

### Peer Review File

Article information: <http://dx.doi.org/10.21037/jhmhp-20-114>

**Reviewer A:** I read with great interest the manuscript describing how today's technology could help patients to improve their outcomes and clinicians to improve the current health care system.

**Comment 1:** I would focus more on the impact of these technologies on the cardiac surgical patient.

**Response 1:** We appreciate the Reviewer's sentiments. We agree that more direct impact on the cardiac surgical patient should be emphasized, as well as the connection to ERAS. We have updated the manuscript accordingly.

Changes to the Manuscript: We updated the text on Page 9 (202-209) and throughout the manuscript regarding ERAS and cardiac surgery.

**Comment 2:** The concept of ERAS and how this technology could integrate and improve a cardiac ERAS program is not developed enough.

**Response 2:** We agree with the Reviewer and have updated the manuscript accordingly.

Changes to the Manuscript: We have elaborated on ERAS specifically (Page 4-5, Lines 120-135) and have further done so throughout the manuscript.

**Comment 3:** In addition, I would suggest adding a paragraph on how the described technology could answer the current research question in cardiac surgery (Ref: Florence Y Lai et al. "Identifying research priorities in cardiac surgery: a report from the James Lind Alliance Priority Setting Partnership in adult heart surgery." *BMJ Open* 2020 Sep 3;10(9):e038001. doi: 10.1136/bmjopen-2020-038001.).

**Response 3:** We agree with the Reviewer's thoughtful suggestion. We were not familiar with the James Lind Priority Setting Partnership questionnaire, survey, and project. We found it a worthwhile and meaningful piece and have incorporated it into the manuscript. We appreciate the Reviewer's comments to improve the manuscript.

Changes to the Manuscript: We have added a paragraph (Page 6, Lines 136-148) as discussed.

**Comment 4:** – Abstract:

P1122: What does increase value in surgical care mean? Please define.

**Response 4:** We agree with the Reviewer that this could be clarified further, and we have attempted to do so accordingly.

Changes to the Manuscript: We have added the statement "The ultimate embrace of the technological advances will rest on how well these priorities are addressed for all involved; indeed, patient empowerment and shared clinical decision-making are increasingly recognized as the main determinants of value." (Page 6, Lines 123-25)

**Comment 5:** – Introduction:

P2140: Please define IBM

**Response 5:** We recognize for clarification that IBM refers to the company - International Business Machines.

Changes to the Manuscript: We have updated the manuscript on Page 3, Line 75.

**Comment 6:** P2140: I would provide more detail on how the health care system is inefficient. How is the waste estimated? Based on what? Please define.

**Response 6:** We acknowledge the Reviewer's point and cite Bentley's (PMID 19120983) framework to think through waste in healthcare in the form of administrative waste, operational waste, and clinical waste. We highlight later in the manuscript the opportunity for reducing clinical waste with technology. However, we do recognize that too much of an in-depth discussion on this topic would dilute the core message of the manuscript. Our principal focus of technology is on patient engagement and the clinical benefits.

Changes to the Manuscript: We have added text to Page 3 (Lines 77-81) and Page 11 (Lines 221-24) to discuss waste in the healthcare system.

**Comment 7:** P4L73 to L81: Please provide references, ideally, related to cardiac surgery.

**Response 7:** We agree with the Reviewer and have added references to establish more support for this statement.

Changes to the Manuscript: We have added on page 6, line 108 two references related to cardiac surgery and enhanced recovery after cardiac surgery (PMID 12131125 & 25501695).

**Comment 8:** P8L159: Please provide a reference.

**Response 8:** We agree with the Reviewer and have added references to support the paragraph.

Changes to the Manuscript: We have added references on Page 6, Lines 113 and 116, including PMID 32370835, 29880128, and 31555325.

## **Guest Editors**

**Comment 1:** The first paragraph of the introduction could use some smoothing in its tone please.

**Response 1:** We have edited the first paragraph and hope that the tone is "smoother" in that respect.

Changes to the Manuscript: We have made changes in various places on Page 3, Lines 46-57.