

OBSTETRICS & GYNECOLOGY



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- Comments from the reviewers and editors (email to author requesting revisions)
- Response from the author (cover letter submitted with revised manuscript)*

**The corresponding author has opted to make this information publicly available.*

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obgyn@greenjournal.org.

Date: 06/22/2023
To: "Maeve Alterio" [REDACTED]
From: "The Green Journal" em@greenjournal.org
Subject: Your Submission ONG-23-1123

RE: Manuscript Number ONG-23-1123

A Geospatial Analysis of Abortion Access in the United States After the Reversal of Roe v Wade

Dear Dr. Alterio:

Thank you for sending us your work for consideration for publication in Obstetrics & Gynecology. Your manuscript has been reviewed by the Editorial Board and by special expert referees. The Editors would like to invite you to submit a revised version for further consideration.

If you wish to revise your manuscript, please read the following comments submitted by the reviewers and Editors. Each point raised requires a response, by either revising your manuscript or making a clear argument as to why no revision is needed in the cover letter.

To facilitate our review, we prefer that the cover letter you submit with your revised manuscript include each reviewer and Editor comment below, followed by your response. That is, a point-by-point response is required to each of the EDITOR COMMENTS (if applicable), REVIEWER COMMENTS, and STATISTICAL EDITOR COMMENTS (if applicable) below. The revised manuscript should indicate the position of all changes made. Please use the "track changes" feature in your document (do not use strikethrough or underline formatting). Upload the tracked-changes version when you submit your revised manuscript.

Your submission will be maintained in active status for 21 days from the date of this letter. If we have not heard from you by 07/07/2023, we will assume you wish to withdraw the manuscript from further consideration.

EDITOR COMMENTS:

Thank you for your submission. This is a very interesting manuscript that is timely. We would like to turn this around quickly for you. The reviewers comments below will be important to address.

In particular, please respond to the comments about whether a pre-Dobbs evaluation could be done as in Ref #22 and in articles in lay press such as: <https://www.npr.org/sections/health-shots/2023/06/21/1183248911/abortion-access-distance-to-care-travel-miles>, without significant delay in publications.

Please also note the following:

* Help us reduce the number of queries we add to your manuscript after it is revised by reading the Revision Checklist at https://journals.lww.com/greenjournal/Documents/RevisionChecklist_Authors.pdf and making the applicable edits to your manuscript.

* Figures 1-4: Please upload as individual figure files on Editorial Manager.

STATISTICAL EDITOR COMMENTS:

As was done in ref # 22 and in lines 228-230: It would be more informative to the reader if comparisons before vs after the Dobbs decision were contrasted. That is, given the geographic dispersion of the US population, the 40% not having access within 30 miles needs more context.

REVIEWER COMMENTS:

Reviewer #1: Thank you for the opportunity to participate in peer review.

1. Subject matter. It is very timely, we really need to have this information to understand fully the impact on access. It affects everyone from clinicians in protective and restrictive states to policymakers, locally and nationally. Readership of this journal will benefit as well as the medical community at large.
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<https://www.cnn.com/2022/11/16/health/abortion-texas-sepsis/index.html>

<https://www.texastribune.org/2022/06/23/supreme-court-abortion-roe-dobbs-texas/>

<https://www.nytimes.com/2022/03/06/upshot/texas-abortion-women-data.html?smid=nytcore-ios-share&referringSource=articleShare>

<https://www.nytimes.com/article/abortion-companies-travel-expenses.html>

<https://www.nytimes.com/2023/03/06/us/texas-abortion-ban-suit.html?smid=nytcore-ios-share&referringSource=articleShare>
4. Lines 187-193. I think showing a visual map of the future restrictions would be helpful since we expect this to keep getting worse.
5. Lines 213-215. I would be very interested in seeing a sub-analysis of surgical abortion access. While I fully understand that medication abortion and virtual clinics have expanded access significantly, it is also under attack, and I would have liked to see a. what would happen if Mife is banned, and b. what access looks like if virtual clinics are banned but Mife is not, and c. what does surgical abortion access look like. I think surgical abortion is important again for those who are most vulnerable (anomalies, those hospitalized with PRROM for example) but also for those who missed the window. In-person clinics are listed in Table 1 and Figure 2, but it is not stated if they are surgical abortion places; visual mapping would also help in my opinion.
6. I am wondering if there is another way to represent Figure 3 to show the magnitude of the access gap. Rather than dots, would it be possible to show them in shades of color (ex red) to demonstrate those who are let's say >200 miles away from the abortion clinic?

Reviewer #2:

This is a well thought out paper assessing the distance traveled for a hypothetical patient accessing an abortion in the post dobbs landscape. I applaud the authors for their work on this important topic. I foresee that the landscape will continue to change, so I have some recommendations to ensure that this paper stands as a marker in time for the first year post-dobbs. We will likely need similar papers with changes in legislation in the years to come.

Line 56 - consider "abortion clinic" or "abortion facility" rather than abortion provider. Provider feels like a single person rather than a location to get services.

Line 62 - consider "Two in five" rather than 40%, natural frequencies easier to understand and the authors use this stat in the precis

Line 64 - rather than "current state bans" consider something like "state bans proposed since the Dobbs decision" or "state bans proposed in 2023". The time sensitive nature of this topic should be clear. Similarly, in line 49, reasonable to state "according to the landscape of abortion care in the year following the Dobbs decision"

Introduction

- consider referencing an article in the intro that describes distance traveled pre-Dobbs (this is alluded to in lines 200-201, but could be in the intro as well)

Methods

- line 102 - why did the authors opt for minutes of drive time rather than miles traveled? One is not better than the other, but as previous studies have looked at miles traveled, it makes it more challenging to compare pre and post Dobbs information. Might be worth adding miles traveled if the data is available.

- line 108 - I had to look up what an isochrone is. It makes sense in context, but it may be helpful to the average reader to have it explained in the paper before line 109. If possible, would be reasonable to replace isochrone with distance traveled to clinic when possible for readability

- line 149 - add the dates rather than stating "next calendar year" to decrease the mental math needed by the reader.

Lines 153-155 - consider listing these states as was done for the other categories

Results

- lines 175-8. Did this scenario occur for any other states? If so, please state and make clear that Wisconsin is shown as an example.

- lines 189-90: consider putting this information in a figure. With some scrolling, I can figure out that there will be an additional 5 million patients that lose access to an abortion clinic within 30 min, but this takes some mental energy for the reader. If a figure could outline this change visually, (maybe with a percent change?) it would be compelling

Discussion

- line 196-99, consider using natural frequencies again. Whatever the authors decide, it should be consistent through the paper (25% not "a quarter")

- lines 213-14 - reads awkwardly, consider rewording. Also, is there a citation for this? If so, please add

- lines 238-9 - do the authors have an idea of why this is (I suspect due to the stigma of abortion and the desire for clinics to avoid being batched together)

Table 1

- the authors include clinics with a virtual option but indicate (very appropriately) that these clinics were not included in the distance traveled calculations. Consider adding text in the methods that this information was collected since it is shared in the table

Table 3

- rather than presenting this information in a table, it is possible to have a figure that is a map of the US and is color-coded by categorization of abortion access

Figure 1 - I don't know that this adds to the study since the methods are clearly described. Consider deleting

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Sincerely,
Shannon K. Laughlin-Tommaso, MD, MPH
Associate Editor, Gynecology

The Editors of Obstetrics & Gynecology

In compliance with data protection regulations, you may request that we remove your personal registration details at any time. (Use the following URL: <https://www.editorialmanager.com/ong/login.asp?a=r>). Please contact the publication office if you have any questions.



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412 E Spokane Falls Blvd
Spokane, WA 99202

June 27, 2023

Dear Dr. Laughlin-Tommaso, and Editors,

On behalf of all the authors, thank you so much for taking the time to review our paper and for the opportunity to revise and resubmit our manuscript. We greatly appreciate the reviewers' time and constructive critique. As a result of the reviewers' comments, we have made a number of significant changes that we believe have made the manuscript stronger and provide additional clarity for its readers. All changes have been tracked or highlighted in the revised manuscript with line numbers noted, and we respond specifically to the reviewers' comments below:

EDITOR COMMENTS:

Thank you for your submission. This is a very interesting manuscript that is timely. We would like to turn this around quickly for you. The reviewers comments below will be important to address.

In particular, please respond to the comments about whether a pre-Dobbs evaluation could be done as in Ref #22 and in articles in lay press such as: https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_https%3A%2F%2Fwww.npr.org%2Fsections%2Fhealth-shots%2F2023%2F06%2F21%2F1183248911%2Fabortion-access-distance-to-care-travel-miles_%3B!!JmPEqBY0HMsZNaDT!p6pBNEARncNbPsmvKkT3YrgZu_ZDv_3W98dv1KLWXT-qJleGCQF_I_Q3vVOF8sIVrHsVg-5NYCIDF9q2VU6t%24&data=05%7C01%7Cmaeve.alterio%40wsu.edu%7Cc4efa887c00a4cb48bc108db736359a6%7Cb52be471f7f147b4a8790c799bb53db5%7C0%7C0%7C638230643087276703%7CUnknown%7CTWFpbGZsb3d8eyJWljoimc4wLjAwMDAiLCJQljoiv2luMzliLCJBTiil6k1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=ms7%2BtSUVmjxEFzqcx6dbqekfMzukkzIrgGSNOJs%3D&reserved=0, without significant delay in publications.

- a) We appreciate the reviewer's thoughtful review and appreciate their question. While the authors understand the benefit of a pre-Dobbs and post-Dobbs geospatial analysis, we currently do not have the ability to capture previous addresses at a given time in the past. The authors could attempt to obtain that information from internet archives; however this analysis would cause significant delays in publication and is at risk of being incomplete or inaccurate.

Please also note the following:



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* Figures 1-4: Please upload as individual figure files on Editorial Manager.

The figures have been uploaded as individual figure files on Editorial Manager.

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As was done in ref # 22 and in lines 228-230: It would be more informative to the reader if comparisons before vs after the Dobbs decision were contrasted. That is, given the geographic dispersion of the US population, the 40% not having access within 30 miles needs more context.

- a) Thank you for this suggestion. Other studies (such as Rader *et al.*) and the Myers Abortion Facility Database have compared travel time before and after the Dobbs decision. Our analysis instead looks at current and projected travel time with further legal threats to abortion access. We had considered evaluating travel time before and after the Dobbs decision using our unique analysis method but did not feel confident that we would be able to accurately capture all abortion clinic locations using internet archives. Additionally, our analysis has additional geographical precision to estimate travel time for individuals (rather than selecting the 50th percentile of all travel times in a grid that overlaps with each census tract). This creates additional accuracy especially for women living in rural areas. Our analysis also evaluates Alaska and Hawaii, which were excluded in the Rader *et al.* paper. We also considered that a 60-minute driving time may not be representative of what women would be willing to drive one way for an abortion provider and expanded our analysis to 30- and 90-minute driving distances as well.

REVIEWER COMMENTS:

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1. *Subject matter. It is very timely, we really need to have this information to understand fully the impact on access. It affects everyone from clinicians in protective and restrictive states to policymakers, locally and nationally. Readership of this journal will benefit as well as the medical community at large.*

a) We thank the reviewer for their kind comments and thoughtful critique.

2. *The geospatial analysis methodology is appropriate. I was not familiar, so looked it up. Looks like CDC is using it, and appears it is used in medicine and outside of medicine. As a reader, I would have appreciated if the authors added a few sentences explaining the history and context in which this analysis is used to help readers like me. Most readers would not take the time to look it up to understand it.*

a) We thank the reviewer for the opportunity to clarify this definition for future readers. We have now included this definition in our methods (line 116-117).

3. *Line 108. My main question is how 30, 60, and 90-minute isochrones were chosen. While I do find those time intervals very useful in understanding access, I could not quite figure out why not look at longer driving distances. For example, for a patient living anywhere in Texas, it will be 12 hours if not more to get to the nearest clinic. This made me wonder if another way of describing access could show better how severely the most vulnerable are affected. If you show that let's say 20% of people are more than 500 miles away from an access point, that helps understand geography in a different way. I was thinking of a different way of presenting data because I have been following this discourse in lay press (some examples below), and while it is not necessarily bad press, it is just we are missing the point of showing how many people are affected. In the lay press it looks like individual stories, but showing the magnitude in this study would be super helpful.*

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- a) We appreciate the reviewer's thoughtful review and appreciate their question. A literature review of this topic found limited data overall, but we have now included in our discussion several studies reporting distance traveled for abortion access. A study out of Washington State found that patients are willing to travel on average 20 minutes for primary care appointments, and 30 minutes for urgent care appointments. Prior to the Dobbs decision, the average travel time to get to an abortion facility was 27.8 minutes. However, according to a recent Jama article average travel time to an abortion is now over 90 minutes. Adding additional time analysis, such as 3 hours, would unfortunately



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delay publication significantly as the coding would need to be created and then corrected for overlapping isochrones.

4. *Lines 187-193. I think showing a visual map of the future restrictions would be helpful since we expect this to keep getting worse.*

a) We thank the reviewer for this comment. We have revised Figure 2 to clarify its inclusion of the future restrictions.

5. *Lines 213-215. I would be very interested in seeing a sub-analysis of surgical abortion access. While I fully understand that medication abortion and virtual clinics have expanded access significantly, it is also under attack, and I would have liked to see a. what would happen if Mife is banned, and b. what access looks like if virtual clinics are banned but Mife is not, and c. what does surgical abortion access look like. I think surgical abortion is important again for those who are most vulnerable (anomalies, those hospitalized with PRRM for example) but also for those who missed the window. In-person clinics are listed in Table 1 and Figure 2, but it is not stated if they are surgical abortion places; visual mapping would also help in my opinion.*

a) We appreciate the reviewer's thoughtful review and appreciate their suggestions. We are investigating surgical and procedural abortion access for future studies. This is an important consideration, especially with the threat of the inability to mifepristone in the future. For this study, we have included the clarification regarding brick and mortar and virtual clinics. The clinics on the maps are the brick-and-mortar clinics. The virtual clinics have not been mapped out. Some clinics are intentionally vague as to their offerings as a security measure. (Line 106-107)

6. *I am wondering if there is another way to represent Figure 3 to show the magnitude of the access gap. Rather than dots, would it be possible to show them in shades of color (ex red) to demonstrate those who are let's say >200 miles away from the abortion clinic?*

a) We appreciate the reviewer's comment. This figure is a dot density map. The dots are randomly placed inside of the census tract. If a census had 90,000 people, it would get three dots randomly placed within the boundary of the tract. We have included a clarification with Figure 3.

Reviewer #2:

This is a well thought out paper assessing the distance traveled for a hypothetical patient accessing an abortion in the post dobbs landscape. I applaud the authors for their work on this important topic. I foresee that the landscape will continue to change, so I have some recommendations to ensure that this paper stands as a marker in time for the first year post-dobbs. We will likely need similar papers with changes in legislation in the years to come.

a) We thank the reviewer for their kind comments and thoughtful critique.



Line 56 - consider "abortion clinic" or "abortion facility" rather than abortion provider. Provider feels like a single person rather than a location to get services.

- a) We thank the reviewer for this correction; we have revised this throughout the manuscript.

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- a) We thank the reviewer for this correction; we have revised this throughout the manuscript.

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- a) We thank the reviewer for this correction; we have revised this throughout the manuscript.

Similarly, in line 49, reasonable to state "according to the landscape of abortion care in the year following the Dobbs decision"

- a) We thank the reviewer for this correction; we have revised the manuscript.

Introduction

- consider referencing an article in the intro that describes distance traveled pre-Dobbs (this is alluded to in lines 200-201, but could be in the intro as well)

- a) We appreciate the reviewer's question and agree, the changes have been made in the manuscript (line 85-86).

Methods

- line 102 - why did the authors opt for minutes of drive time rather than miles traveled? One is not better than the other, but as previous studies have looked at miles traveled, it makes it more challenging to compare pre and post Dobbs information. Might be worth adding miles traveled if the data is available.

- a) We thank the reviewer for this question and suggestion. We chose to use an estimated travel time because it was a consistent measure of effort for every location. The same distance may incur different levels of effort depending on the speed limits, complexity of the route, area topography, or other factors, which are all taken into account by using time-based calculations. We also believe time is more consistent with an individual's decision-making process for how far away something is located. For example, 100 miles on a straight highway with a high-speed limit is very different than 100 miles in and around an urban area or driving on rural roads. In summary, we felt this was a more patient-centered approach than raw distance. (Lines 134-138).



- line 108 - I had to look up what an isochrone is. It makes sense in context, but it may be helpful to the average reader to have it explained in the paper before line 109. If possible, would be reasonable to replace isochrone with distance traveled to clinic when possible for readability

- a) We thank the reviewer for the opportunity to clarify this definition for future readers. An isochrone is a line on a map indicating equal travel time from a location. Isochrone areas indicate how far a person can travel in a given amount of time. We have now included this definition. (Line 124-125).

- line 149 - add the dates rather than stating "next calendar year" to decrease the mental math needed by the reader.

- a) We thank the reviewer for this correction; we have revised the manuscript. (line 169)

Lines 153-155 - consider listing these states as was done for the other categories

- a) Thank you for this important comment. There are 28 states that are currently unrestricted. We have added this number to the manuscript as well as an additional map to clarify.

Results

- lines 175-8. Did this scenario occur for any other states? If so, please state and make clear that Wisconsin is shown as an example.

- a) We thank the reviewer for this correction; we have revised the manuscript. (Line 200)

- lines 189-90: consider putting this information in a figure. With some scrolling, I can figure out that there will be an additional 5 million patients that lose access to an abortion clinic within 30 min, but this takes some mental energy for the reader. If a figure could outline this change visually, (maybe with a percent change?) it would be compelling

- a) We thank the reviewer for this thoughtful suggestion. Table 2 has now been converted into Figure 5.

Discussion

- line 196-99, consider using natural frequencies again. Whatever the authors decide, it should be consistent through the paper (25% not "a quarter")

- a) We appreciate the reviewer's thoughtful review and appreciate their suggestion. We have revised the manuscript (lines 63 and 220)

- lines 213-14 - reads awkwardly, consider rewording. Also, is there a citation for this? If so, please add

- a) We thank the reviewer for alerting our team to this oversight; we have revised. (Line 244)



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- lines 238-9 - do the authors have an idea of why this is (I suspect due to the stigma of abortion and the desire for clinics to avoid being batched together)

- a) Thank you for this important comment. Unfortunately, we were unable to find existing research as to why this may be the case. The authors speculate that this is out of an abundance of safety for patients and staff at the clinics.

Table 1

- the authors include clinics with a virtual option but indicate (very appropriately) that these clinics were not included in the distance traveled calculations. Consider adding text in the methods that this information was collected since it is shared in the table

- a) We thank the reviewer for this correction; we have revised the manuscript. Virtual clinics may be fully independent virtual clinics with no brick-and-mortar affiliation, or those affiliated with a physical clinic. (Line 106-107)

Table 3

- rather than presenting this information in a table, it is possible to have a figure that is a map of the US and is color-coded by categorization of abortion access

- a) We appreciate the reviewer's question and agree. We have since reformatted Table 3 into a map (Figure 2).

Figure 1 - I don't know that this adds to the study since the methods are clearly described. Consider deleting

- a) Thank you for this comment.

Thank you again for the opportunity to revise our manuscript based on the reviewers' insightful comments. We have made significant edits, which we believe have clarified our methods and strengthened the manuscript overall. We hope this addresses the reviewers' questions and suggestions and look forward to your response.

Sincerely, on behalf of all authors,

Maeve Alterio



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