enhances the quality of care by tailoring interventions, optimising treatment plans, and improving health outcomes based on a deeper understanding of the individual's needs and preferences.

PROMs should be obtained directly from the patients without further interpretation by the clinical team or anyone else. Ideally, these measures assess and categorise the patient's health, functional status, or consequences associated with anaesthesia, allowing a complete assessment of the quality and side effects of the perioperative care.²

The Safe Brain Initiative project³ aims to address this gap systematically by collecting and leveraging real-world health outcome data to monitor, visualise and improve patient-centred care and preventive outcomes. This initiative aims

to strengthen the perioperative health system by focusing on four main areas (Fig. 1):

1. MTo acquire patient-reported outcome measures (PROMs) and monitor and prevent POD/PND (SBI-Core).
2. To inform about the effective management of patient-centred anaesthetic care (SBI-Muda). The SBI-Muda project aims to improve OR efficiency, reduce POD/PND, and improve patient-reported outcomes. By providing weekly dashboard updates and feedback on OR and hospital metrics (e.g. starting time or delay, suture to incision time, time spent in the postanaesthesia care unit (PACU) and postoperative time spent in the hospital) and putting them into context with the individuals core outcomes.
3. Make visible the levels of satisfaction of the patient and the team with the perceived quality of care provided (SBI -Us).
4. Evaluate and decrease the sustainability impact (SBI-Green).



Figure 1. Four Focus areas of the Safe Brain Initiative

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With this 360° approach to this 4-level domain, the SBI aims to generate and harness real-world healthcare outcomes data to monitor, visualise and improve essential preventive patient-centred routine care and outcomes.

PROMS IN ANAESTHESIA

PROMs are particularly crucial in the field of anaesthesia compared to other specialities. This is because anaesthesia directly impacts the patient's immediate experience and outcomes during and after a surgical procedure. Among the common basic PROMs in the postoperative setting and of high relevance for the patient are postoperative pain, nausea and vomiting (PONV), thirst, stress and anxiety, general well-being and odynophagia (after airway manipulation). In addition, broader outcomes such as postoperative delirium (POD) and perioperative neurocognitive disorders (PND) are also important.²

Unfortunately, most of these outcomes are infrequently or superficially monitored.⁴ It is important to note that these patient-centred outcomes often occur at times when responsible healthcare professionals are not close to the patient. We overlook an essential requirement for continuous quality improvement and setting the stage for precision anaesthesia care by failing to include individual and local patient outcome data. Furthermore, the absence of structured and anonymous individual feedback prevents health professionals from obtaining a more realistic view of their approach's success. Ultimately, it also puts the main aim of anaesthesia back in focus, our patients. It is, therefore, essential to establish an adequate systematic evaluation and appropriate feedback mechanisms to ensure that these aspects are considered, allowing the learning curve to occur effectively and promoting continuous quality improvement.⁴ Assessing PROMs repetitively during the early postoperative period is fundamental for several reasons. The dynamic nature of recovery necessitates regular assessments to capture patients' evolving symptoms, pain levels, functional status, and overall well-being. By closely monitoring PROMs, healthcare providers can promptly detect any worsening symptoms or complications, allowing for timely interventions and optimised patient care. Additionally, repetitive assessments evaluate treatment effectiveness over time, ensuring that interventions produce the desired results and allowing for adjustments if needed. Based on the fluctuations in symptoms and recovery, this personalised approach to care planning enhances the precision and individualisation of patient care. Moreover, involving patients in the assessment process fosters engagement and empowers them to participate actively in their recovery. Regular assessments provide patients a platform to voice concerns, ask questions, and engage in shared decision-making.

In this way, the objectives of the Safe Brain Initiative are:

1. To provide an innovative, not-for-profit solution to allow anaesthesiologists, anaesthesia nurses and anaesthesia departments to access and view their patients' actual results and complications. In particular, SBI focuses on the systematic monitoring and prevention of postoperative delirium (POD) and perioperative neurocognitive disorders (PND), as well as negative patient-reported outcomes (PROs), especially in elderly and frail adults.
2. To provide teaching support for the routine assessment of the effects of applied, modified, or newly introduced prevention and/or treatment strategies. These effects will be reflected and compared with high-quality real-world data.
3. To create a solid foundation that allows healthcare professionals (both at an individual and departmental level) to embrace a continuous quality improvement process.

WHAT IS SBI?

The SBI is an evidence-based bundle of care to monitor and improve PROMs in Anaesthesiology and to prevent and reduce delirium (POD) and neurocognitive disorders (PND) in the perioperative period.

It is a 360° concept for implementing and operationalising real-world evidence, with a data-driven dashboard solution for systematic feedback to healthcare personnel, which includes:

1. Improvement of patient-centred outcomes;
2. Increase in efficiency of care (e.g total short, intermediate and long-term cost of care);
3. Increase in patient and staff satisfaction with received and provided care;
4. Evaluation and decrease of the sustainability index.

Such patient-centred models of care are generally cost-effective and improve outcomes when patients are genuinely involved in health decisions, having their preferences heard and acted upon. This results in better health, patients being more involved in their care, and lower costs.⁵⁻⁷

The Safe Brain Initiative has a care bundle with 18 core recommendations (see Fig. 2). All of these recommendations are non-invasive in nature, primarily aimed at detecting, preventing and reducing adverse outcomes such as:

- Postoperative delirium (POD)
- Postoperative neurocognitive disorders (PND)
- Postoperative nausea and vomiting (PONV)
- Perioperative stress
- Perioperative anxiety
- Inadequate pain/nociception
- Patient discomfort

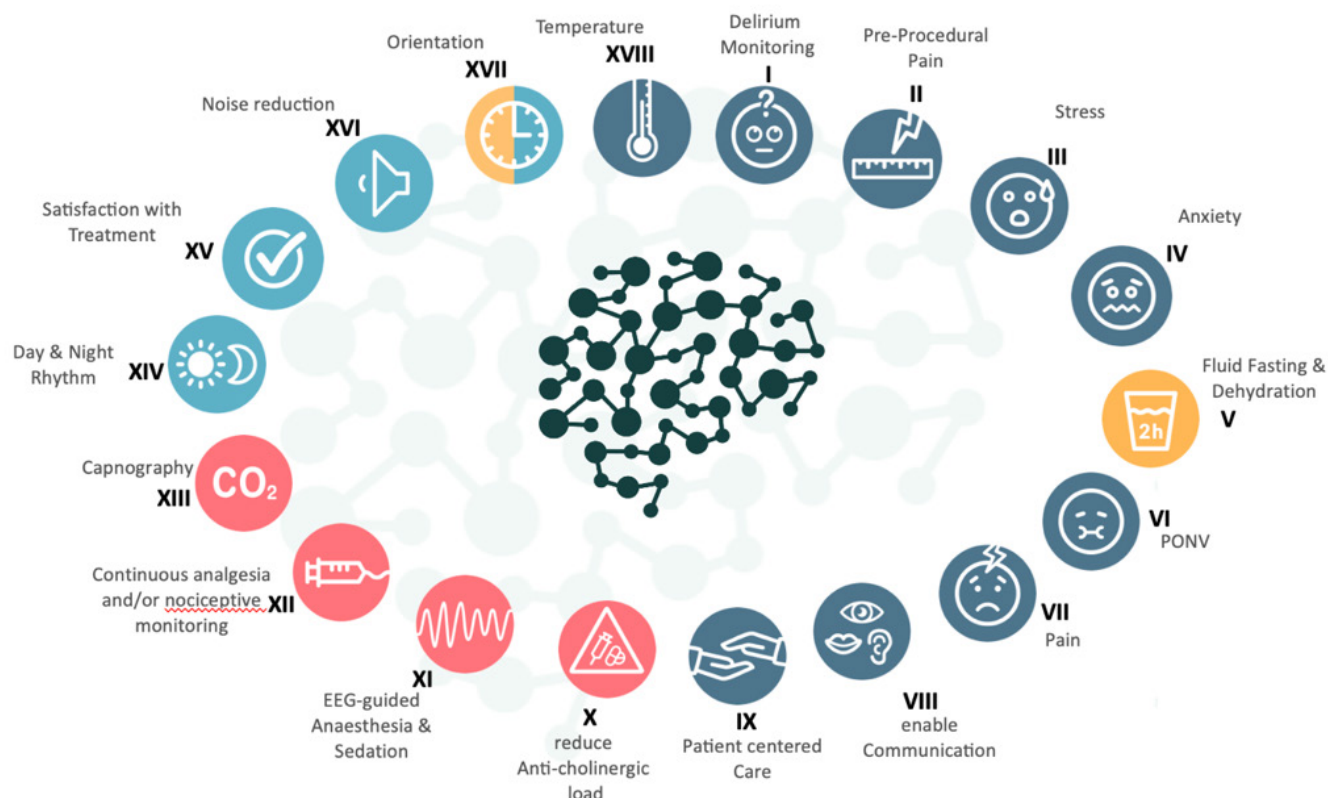


Figure 2. A multicompartment evidence-based approach: The 18 SBI Core recommendations

The 18 SBI Core recommendations:

1. Delirium monitoring: Implement measures to monitor and detect delirium in the perioperative period.
2. Preoperative pain: Address and treat pain before surgery to improve the overall patient experience.
3. Stress: Implement strategies to reduce perioperative stress and promote a more relaxed patient environment.
4. Anxiety: Recognize and address perioperative anxiety in patients through appropriate interventions and support.
5. Liquid fasting time: Reduce unnecessary fasting time before surgery.
6. Postoperative nausea and vomiting (PONV): Take steps to prevent and treat nausea and vomiting after surgery.
7. Postoperative pain: Evaluate and effectively treat postoperative pain.
8. Communication: Improve communication between healthcare professionals and patients, ensuring a clear and effective exchange of information.
9. Patient-centered clinical practice: Emphasize a patient-centred approach where the patient's preferences, needs, and values are considered and respected.
10. Anticholinergic influence: Consider the influence of anticholinergic medications on cognitive function and take steps to minimise their use where possible.
11. EEG monitoring: Monitor the patient's brain activity using electroencephalography (EEG) to detect and prevent adverse neurological events.
12. Continuous analgesics (remifentanyl): Use continuous analgesia techniques, such as remifentanyl, to effectively manage pain during and after surgery.
13. Use of capnography in sedated patients: Implement capnography under sedation to ensure adequate ventilation and detect possible complications.
14. Circadian rhythm: Consider the patient's circadian rhythm and incorporate strategies to support the natural sleep-wake cycle during the perioperative period.
15. Patient satisfaction: Measure and address patient satisfaction to improve the quality of care provided continually.
16. Noise: Minimize noise levels in the perioperative environment to promote a calmer and more comfortable patient atmosphere.
17. Orientation: Ensure patients are properly oriented in space and time during the perioperative period.
18. Temperature: Maintain proper perioperative temperature management to prevent hypothermia or hyperthermia and promote patient comfort.

All SBI interventions aim to reduce the iatrogenic burden on patients' postoperative outcomes. SBI recommendations, including interventions, are based on knowledge of international guidelines.⁸ These recommendations aim to improve the patient's experience in the perioperative period, reducing complications and promoting more positive results. Implementing these non-invasive measures contributes to safer, patient-centered perioperative care.

THE SBI PROJECT

SBI includes a platform for scientific and real-world benchmarking, best practice cooperation, and, ideally, positive competition for mutual growth at all levels described. The SBI includes a data-driven dashboard solution for systematic feedback to healthcare personnel (Fig. 3). Several hospitals in Denmark, Germany, Switzerland, Saudi Arabia, and Turkey are part of the network platform. The European Society of Anaesthesiology and Intensive Care (ESAIC) recently supported applying the Safe Brain Initiative as a Research Group within the Society.

high-quality perioperative care and promote positive patient outcomes. Implementing assessments of PROMs during the early postoperative period from several hospitals in a joint database signifies a mutual journey towards developing systematic approaches and elements aimed at achieving precision anaesthesia. It is important to recognise that the field is still in its early stages, and the integration of PROM assessments represents a significant step forward in advancing our understanding and practice of precision anaesthesia. We strive to continuously improve and refine the methodologies and elements in delivering personalised

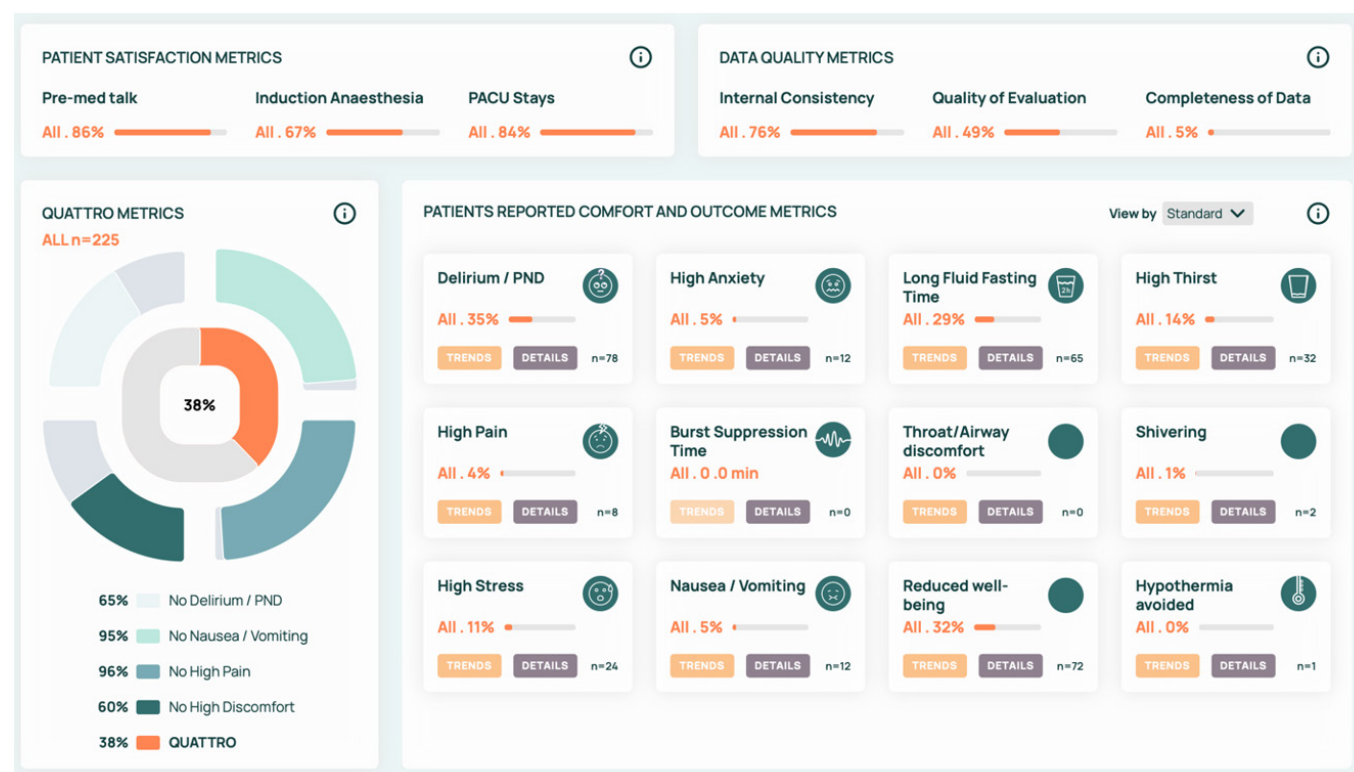


Figure 3. SBI Dashboard

More information about the project can be found at safebraininitiative.com. Unfortunately, the project has not been started in any Portuguese hospital until the publication date of this article. In this sense, we appeal to Portuguese hospitals' participation in implementing the SBI. By joining this initiative, hospitals will have the opportunity to work with international partner institutions, exchange knowledge, participate in scientific publications and learn from the experiences of other hospitals. In addition, participation in SBI will strengthen the institution's reputation as a centre committed to clinical excellence and patient well-being. Therefore, we encourage Portuguese hospitals to consider participating in the Safe Brain Initiative, taking advantage of the resources and tools available for implementing best practices and continuous monitoring of perioperative outcomes, as well as implementation projects available from other hospitals. By joining this initiative, we can achieve

and precise anaesthesia care through collaboration between healthcare providers, researchers, and patients from different countries. This ongoing effort reflects our commitment to enhancing patient outcomes and shaping the future of anaesthesia practice.

CONTRIBUTORSHIP STATEMENT / DECLARAÇÃO DE CONTRIBUIÇÃO

JBE, BCM and KJ: Conception, design and writing of the manuscript.

FR: Supervision and critical revision of the manuscript.

All authors approved the final version to be published.

JBE, BCM e KJ: Conceção, desenho e redação do manuscrito

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