Healthcare Organization Commitment

Contact Details

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Position
Associate Professor and Senior Researcher of Anesthesiology and Intensive Care

Organization Name
Vilnius University, Faculty of Medicine, Institute of Clinical Medicine, Clinic of Anesthesiology and Intensive Care

Commitment Details

How many hospitals are represented in this commitment?

<table>
<thead>
<tr>
<th>Last Report</th>
<th>Current</th>
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<td>1</td>
<td>1</td>
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Action Plan
Under- and over-hydration of patients in perioperative settings are both detrimental. These conditions are related to worse outcomes of the overall treatment by increasing morbidity and mortality due to compromised renal function (risk of acute failure), decreased turnover in the lymphatic loop (decreased recovery of plasma volume and increased risk of infection), and increased need for blood transfusion, as well as delayed mobility and increase length of hospital stay. Individual optimization of perioperative fluid administration by using our novel semi-closed loop infusion system will improve outcomes and increase patient safety.
Commitment Update
In 2016 a RCT involving 100 Total Hip Arthroplasty (THA) patients was completed as part of the validation of a novel semi-closed loop infusion system (SCLIS). Fluids are infused in a semi-automated way based on a feedback from both haemodynamic and microvascular response measurement devices, invasive and/or non-invasive. The major obstacle in further clinical validation of the method is the off-label use of non-invasive hemoglobin measurement monitor for the indirect measurement of mini-fluid challenges related changes in transcapillary fluid shifts. Meanwhile, it is the key criteria for the evaluation of changes in tissues' saturation with fluids. It allows to avoid both under- and over-hydration of tissues, and optimize fluid administration.

Other Challenge
5 - Patient blood management

Please describe any best practices your organization has learned through your commitment and share valuable lessons or challenges that were overcome

The two RCTs has shown that perioperative optimization of fluid administration can improve outcomes in elective major joint replacement surgery, but the novel method is too cumbersome to be implemented routinely by using the conventional techniques. The prototype semi-closed loop infusion system was shown to be safe, non-invasive and easy to operate. However, further validation and development of the method requires significant input from the industry.

Impact Details

<table>
<thead>
<tr>
<th>Initial Commitment</th>
<th>Commitment Update</th>
<th>Project Next Year</th>
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<tr>
<td>Lives Lost 0</td>
<td>Lives Lost 0</td>
<td>Lives Lost 0</td>
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<tr>
<td>Lives Spared Harm Target 0</td>
<td>Actual Lives Spared Harm in last 12 months 0</td>
<td>Lives Spared Harm Target for following calendar year 0</td>
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<tr>
<td>Lives Saved Target 5</td>
<td>Actual Lives Saved in last 12 months (might differ from initial target) 0</td>
<td>Projected Target of Lives Saved for following calendar to try to finish commitment 0</td>
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New Lives Lost (lives lost – actual lives saved)
0

Acknowledgement
Yes, I acknowledge that this commitment may be used for external communication and publicly announced at the World Patient Safety, Science & Technology Summit. Furthermore, I agree that this commitment may appear on the website of The Patient Safety Movement Foundation or the Masimo Foundation. I also give permission for my commitment to be used in support of the promotion of the World Patient Safety, Science & Technology Summit as well as The Patient Safety Movement initiative.