Peer Review File

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Reviewer A

Comment 1: The cornerstone of this manuscript is the authors' use of a key drivers diagram (KDD) to plan their response to the COVID pandemic as it unfolded. KDDs are recommended by the Institute for Healthcare Improvement (IHI) for this purpose. What would tremendously strengthen the manuscript is to describe how the KDD changed over time; for example, can they show three versions of the KDD (an initial version, a version from a few weeks later, and a final version that did not change much thereafter) to demonstrate how their evolving knowledge had resulted in an improved KDD? Sharing their learnings at this level would turn this paper into a stronger one and can be used as a model by other researchers.

Reply 1: Thank you for this insightful comment. We have modified figure 1 to give a sense of the timeline, and the evolution of the KDD.

Changes in text: See figure 1

Comment 2: Authors have made an obvious mistake in the title of the manuscript, where they have written that phrase "key diagrams driver" incorrectly as "key drivers diagram". This has been repeated in the abstract, keywords, and the Conclusion section of the main text.

Reply 2: Thank you so much. We have corrected this oversight.

Changes in text: All mentions of “key diagrams driver” have been changed to “key drivers diagram”, or abbreviated to KDD.

Comment 3: The second paragraph of Introduction (lines 73-77) does not connect with the next paragraph. A rewrite would be necessary to make the text flow appropriately.

Reply 3: Thank you for pointing this out. The fourth and third paragraph have been switched, to ensure that it reads better.

Changes in text: See page 5 line 1 to line 12.

Comment 4: That same paragraph reflects on the experiences with SARS-CoV and MERS-CoV whose outbreaks were indeed nosocomial. We now know that outbreaks of SARS-CoV-2 were not exclusively (or even primarily) nosocomial. This was not clearly known at the time authors did this QI project, although the very first outbreak in Wuhan and the first outbreaks in the US were not nosocomial; they should reflect on whether and how this may have influenced their plans to do this QI project.

Reply 4: Thank you for highlighting that distinction.

Changes in text: We have rewritten the text to reflect why we felt nosocomial transmission, especially to healthcare workers, remained an issue. See page 4 line 11-20.

Comment 5: Authors mention that their institution was the first to cancel elective procedures as the pandemic worsened in March. It would be helpful to put this in context. Did Washington DC government eventually mandate cancelation of elective procedures, and if so, when did it happen?

Reply 5: Thank you for this comment. We have now added the context within which the decision to cancel elective procedures was made, delineating the timeline and emphasizing the importance of each day as it relates to the risk of compromised market share and goodwill in the community.

Changes in text: See page 15, line 2-6

Comment 6: Authors mention the strategy they used to have their providers work on a one-week-on, two-weeks-off cycle (I am simplifying it) and thereby, achieve a built-in two-week islation period. This was an approach that several other sites used at that time. I think it helps to mention, with proper citation, that CDC guidelines initially suggested a 14-day isolation and make it apparent to the readers why the work cycle proposed

would be a good fit for this requirement.

Reply 6: Thank you for this suggestion. We have added a line to explain the motivation behind the scheduling change.

Changes in text: “This was in keeping with the 14-day period suggested by the Center for Communicable Diseases (CDC) to monitor for development of signs and symptoms after potential exposure to COVID-19” (page 7, line 11-13)

Comment 7: The section on Primary Driver 1: Protect Patients and Staff has more to say about what was done to protect staff than it has for patients. What specific actions (other than cancelation of elective procedures and the use of negative pressure rooms) were taken to protect patients? Did they mandate mask use for all patients, and if so, when? Did they conduct inpatient COVID testing and if so, when? Did they restrict visotors, use telemedicine technology, etc.? And if the answer to any of these is yes, where they considered as part of the KDD or no?

Reply 7: Patients were required to mask, visitors were streamlined through a single entry and exit and ultimately restricted entirely, except for a few situations (e.g., end-of-life visits). Several testing platforms were developed and implemented for patient testing upon admission. Additionally, other patient-focused modifications were adopted as well and key changes have now been added to the manuscript with their respective timeline for implementation listed parenthetically.

Changes in text: see page 6, line 17-21

Comment 8: The most notable weakness of the study is in its methods of evaluation. Metrics such as attendance at grand rounds or number of new guidelines developed are rough surrogates, and because the same group who were planning to use them for evaluation were also involved in some of these activities (i.e., lack of blinding), the fidelity of these metrics could be questioned. However, I recognize that this limitation cannot be mitigated at this time. Aside from the issue with metrics, the evaluation does not have any control group, so it cannot be said if the use of KDD had any impact (positive or negative) on any of those metrics.

Reply 8: We agree with the sentiments of the comment, and have added a limitations section to the Discussion. The limitations note the lack of a control group as well as the lack of blinding. This addition will certainly be helpful for readers in their interpretation of findings.

Changes in text: see page 16 line 21 to page 17 line 5.

Other comments:

Comment 9: * "Washington State" is an uncommon way to refer to this state; "the State of Washington" or "Washington, the State" are more common.

Reply 9: We have changed this

Changes in text: "…in the State of Washington" (see page 4 line 3)

Comment 10: * When referring to the neighboring cities of New York and Boston, please use complete references, i.e., New York, NY and Boston, MA for clarity.

Reply 10: This has been updated in the text

Changes in text: See page 4 line 7

Comment 11: * Please use a consistent approach to write acronyms. "DC" and "D.C." both appear in text; either use periods or not.

Reply 11: This has now been changed to consistently be "DC"

Changes in text: Multiple.

Comment 12: * In a few places, authors use the phrase "our city" to refer to Washington, DC. I suggest they don't personalize this nor assume that the readers would know where the authors are from, and just refer to it as "Washington, DC".

Reply 12: Thank you for pointing this out. "Our city" has been changed to say "Washington, DC"

Changes in text: Multiple.

Comment 13: * Authors use the phrase "The Department" without first defining it; please explain the term.

Reply 13: This has now been changed

Changes in text: “Our anesthesiology department…” (see page 5 line 3)

Comment 14: * Authors refer to the MDAR checklist without defining the acronym, and without providing a citation. Please correct.

Reply 14: Based on this comment as well as Comment 16 below, the MDAR checklist has now been removed altogether, obviating the need for a definition or citation.

Changes in text: N/A

Comment 15: * Authors also refer to SQUIRE guideline without defining the acronym or providing a citation. This is mentioned in a different part of the text than MDAR; they should be mentioned together.

Reply 15: The SQUIRE guideline has now been defined and cited, and the mention of the SQUIRE guidelines has relocated to the end of the introduction. MDAR has been removed as it was noted to be inapplicable to the current study. Thank you for the comment.

Changes in text: See page 5 14-16

Comment 16: * Further on this topic: authors used (and included a copy of) the MDAR checklist but nearly all questions of the checklist are inapplicable. Was this really the right checklist to use for this study?

Reply 16: Supplementing the response to Comment 14 (above), the use of the MDAR checklist was initially requested at the direction of the editorial office. However, the current submission checklist suggests that it is no longer necessary. Removal of the MDAR checklist is fitting given that the present study is primarily quality improvement.

Changes in text: N/A

Comment 17: * Authors refer to the study site as "Our hospital" without first naming

the hospital in the text of the manuscript. Please provide full name of the hospital in text.

Reply 17: This has now been rectified

Changes in text: “The George Washington University hospital…” (see page 5 line 19)

Comment 18: * While I personally consider The George Washington University Hospital as an excellent hospital which delivers high quality care, I do not think it is appropriate for authors affiliated with the hospital to use the phrase "with a strong history of healthcare quality" unless they can provide an independent citation for this claim.

Reply 18: The phrase in question has been removed. Thank you for the personal note of confidence though.

Changes in text: text deleted from page 5 line 19.

Comment 19: * The phrase "Prior to *this period*" on line 93 is ambiguous; please specify which period (I am assuming they mean "Prior to the COVID-19 pandemic").

Reply 19: Thank you. This has now been changed per your suggestion

Changes in text: “Prior to the COVID-19 pandemic…” (see page 5 line 19)

Comment 20: * The sentence about IRB exemption (lines 94-96) appears in a surprising place and does not connect with the prior sentences of the paragraph. It may flow better if the study is explained first, and then the IRB exemption is noted. Manuscripts often mention the IRB status near where the evaluation/analysis methods are described.

Reply 20: Thank you for this suggestion. We have moved the IRB exemption sentence to end of the Methods section.

Changes in text: (See page 13 line 14)

Comment 21: * Results starts with "To date", but it is unclear what date that is. Please specify the date.

Reply 21: This has been clarified to read, “As of November 2020…”

Changes in text: see page 13 line 8

Reviewer B

Comment 1: My recommendation: approved for publication

While the manuscript is aligned with the practices employed by the majority of departments across country, this is a nice summary.

Reply 1: Thank you for your kind words.

Changes in text: N/A

Comment 2: March 16th 2020 was the date that hospitals across country ceased or reduced their elective cases, so it's not unique to the authors' institution

Reply 2: The surgeon general issued a statement to recommend halting elective surgery in the United States on March 17, 2020. Implementation of this recommendation was given latitude in various jurisdictions. For example, many Southern hospitals continued to run elective surgery due to the low incidence of COVID-19 in the community. Further, private, out-patient surgery centers continued with elective procedures, even in our region, for weeks after the recommendation. Finally, other local hospitals in Washington, DC, did not halt elective surgery until March 19, 2020. [https://www.medstarhealth.org/mhs/2020/03/17/medstar-health-postponing-elective-procedures-and-surgeries-starting-thursday-march-19-in-response-to-covid-19/]. While days-weeks may not appear significant in hindsight, the decision to halt surgery in the absence of a local mandate, even for one day, while competitors potentially continued operations risked reputational damage for reliability from referring physicians and patients.

Changes in text: See page 15 line 2-6

Comment 3: Fit testing it's required annually in all hospitals, and not something to be performed at the time of an event/pandemic

Reply 3: Thanks for this comment and the ability to clarify. Due to the acute increase in demand for respirators (i.e., N95 masks) globally, our hospital (and most others) purchased many new makes of respirators, requiring the re-fitting of all staff.

Changes in text: See page 15 line 7-9