Reviewer’s report

Title: The Effect of Graduate Medical Education on Patient Outcomes: a Systematic Review

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Reviewer: Lambert Schuwirth

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Comments concerning manuscript: “The Effect of Graduate Medical Education on Patient Outcomes: a Systematic Review” by R. van der Leeuw et al.

Thank you for giving me the opportunity to review this paper reporting on the influences educational innovations in GME have on patient outcomes.

1 The topic of the paper is of high interest; why would we start innovations if we cannot demonstrate their added value? Therefore, the review in this paper is extremely important. The study is well performed; its reporting is clear and logical and the level of detail of the information is such that anyone could replicate the study if s/he would want to.

Discretionary revision

2 There is one issue, though, that keeps confusing me. When reading the introduction I had the feeling the authors were seeking to answer the question to what extent GME and possible improvements in the training influences patient outcomes. But from the description of the results I understood that their aim was much broader and much more exploratory in nature. Basically they sought to explore all kinds of effects any form of GME might have on patient outcomes, and they primary focus seemed to be on:

- Nil nocere: does the mere fact that there are trainees in a hospital and they also contribute to patient care lead to equally good outcomes as when there would only be specialists: which basically one could conclude (studies comparing residents to faculty and those exploring the July effect)

- Does training lead to improved patient care and therefore better outcome in patient care: generally this seems to be the case (comparing residents of different training years and individual residents’ progress)

- Do specific educational interventions lead to better patient care in that domain, and it is fair to say that the vast majority do (effect of specific interventions and patient outcomes post residency)

I think therefore the paper could be improved further if the authors would be a bit more explicit about the different questions they sought to answer or at least have answered with their categorisation of papers. Perhaps a reorganisation of the paragraphs according to these questions would not only make the messages clearer but would also allow the authors to comment or annotate their findings.
per ‘question’ to help the reader better to understand the large number of discretely different outcomes of the individual studies.

Minor essential revision

3 One final minor point is the statement “This is surprising given that quality and performance initiative espouse life-long learning…” needs either referencing to empirical literature (which I doubt there is) or may best be rephrased into “..given that there is shared belief that quality …”

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests