Reviewer's report

Title: Does the type of abortion provider influence contraceptive uptake after abortion? An analysis of longitudinal data from 64 health facilities in Ghana

Version: 3
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Reviewer: Sarah Rominski

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Overall, this paper is well written and I believe the analytic approach is strong. The guiding research question is well defined and the findings presented clearly. While somewhat limited in scope, the data seem sound.

I do have a few questions which I hope can be addressed.

Firstly, I may be misreading the results into the discussion, but it seems to me that, due to the inclusion of the facility-level fixed effects (which I agree is a good strategy with these data), it is not possible to make assertions about the efficacy of midwives working in out-patient facilities as it relates to post-abortion contraception uptake. The women served at these midwife-only facilities were not included in the multivariate analysis, as per the limitations section. Or are there some outpatient facilities which have both midwives and physicians working?

I believe there is a problem with the statement, “In addition, midwives worked at lower level facilities where contraception is better integrated into the uterine evacuation service, with contraceptive counseling and supplies being done at the same time and in the same location as the uterine evacuation rather than through referral.” Firstly, how do you know this? Has this been assessed? If so, can you cite a reference for this statement? Additionally, wouldn’t this have been accounted for by the fixed effects? Patients cared for by midwives at facilities where both midwives and physicians practiced were more likely to receive contraception than those seen by physicians. Or am I misreading this?

Although the limitations are mentioned, I think it needs to be stated more clearly that the difference between the proportion of women who received care for an induced abortion versus those for PAC could be explained by miscarriage. It is plausible that the 47% of PAC clients who did not accept contraception did so because they were being treated for miscarriage rather than self-induced abortion. Although not likely, since your data do not indicate differently, this is a possible explanation.

Keep in mind that Ghanaian physicians are not MDs; they have an MBChB degree. I would refer to the physicians who are not house officers as Consultant Physicians to discriminate them from the House Officers.

I do not see a Figure 1 in the submission.

Finally, I wonder about the implications of this research. Given the very few
physicians in Ghana, it seems appropriate to me that midwives are found to be more effective, if that’s the overall take home message of this paper, at including contraception uptake as part of abortion care. It seems to me that midwives should be providing this kind of routine care. I wonder that there is no discussion in this paper about a team-based care approach. If house officers, who are junior doctors without specialty training, and physicians are able to provide care for more complicated abortion procedures (those in the second trimester, for example), which midwives are not trained or certified to provide, but then midwives provide the post-abortion family planning counseling, that team care would not be shown in these data. It seems to me that this could be a good care model in resource limited settings, such as Ghana.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare I have no competing interests