Author’s response to reviews

Title: Standardised concentrations of morphine infusions for nurse/patient-controlled analgesia use in children

Authors:

Asia Rashed (asia.rashed@kcl.ac.uk)
Cate Whittlesea (c.whittlesea@ucl.ac.uk)
Caroline Davies (Caroline.Davies@gstt.nhs.uk)
Ben Forbes (ben.forbes@kcl.ac.uk)
Stephen Tomlin (Stephen.Tomlin@gstt.nhs.uk)

Version: 1  Date: 24 Jan 2019

Author’s response to reviews:

Dear Editor in Chief,

Thank you for accepting our manuscript for publication. All the points made by the editor and reviewers have been addressed in the revision to the benefit of the manuscript. A point-by-point response is provided below.

Response to editor’s comments

Editor:

1) Please check the mesh term for keywords

Response:

Mesh terms for keywords have been provided.

Editor:

2) Please could you revise this statement line 15-16 page 4 “Currently in European hospitals, morphine infusion syringes are prepared individually for children using the “rule of six” (box 1) to calculate infusion rate in micrograms (mcg) per kilogram per minute [9].
Response:

Thank you for your comment. The referred statement has been revised. Background, page 4.

Editor:

3) page 5 Box 1 rule of six please convert in the text.

Response:

The rule of six has been converted in the text. Background, page 4.

Editor:

4) Please specified your hypothesis better in the background.

Response:

Thank you for this comment. We have made few amendments in the background to clarify this point, Background, page 4.

We would prefer to use the word “challenge” rather than hypothesis as standard infusion has been well evident in literature, the challenge is to be able to use standard infusion to deliver N/PCA infusion; both bolus and continuous doses, from the same syringe solution for children.

Editor:

5) line 38 – 39 page 7: your power calculation is based on 1% error rate?

Response:

1% is medication error reported in an internal report and based our sample size calculation on this. We have rephrased the sentence referred to. Method section, page 7.

Editor:

6) line 17 – 23 “there was a significant difference between theaters and wards 3.6 versus 4.7 it could be a statistical significant but in the daily clinical practice? What does it mean?
Response:

A more details on what such difference means in daily clinical practice have been added in the manuscript, Results section, page 12.

Editor:

7) line 13 – 16 page 11 please rethink that statement and think to the concept of “Team”.

Response:

Thank you for this comment. We have revised the statement referred to. Results section, page 13.

Editor:

8) line 31 page 11 [Insert Table 3 here], please revise the authors guideline

Response:

Table 3 has been inserted in its right place as per author’s guideline. Results section, page 14.

Editor:

9) line 9 page 12 [Insert Table 4 here], please revise the authors guideline

Response:

Table 4 has been inserted in its right place as per author’s guideline. Results, page 16.

Editor:

10) line 59 – 61 page 12 better clarify your main finding.... The main finding of this study is......

Response:

Thank you for this comment. The main finding has been clarified in the first sentence of the discussion. Discussion, page 17.
Editor:

11) line 49 please state only the limitation of your study you need to stay focus on the methodology. If you want to do a SWOT analysis.... plane it in the methods section and analyse the result in the appropriate section.

Response:

Limitations section has been revised as suggested. Discussion, page 18.

Editor:

12) the section FUTURE WORK is completely speculative and need to be delete. It could be the opposite.

Response:

Future work section has been removed as suggested.

Editor:

13) line 51 page 14 you need to contextialized your conclusion understand that it is valid in your hospital and with your surgeon, please modify in this way if possible.

Response:

Thank you for this comment. The conclusion has been revised to reflect that it is valid in our hospital. Conclusions, page 18.

Response to reviewer’s comments

Reviewer:

i Thank the editors and the journal for the chance to review this article, and I congratulate the authors on a successful implementation of paediatric morphine ore filled syringes for use in the hospital. Overall the manuscript is well written.

Use of pure filled syringes is certainly possible, and makes the job of the nurses slightly easier. However it does not rule out any possibility of mistakes (like picking the wrong concentration or running the infusion according to a different concentration). Instead of having 3 different
concentrations being available, maybe the 2 concentration mostly used could be available, as the 3 mg syringes were hardly used.

Are these syringes made by pharmacy of the hospital? So is it available from narcotics access by physicians or direct transport from pharmacy? Is the possibility of foul play higher with prefilled syringes? Perhaps that's another question for different times. However what I would like to see are the data after 2015 December, as the time after implementation is low in the data, as pre-implementation data is almost 2 years and 3 months. Since the time has now elapsed it would be wise to look back into the data for more adverse events if reported during the last 3 years.

Response:

The morphine infusions in prefilled syringes containing morphine standard infusions are being prepared by the pharmacy-run centralized intravenous admixture service (CIVAS) – this information has been added in the method section, page 6.

They are prepared in batches and distributed to the wards where they keep them as their narcotic stock and are being dispensed by prescription written by a physician based on the hospital policy for the narcotic prescribing protocols, similar to any other narcotic drug. Therefore, we assume that there is no difference to any other narcotic drugs with regards to foul play. However, we would agree with the reviewer’s point that it might be a good question to be investigated in the future.

We agree with the reviewer’s point with regards to the period of the adverse events data post-implementation. This has been highlighted in the study limitations section.

However, the hospital has an ongoing safety assessment where they review and assess incidents routinely including those related to the use of standard concentration syringes.