

# OBSTETRICS & GYNECOLOGY



**NOTICE:** This document contains correspondence generated during peer review and subsequent revisions but before transmittal to production for composition and copyediting:

- 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.*

Personal or nonessential information may be redacted at the editor's discretion.

Questions about these materials may be directed to the *Obstetrics & Gynecology* editorial office:  
[obgyn@greenjournal.org](mailto:obgyn@greenjournal.org).

**Date:** Dec 17, 2020  
**To:** "Jean Guglielminotti" [REDACTED]  
**From:** "The Green Journal" em@greenjournal.org  
**Subject:** Your Submission ONG-20-3085

RE: Manuscript Number ONG-20-3085

Racial and ethnic disparities in failure-to-rescue in the context of severe maternal morbidity in the United States, 1999-2016

Dear Dr. Guglielminotti:

Your manuscript has been reviewed by the Editorial Board and by special expert referees. Although it is judged not acceptable for publication in Obstetrics & Gynecology in its present form, we would be willing to give further consideration to a revised version.

If you wish to consider revising your manuscript, you will first need to study carefully the enclosed reports submitted by the referees and editors. Each point raised requires a response, by either revising your manuscript or making a clear and convincing argument as to why no revision is needed. To facilitate our review, we prefer that the cover letter include the comments made by the reviewers and the editor followed by your response. The revised manuscript should indicate the position of all changes made. We suggest that you use the "track changes" feature in your word processing software to do so (rather than strikethrough or underline formatting).

Your paper will be maintained in active status for 21 days from the date of this letter. If we have not heard from you by Jan 07, 2021, we will assume you wish to withdraw the manuscript from further consideration.

#### REVIEWER COMMENTS:

Reviewer #1: This is an excellent paper on an important topic. However, the differences with the authors' prior publication are not entirely clear and should be better described. Several weaknesses should be addressed.

One weakness of the paper is the lack of any data on SMM concurrent to the FTR data. It would be better rounded out to at least have the temporal trend of SMM. In addition, the percentage of deaths captured by only including SMM cases for the definition of FTR is important.

In the entire paper, please clarify that the whole population studied has SMM. "recorded" is not a very clear word and should not be used.

#### Abstract:

Please clarify that the entire population has SMM. In the results it appears that the 4 per 1000 women died with FTR. This is obviously incorrect.

#### Introduction:

Line 86 - please clarify that death after a complication is the definition for FTR; this sentence is unclear

Line 92 - I would not call data that overlaps with this paper and is only 6 years older "dated" - there are other differences from your prior study that can be better described

#### Materials and Methods:

There should be some overview of the study design introduced in the beginning of this section

Line 99 - please provide citations for the STROBE and RECORD guidelines. Overall this section is well-organized and clear.

Please follow standard rules for acronyms with the first use of the acronym defining it (NIS on line 101)

Line 119 - does this mean only cases of SMM were included? This is unclear.

Line 126 - information on sensitivity and specificity of the CDC SMM algorithm can go in the discussion

Line 131 - this outcome definition is unclear because what is a "complication." This needs to be more clearly defined. If this is SMM as defined by the CDC, state that.

Line 137 - explanations of race and ethnicity are not appropriate for the materials and methods section; defining the exposure is sufficient

Line 155 - in Supplemental Table 1, only 654.2 and O34.21 are listed for previous cesarean delivery. I have two questions. 1 - were the nested codes included in this analysis (for example O34.211? In addition, was this validated against other codes? You could cross-tabulate with O82 (over 95% of patients with a prior cesarean have a repeat cesarean). I mention this validation because it is easy to perform and understand that internal validation of most ICD codes is impossible

Line 209 - Why was PROM chosen as an independent variable in the adjusted analysis?

## Results

Line 233 - I think when you say "recording SMM" you mean "with SMM" - "recording SMM" is confusing terminology

Line 235 - Given that 15% were excluded for missing rare and ethnicity information, I would consider including this group as it is likely informative as misclassification of race is more common in minority races (Smith PMID 21092309) and missing information is associated with poor health outcomes in administrative databases

Figure 1A and 1B - why are the units different on the y-axes? These should be the same.

## Discussion:

Line 292 - the decrease in FTR was much more pronounced for black patients in the crude chart. This is the observed, actual number despite lack of adjustment and should be discussed. Reasons for the difference between the crude and adjusted rates should be discussed.

In the discussion, please address the strong difference in FTR between patients with previous cesarean delivery. This is unexpected as adverse outcomes are more common in patients with previous cesarean deliveries. In addition, it is interesting that 51% of FTR were non-emergent CD, with a greater proportion of non-emergent CD than the non-FTR group.

Overall, the discussion is lacking in direction and interest. For example, you mention that early warning signs have been introduced, but have these had an impact? What may have had an impact on FTR? The discussion can use significant improvement.

## Reviewer #2:

### General Comments

Given the significant Black maternal health disparities, finding new angles to explore these disparities are always important. The authors present a large database study to explore the impact of severe maternal morbidity on failure to rescue. However, given this is a database studies there are limitations that allow for more nuanced discussion outcome.

### Abstract

Line 45 Consider rephrasing to improve flow particularly first 6 words.

### Introduction

Line 78 What is a lower quality hospital?

Line 88 overview hospital characteristics.

Would like to see stronger explanation of using FTR as an obstetrical quality marker, particularly because this is not a familiar concept in obstetrical literature as pointed out would be nice to better walk readers through the background (even beyond citations)

### Material and Methods

Line 122 why were age parameters chosen, particularly excluding patient's >45yo advanced maternal age pregnancies and their impact on SMM.

Line 125 Expand on the maternal complications and procedures

Line 138 You describe race or ethnicity as a proxy for socioeconomic determinants of health and structural racism but later in your limitations Line 296 -300 you describe that NIS data do not contain individual information on this and therefore this is a limitation. May consider revising this as you contradict your later statement

Line 163 Does the NIS describe what constitutes a small, medium or large hospital. Can this be provided?

Line 190 Consider changing "in Whites" to "racial and ethnic minority patient group" and "White patient group" for congruence  
 Line 194 Consider changing phrase "racial and ethnic minority group to match later phrase of "White women" in line 194. These patients are also women want to ensure similar description when speaking of minority patients versus White patients.

#### Discussion

Line 292 What are some of those changes that improved outcomes? How can that be utilized to improve quality of care

Line 337 This is a major limitation, how do you accommodate for this?

Line 339 Given FTR's association with hospital characteristics, database study seems to be difficult method to really explore hospital characteristics and potential impact on SMM

Would also mention the limitation of using 1CD9 or 10 codes to determine diagnosis given potential for user differences

There are significant limitations to the use of the database and complete access to data regarding patients, hospitals and outcomes to feel that impactful change regarding care can be made.

#### Conclusion

Line 350 352 Difficult to ascertain from data presented exactly what were the cause of death or circumstances around a person's for patient's within the database and how these could be avoided

Reviewer #3: The authors present their work evaluating racial and ethnic disparities in rates of death after a complication for patients with severe maternal morbidity. The following items should be addressed:

1. Introduction - the authors cite the Friedman AJOG study that asks a similar question, and refer to it as "dated" however the current study includes the same time period as that study and only extends it by 6 more years. Are the readers to infer that the majority of the data in the current manuscript is also dated? Why not limit the current manuscript to 2010 and beyond, rather than going back to 1999?
2. Methods - please clarify in the description of the database - if a patient is brought to a hospital extremely ill and dies shortly after arrival, for example if they are receiving CPR en route and pronounced dead shortly after admission, are they included? It would be helpful to determine whether some of these may represent cases where the situation was too far advanced for the hospital staff to be able to intervene, and if so what proportion of cases.
3. Results - the authors acknowledge that the rates of FTR have gone down over the study time period, in all racial/ethnic categories. It would be beneficial rather than providing only the data for the first and last year to provide some other interval data for the rate in the body of the manuscript. Although this is represented clearly in Figure 1, some additional information in the manuscript body would be helpful. Also relevant to this point, on visual inspection of Figure 1, the change in crude FTR rate particularly for black women was quite dramatic from 1999 to 2009; the authors should consider calculating their regressions with the subset of data from 2009-2016 and providing the results of that subanalysis.
4. Discussion lines 310-328 - this information seems beyond the scope of this manuscript, consider removing or condensing.

#### STATISTICAL EDITOR COMMENTS:

The Statistical Editor makes the following points that need to be addressed:

Table 1: For the column "No FTR", the sum of race ethnicity subsets does not equal the column total. For other subsets with missing data, should cite the n(%) missing in each column, not just the total # missing.

Table 3: Suggest organizing Table 3 exactly like Table 2. The use of the absolute rate (when that rate is actually the adjusted, rather than the crude rate) does not seem as clinically useful as expressing the results in terms of rates per 1000 or as rate ratios.

Table 4: Would be informative to compare the probability ratios for urban non-teaching and rural hospitals using urban teaching as the referent, for each of the racial subsets.

Fig 1A, 1B: As stated by the Authors, there does appear to be significant improvement in narrowing the gap among the

racial ethnic groups in the later years of the study. If one were to analyze data for the time period beginning in 2008, would the same conclusions hold?

General: How was race/ethnicity determined in these data? Self-identified? There does not appear to be missing data by race, apart from a minor arithmetic difference. Is that true?

Notwithstanding that there may be unmeasured covariates that also could have affected the outcomes (which should be included in the limitations section), the Authors should supplement their analysis of adjusting the FTRs for the 12 variables cited in Table 3 by a matching algorithm to corroborate the associations demonstrated.

#### EDITOR COMMENTS:

1. The Editors of Obstetrics & Gynecology are seeking to increase transparency around its peer-review process, in line with efforts to do so in international biomedical peer review publishing. If your article is accepted, we will be posting this revision letter as supplemental digital content to the published article online. Additionally, unless you choose to opt out, we will also be including your point-by-point response to the revision letter. If you opt out of including your response, only the revision letter will be posted. Please reply to this letter with one of two responses:

A. OPT-IN: Yes, please publish my point-by-point response letter.

B. OPT-OUT: No, please do not publish my point-by-point response letter.

2. Obstetrics & Gynecology uses an "electronic Copyright Transfer Agreement" (eCTA). When you are ready to revise your manuscript, you will be prompted in Editorial Manager (EM) to click on "Revise Submission." Doing so will launch the resubmission process, and you will be walked through the various questions that comprise the eCTA. Each of your coauthors will receive an email from the system requesting that they review and electronically sign the eCTA.

Please check with your coauthors to confirm that the disclosures listed in their eCTA forms are correctly disclosed on the manuscript's title page.

3. For studies that report on the topic of race or include it as a variable, authors must provide an explanation in the manuscript of who classified individuals' race, ethnicity, or both, the classifications used, and whether the options were defined by the investigator or the participant. In addition, the reasons that race/ethnicity were assessed in the study also should be described (eg, in the Methods section and/or in table footnotes). Race/ethnicity must have been collected in a formal or validated way. If it was not, it should be omitted. Authors must enumerate all missing data regarding race and ethnicity as in some cases, missing data may comprise a high enough proportion that it compromises statistical precision and bias of analyses by race.

Use "Black" and "White" (capitalized) when used to refer to racial categories. The nonspecific category of "Other" is a convenience grouping/label that should be avoided, unless it was a prespecified formal category in a database or research instrument. If you use "Other" in your study, please add detail to the manuscript to describe which patients were included in that category.

4. All submissions that are considered for potential publication are run through CrossCheck for originality. The following lines of text match too closely to previously published works.

Please cite <https://doi.org/10.1016/j.ijoa.2020.10.003> for Lines 162-165.

5. Please submit a completed STROBE checklist.

Responsible reporting of research studies, which includes a complete, transparent, accurate and timely account of what was done and what was found during a research study, is an integral part of good research and publication practice and not an optional extra. Obstetrics & Gynecology supports initiatives aimed at improving the reporting of health research, and we ask authors to follow specific guidelines for reporting randomized controlled trials (ie, CONSORT), observational studies (ie, STROBE), observational studies using ICD-10 data (ie, RECORD), meta-analyses and systematic reviews of randomized controlled trials (ie, PRISMA), harms in systematic reviews (ie, PRISMA for harms), studies of diagnostic accuracy (ie, STARD), meta-analyses and systematic reviews of observational studies (ie, MOOSE), economic evaluations of health interventions (ie, CHEERS), quality improvement in health care studies (ie, SQUIRE 2.0), and studies reporting results of Internet e-surveys (CHERRIES). Include the appropriate checklist for your manuscript type upon submission. Please write or insert the page numbers where each item appears in the margin of the checklist. Further information and links to the checklists are available at <http://ong.editorialmanager.com>. In your cover letter, be sure to indicate that you have followed the CONSORT, MOOSE, PRISMA, PRISMA for harms, STARD, STROBE, RECORD, CHEERS, SQUIRE 2.0, or CHERRIES guidelines, as appropriate.

6. Your study uses ICD-10 data, please make sure you do the following:

- a. State which ICD-10-CM/PCS codes or algorithms were used as Supplemental Digital Content.
- b. Use both the diagnosis and procedure codes.
- c. Verify the selected codes apply for all years of the study.
- d. Conduct sensitivity analyses using definitions based on alternative codes.
- e. For studies incorporating both ICD-9 and ICD-10-CM/PCS codes, the Discussion section should acknowledge there may be disruptions in observed rates related to the coding transition and that coding errors could contribute to limitations of the study. The limitations section should include the implications of using data not created or collected to answer a specific research question, including possible unmeasured confounding, misclassification bias, missing data, and changing participant eligibility over time.
- f. The journal does not require that the title include the name of the database, geographic region or dates, or use of database linkage, but this data should be included in the abstract.
- g. Include RECORD items 6.3 and 7.1, which relate to transparency about which codes, validation method, and linkage were used to identify participants and variables collected.

7. Standard obstetric and gynecology data definitions have been developed through the reVITALize initiative, which was convened by the American College of Obstetricians and Gynecologists and the members of the Women's Health Registry Alliance. Obstetrics & Gynecology has adopted the use of the reVITALize definitions. Please access the obstetric data definitions at <https://www.acog.org/practice-management/health-it-and-clinical-informatics/revitalize-obstetrics-data-definitions> and the gynecology data definitions at <https://www.acog.org/practice-management/health-it-and-clinical-informatics/revitalize-gynecology-data-definitions>. If use of the reVITALize definitions is problematic, please discuss this in your point-by-point response to this letter.

8. Because of space limitations, it is important that your revised manuscript adhere to the following length restrictions by manuscript type: Original Research reports should not exceed 22 typed, double-spaced pages (5,500 words). Stated page limits include all numbered pages in a manuscript (i.e., title page, précis, abstract, text, references, tables, boxes, figure legends, and print appendixes) but exclude references.

9. Specific rules govern the use of acknowledgments in the journal. Please note the following guidelines:

- \* All financial support of the study must be acknowledged.
- \* Any and all manuscript preparation assistance, including but not limited to topic development, data collection, analysis, writing, or editorial assistance, must be disclosed in the acknowledgments. Such acknowledgments must identify the entities that provided and paid for this assistance, whether directly or indirectly.
- \* All persons who contributed to the work reported in the manuscript, but not sufficiently to be authors, must be acknowledged. Written permission must be obtained from all individuals named in the acknowledgments, as readers may infer their endorsement of the data and conclusions. Please note that your response in the journal's electronic author form verifies that permission has been obtained from all named persons.
- \* If all or part of the paper was presented at the Annual Clinical and Scientific Meeting of the American College of Obstetricians and Gynecologists or at any other organizational meeting, that presentation should be noted (include the exact dates and location of the meeting).

10. The most common deficiency in revised manuscripts involves the abstract. Be sure there are no inconsistencies between the Abstract and the manuscript, and that the Abstract has a clear conclusion statement based on the results found in the paper. Make sure that the abstract does not contain information that does not appear in the body text. If you submit a revision, please check the abstract carefully.

In addition, the abstract length should follow journal guidelines. The word limit for Original Research articles is 300 words. Please provide a word count.

11. Only standard abbreviations and acronyms are allowed. A selected list is available online at <http://edmgr.ovid.com/ong/accounts/abbreviations.pdf>. Abbreviations and acronyms cannot be used in the title or précis. Abbreviations and acronyms must be spelled out the first time they are used in the abstract and again in the body of the manuscript.

12. The journal does not use the virgule symbol (/) in sentences with words. Please rephrase your text to avoid using "and/or," or similar constructions throughout the text. You may retain this symbol if you are using it to express data or a measurement.

13. ACOG is moving toward discontinuing the use of "provider." Please replace "provider" throughout your paper with either a specific term that defines the group to which are referring (for example, "physicians," "nurses," etc.), or use "health care professional" if a specific term is not applicable.

14. In your Abstract, manuscript Results sections, and tables, the preferred citation should be in terms of an effect size, such as odds ratio or relative risk or the mean difference of a variable between two groups, expressed with appropriate confidence intervals. When such syntax is used, the P value has only secondary importance and often can be omitted or noted as footnotes in a Table format. Putting the results in the form of an effect size makes the result of the statistical test more clinically relevant and gives better context than citing P values alone.

If appropriate, please include number needed to treat for benefits (NNTb) or harm (NNTh). When comparing two

procedures, please express the outcome of the comparison in U.S. dollar amounts.

Please standardize the presentation of your data throughout the manuscript submission. For P values, do not exceed three decimal places (for example, "P = .001"). For percentages, do not exceed one decimal place (for example, 11.1%).

15. Please review the journal's Table Checklist to make sure that your tables conform to journal style. The Table Checklist is available online here: [http://edmgr.ovid.com/ong/accounts/table\\_checklist.pdf](http://edmgr.ovid.com/ong/accounts/table_checklist.pdf).

16. Please review examples of our current reference style at <http://ong.editorialmanager.com> (click on the Home button in the Menu bar and then "Reference Formatting Instructions" document under "Files and Resources"). Include the digital object identifier (DOI) with any journal article references and an accessed date with website references. Unpublished data, in-press items, personal communications, letters to the editor, theses, package inserts, submissions, meeting presentations, and abstracts may be included in the text but not in the reference list.

In addition, the American College of Obstetricians and Gynecologists' (ACOG) documents are frequently updated. These documents may be withdrawn and replaced with newer, revised versions. If you cite ACOG documents in your manuscript, be sure the reference you are citing is still current and available. If the reference you are citing has been updated (ie, replaced by a newer version), please ensure that the new version supports whatever statement you are making in your manuscript and then update your reference list accordingly (exceptions could include manuscripts that address items of historical interest). If the reference you are citing has been withdrawn with no clear replacement, please contact the editorial office for assistance ([obgyn@greenjournal.org](mailto:obgyn@greenjournal.org)). In most cases, if an ACOG document has been withdrawn, it should not be referenced in your manuscript (exceptions could include manuscripts that address items of historical interest). All ACOG documents (eg, Committee Opinions and Practice Bulletins) may be found at the Clinical Guidance page at <https://www.acog.org/clinical> (click on "Clinical Guidance" at the top).

17. Figure 1 - The current figure file may be resubmitted as-is.

18. Authors whose manuscripts have been accepted for publication have the option to pay an article processing charge and publish open access. With this choice, articles are made freely available online immediately upon publication. An information sheet is available at <http://links.lww.com/LWW-ES/A48>. The cost for publishing an article as open access can be found at <https://wkauthorservices.editage.com/open-access/hybrid.html>.

Please note that if your article is accepted, you will receive an email from the editorial office asking you to choose a publication route (traditional or open access). Please keep an eye out for that future email and be sure to respond to it promptly.

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If you choose to revise your manuscript, please submit your revision through Editorial Manager at <http://ong.editorialmanager.com>. Your manuscript should be uploaded in a word processing format such as Microsoft Word. Your revision's cover letter should include the following:

- \* A confirmation that you have read the Instructions for Authors (<http://edmgr.ovid.com/ong/accounts/authors.pdf>), and
- \* A point-by-point response to each of the received comments in this letter. Do not omit your responses to the Editorial Office or Editors' comments.

If you submit a revision, we will assume that it has been developed in consultation with your co-authors and that each author has given approval to the final form of the revision.

Again, your paper will be maintained in active status for 21 days from the date of this letter. If we have not heard from you by Jan 07, 2021, we will assume you wish to withdraw the manuscript from further consideration.

Sincerely,  
Dwight J. Rouse, MD, MSPH  
Editor-in-Chief

2019 IMPACT FACTOR: 5.524  
2019 IMPACT FACTOR RANKING: 6th out of 82 ob/gyn journals

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.





COLUMBIA UNIVERSITY  
MEDICAL CENTER



February 16, 2021

RE: Manuscript Number ONG-20-3085 "Racial and ethnic disparities in failure-to-rescue in the context of severe maternal morbidity in the United States, 1999-2016."

Dwight J. Rouse  
Editor-in-Chief  
Obstetrics & Gynecology

Dear Dr. Rouse.

Thank you for giving us the opportunity to revise and resubmit the above referenced manuscript. In the revised manuscript, we have carefully addressed all the comments made by you and the reviewers. Enclosed please find the explanations as to how we responded to the reviewers along with the revised manuscript. We hope you find our revisions responsive and adequate. Please do not hesitate to contact us should you have any further questions. Thank you for your consideration!

Sincerely yours,

Jean Guglielminotti, MD, PhD.



## GENERAL COMMENTS

**- All submissions that are considered for potential publication are run through CrossCheck for originality. Lines 162-165 of text match too closely to previously published works.**

Lines 162-165 are from one of our published study using the National Inpatient Sample (Guglielminotti J et al. *Temporal trends in the incidence of post-dural puncture headache following labor neuraxial analgesia in the United States, 2006 to 2015. Int J Obstet Anesth* 2020; Published online ahead of print, October 19, 2020) To avoid plagiarism, we have rewritten these sentences.

**- Please submit a completed STROBE checklist.**

We now submit a completed STROBE and RECORD checklist.

**- Your study uses ICD-10 data, please make sure you do the following:**

**a. State which ICD-10-CM/PCS codes or algorithms were used as Supplemental Digital Content.**

All ICD-9 and ICD-10 codes are now reported in the Supplemental Digital Content.

**b. Use both the diagnosis and procedure codes.**

Both ICD-9 and ICD-10 diagnosis and procedure codes are used.

**c. Verify the selected codes apply for all years of the study.**

We have verified that the codes apply for all years of the study

**d. Conduct sensitivity analyses using definitions based on alternative codes.**

We provide a sensitivity analysis in the response to Reviewer 1.

**e. For studies incorporating both ICD-9 and ICD-10-CM/PCS codes, the Discussion section should acknowledge there may be disruptions in observed rates related to the coding transition and that coding errors could contribute to limitations of the study. The limitations section should include the implications of using data not created or collected to answer a specific research question, including possible unmeasured confounding, misclassification bias, missing data, and changing participant eligibility over time.**

We now discuss these limitations in the Limitations section of the revised manuscript.

**f. The journal does not require that the title include the name of the database, geographic region or dates, or use of database linkage, but this data should be included in the abstract.**

The name of the database (National Inpatient Sample) and dates (1999-2017) are included in the revised abstract.

**g. Include RECORD items 6.3 and 7.1, which relate to transparency about which codes, validation method, and linkage were used to identify participants and variables collected.**

We now submit a completed STROBE and RECORD checklist.

**- Standard obstetric and gynecology data definitions have been developed through the reVITALize initiative, which was convened by the American College of Obstetricians and Gynecologists and the members of the Women's Health Registry Alliance. Obstetrics & Gynecology has adopted the use of the reVITALize definitions.**

In the revised manuscript, we now use the reVITALize definitions

**- Because of space limitations, it is important that your revised manuscript adhere to the following length restrictions by manuscript type: Original Research reports should not exceed 22 typed, double-spaced pages (5,500 words). Stated page limits include all numbered pages in a manuscript (i.e., title page, précis, abstract, text, references, tables, boxes, figure legends, and print appendixes) but exclude references.**

The revised manuscript adheres to the length restrictions.

**- Only standard abbreviations and acronyms are allowed. Abbreviations and acronyms cannot be used in the title or précis. Abbreviations and acronyms must be spelled out the first time they are used in the abstract and again in the body of the manuscript.**

We follow the Journal's instructions for abbreviations in the revised manuscript.

**- The journal does not use the virgule symbol (/) in sentences with words. Please rephrase your text to avoid using "and/or," or similar constructions throughout the text. You may retain this symbol if you are using it to express data or a measurement.**

We have removed the virgule symbol (/) and "and/or" from the revised manuscript.

**- ACOG is moving toward discontinuing the use of "provider." Please replace "provider" throughout your paper with either a specific term that defines the group to which are referring (for example, "physicians," "nurses," etc.), or use "health care professional" if a specific term is not applicable.**

We have replaced the word "provider" with "health care professional" in the revised manuscript.

**- In your Abstract, manuscript Results sections, and tables, the preferred citation should be in terms of an effect size, such as odds ratio or relative risk or the mean difference of a variable between two groups, expressed with appropriate confidence intervals. When such syntax is used, the P value has only secondary importance and often can be omitted or noted as footnotes in a Table format. Putting the results in the form of an effect size makes the result of the statistical test more clinically relevant and gives better context than citing P values alone.**

We now present effect size estimates and 95% confidence intervals throughout the revised manuscript.

**- Please standardize the presentation of your data throughout the manuscript submission. For P values, do not exceed three decimal places (for example, "P = .001"). For percentages, do not exceed one decimal place (for example, 11.1%).**

We have standardized the presentation of our data (% , P-value) throughout the revised manuscript.

**- Please review examples of our current reference style. Include the digital object identifier (DOI) with any journal article references and an accessed date with website references. Unpublished data, in-press items, personal communications, letters to the editor, theses, package inserts, submissions, meeting presentations, and abstracts may be included in the text but not in the reference list.**

We have updated our references according to the Journal's reference instructions. The DOI is included for journal article references and an access date is provided for website references.

**- In addition, the American College of Obstetricians and Gynecologists' (ACOG) documents are frequently updated. These documents may be withdrawn and replaced with newer, revised versions. If you cite ACOG documents in your manuscript, be sure the reference you are citing is still current and available.**

We have checked that the ACOG document we quote is still current and available (Committee Opinion No. 649 Summary: racial and ethnic disparities in Obstetrics and Gynecology).

## RESPONSE TO REVIEWER 1

We thank the reviewer for these very helpful suggestions!

The major changes in the revised analysis are as follows:

- The extension of the study period to 2017 with a new study period of 1999-2017 instead of 1999-2016.
- The inclusion of women of all ages instead of restricting the analysis to women aged 10 to 45 years of age.
- The inclusion of women with missing information on race and ethnicity with the creation of a "Missing" race and ethnicity category.
- The analysis of the incidence and temporal trends of severe maternal morbidity, overall and according to race and ethnicity.

***- One weakness of the paper is the lack of any data on SMM concurrent to the FTR data. It would be better rounded out to at least have the temporal trend of SMM.***

In the revised manuscript, we now present the incidence and temporal trends of severe maternal morbidity (SMM), overall and according to race and ethnicity.

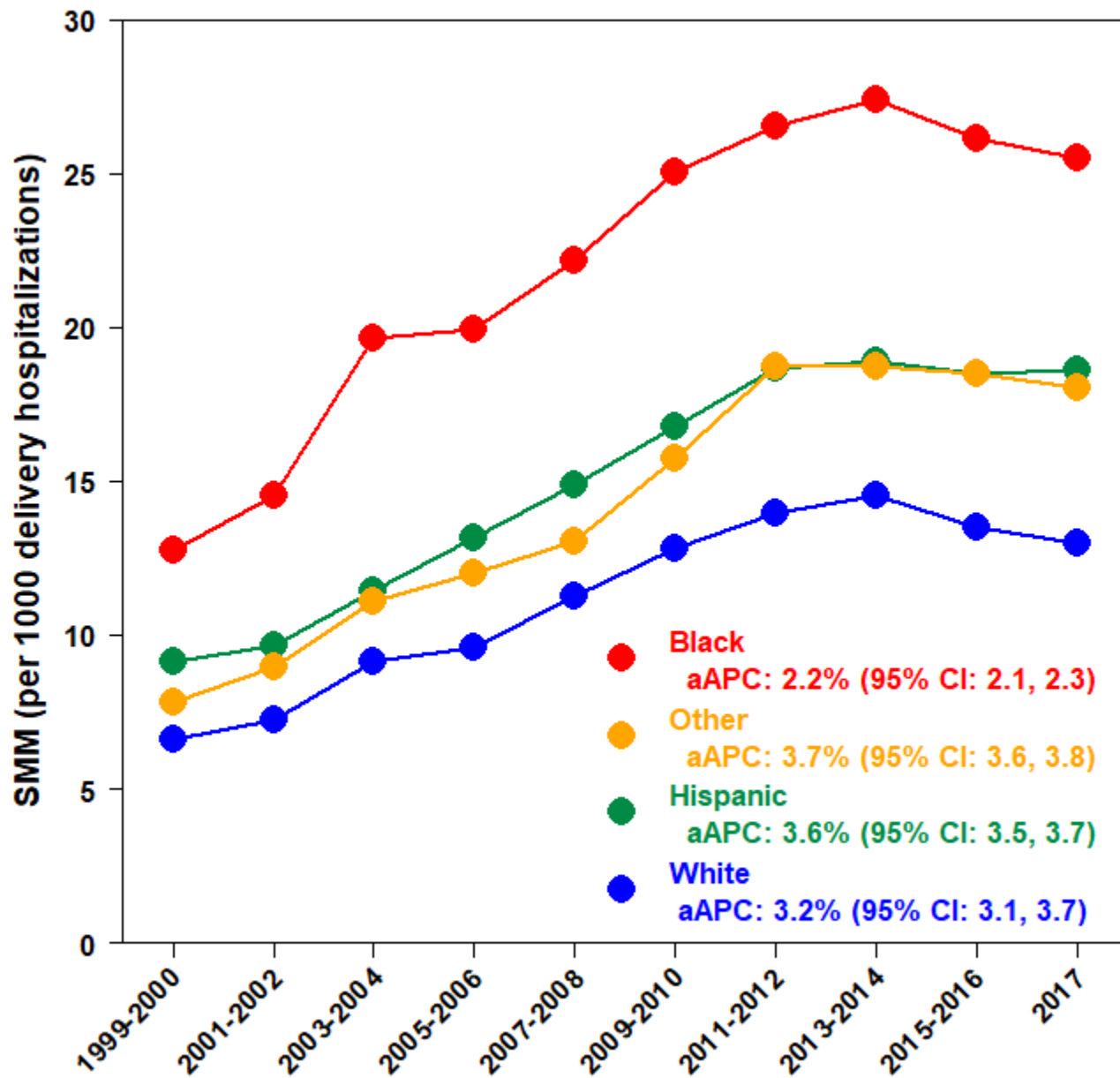
The overall SMM rate was 13.4 per 1000 delivery hospitalizations (95% CI: 13.3, 13.5). The SMM rate in Black women (22.4 per 1000; 95% CI: 22.2, 22.6) was higher than in White women (11.2 per 1000; 95% CI: 11.1, 11.3). The rate was also higher in Hispanic women (15.0 per 1000; 95% CI: 14.9, 15.1) and in Other race and ethnicity women (14.7 per 1000; 95% CI: 14.5, 14.8). It was lower in Missing race and ethnicity women (10.9 per 1000; 95% CI: 10.8, 11.0). These results are now presented in the Results section of the revised manuscript and in Appendix 7.

During the study period, a statistically significant increase in the SMM rate was observed, from 7.6 per 1000 in 1999 to 16.5 per 1000 in 2017, corresponding to an adjusted annual percent change of +3.24% (95% CI: 3.20, 3.28). The increase was observed for each of the 5 racial and ethnic groups (White, Black, Hispanic, Other, and Missing) (see **Figure 1** below). Beginning in 2012, we observed a plateau in the incidence of SMM and even a decrease for White, Black, and Other women. These results are now presented in the Results section of the revised manuscript, Figure 2A, and Appendix 10.

***- In addition, the percentage of deaths captured by only including SMM cases for the definition of FTR is important.***

We now present the number of deaths 1) during delivery hospitalizations (n = 4910), and 2) during delivery hospitalizations with SMM (n = 4328) in the Results section and in Figure 1 of the revised manuscript. Deaths during hospitalizations with SMM accounted for 88.1% of all deaths (4328/4910).

**Figure 1:** Temporal trends in the incidence of severe maternal morbidity during delivery hospitalizations in the National Inpatient Sample, 1999-2017. For clarity of the Figure, trends are reported per 2-year interval and the trends for women with missing information on race and ethnicity are not presented. (Abbreviations: aAPC: adjusted annual percent change; CI: confidence interval).



**- In the entire paper, please clarify that the whole population studied has SMM. "recorded" is not a very clear word and should not be used. AND Results Line 233: I think when you say "recording SMM" you mean "with SMM" - "recording SMM" is confusing terminology**

The correction is made throughout the revised manuscript.

**- Abstract: Please clarify that the entire population has SMM. In the results it appears that the 4 per 1000 women died with FTR. This is obviously incorrect.**

In the revised abstract, we now clarify that the entire population has SMM and that 4 per 1000 women with SMM died.

**- Introduction Line 86: Please clarify that death after a complication is the definition for FTR; this sentence is unclear AND Introduction Line 92: I would not call data that overlaps with this paper and is only 6 years older "dated" - there are other differences from your prior study that can be better described**

We have rewritten the Introduction following the reviewer's suggestions.

**- Materials and Methods: There should be some overview of the study design introduced in the beginning of this section**

We now provide some overview of the study design at the beginning of the Methods section.

**- Materials and Methods Line 99: Please provide citations for the STROBE and RECORD guidelines.**

References are now provided

**- Materials and Methods: Please follow standard rules for acronyms with the first use of the acronym defining it (NIS on line 101).**

The correction is made throughout the revised manuscript.

**- Materials and Methods Line 119: Does this mean only cases of SMM were included? This is unclear.**

We have clarified the definition of the study sample in the revised manuscript as follows: "Only delivery hospitalizations with SMM from January 1999 to December 2017 were included in the study sample."

**- Materials and Methods Line 126: Information on sensitivity and specificity of the CDC SMM algorithm can go in the discussion**

This information is now presented in the Limitations section of the revised manuscript.

**- Materials and Methods Line 131: This outcome definition is unclear because what is a "complication." This needs to be more clearly defined. If this is SMM as defined by the CDC, state that.**

In the revised manuscript, we have clarified the outcome definition as follows: "The outcome was the FTR rate. FTR was defined as death in women with SMM, with SMM defined using the CDC criteria."

**- Materials and Methods Line 137: Explanations of race and ethnicity are not appropriate for the materials and methods section; defining the exposure is sufficient.**

In the revised manuscript, we have simplified the description of race and ethnicity as follows: "The exposure of interest was patient race and ethnicity categorized as follows: 1) non-Hispanic White (hereafter referred to as White), 2) non-Hispanic Black (Black), 3) Hispanic, 4) non-Hispanic other (Other), and 5) Missing."

**- Materials and Methods Line 155 and Supplemental Table 1, only 654.2 and O34.21 are listed for previous cesarean delivery. I have two questions. 1 -Were the nested codes included in this analysis (for example O34.211? 2-In addition, was this validated against other codes? You could cross-tabulate with O82 (over 95% of patients with a prior cesarean have a repeat cesarean). I mention this validation because it is easy to perform and understand that internal validation of most ICD codes is impossible.**

The codes used to identify previous a cesarean delivery were nested (654.2x and O34.21xx). This point is clarified in all Supplemental Tables describing ICD codes.

We also cross-tabulated the ICD-10 code for previous cesarean delivery (O34.21xx) with the ICD-10 codes for cesarean delivery (diagnosis code O82.xxxx, and procedure codes 10D00Z0, 10D00Z1, 10D00Z2) using data for the year 2016. Among the 39,103 discharges recording previous cesarean delivery in 2016, 5762 had a repeat cesarean delivery, yielding a rate of vaginal birth after a cesarean delivery of 14.7% (95% CI: 14.4, 15.1). This rate is close to the 12.4% rate reported by Osterman et al. using birth certificate data for the year 2016 (NCHS Data Brief No. 359; <https://www.cdc.gov/nchs/data/databriefs/db359-h.pdf> ).

**- Materials and Methods Line 209: Why was PROM chosen as an independent variable in the adjusted analysis?**

In the revised analysis, PROM is no longer used for adjustment.

**- Results Line 235: Given that 15% were excluded for missing rare and ethnicity information, I would consider including this group as it is likely informative as misclassification of race is more common in minority races (Smith PMID 21092309) and missing information is associated with poor health outcomes in administrative databases.**

In the revised analysis, we have included women with missing information on race and ethnicity and created a “Missing” race and ethnicity category. Results for this “Missing” category are presented throughout the manuscript.

**- Results: Figure 1A and 1B - why are the units different on the y-axes? These should be the same.**

We now use the same unit in Figure 2A (trends in the incidence of SMM) and Figure 2B (trends in the incidence of FTR).

**- Discussion: Please address the strong difference in FTR between patients with previous cesarean delivery. This is unexpected as adverse outcomes are more common in patients with previous cesarean deliveries. In addition, it is interesting that 51% of FTR were non-emergent CD, with a greater proportion of non-emergent CD than the non-FTR group.**

We agree that women with a history of previous cesarean delivery are at higher risk of peripartum complications compared with women without a history of previous cesarean delivery. However, the increased risk seems to be limited to women who had a vaginal birth after a previous cesarean section and not to women who had an elective repeat cesarean section (Fitzpatrick K et al. *PLoS Med* 2019;16: e1002913. <https://doi.org/10.1371/journal.pmed.1002913>). In addition, women with a history of previous cesarean delivery are probably more closely monitored during labor and delivery than women without prior cesarean delivery (ACOG Practice Bulletin No. 205: Vaginal Birth After Cesarean Delivery); this closer monitoring may explain the lower risk of failure-to-rescue associated with previous cesarean delivery observed in our study. Because of space limitations and the extensive changes in the revised manuscript, we don't discuss this point.

**- Discussion Line 292: The decrease in FTR was much more pronounced for black patients in the crude chart. This is the observed, actual number despite lack of adjustment and should be discussed. Reasons for the difference between the crude and adjusted rates should be discussed.**

**AND Overall, the discussion is lacking in direction and interest. For example, you mention that early warning signs have been introduced, but have these had an impact? What may have had an impact on FTR? The discussion can use significant improvement.**

The Discussion section has been rewritten to address the reviewers' concerns.

## RESPONSE TO REVIEWER 2

### **- Abstract Line 45: Consider rephrasing to improve flow particularly first 6 words.**

We thank the reviewer for this suggestion. The abstract has been rewritten in the revised manuscript.

### **- Introduction Line 78: What is a lower quality hospital?**

We thank the reviewer for identifying this imprecision. In the revised Introduction, we say “Hospitals with lower performance on maternal safety indicators (e.g., severe maternal morbidity rate)” instead of “lower quality hospitals”.

### **- Introduction Line 88: Overview hospital characteristics. Would like to see stronger explanation of using FTR as an obstetrical quality marker, particularly because this is not a familiar concept in obstetrical literature as pointed out would be nice to better walk readers through the background (even beyond citations)**

We now provide more background information on the concept of failure-to-rescue as applied to maternal care.

### **- Material and Methods Line 122: Why were age parameters chosen, particularly excluding patient's >45yo advanced maternal age pregnancies and their impact on SMM.**

We thank the reviewer for identifying this limitation. In the revised analysis, we now analyze women of all age instead of restricting the analysis to women aged 10 to 45 years of age.

The major changes in the revised analysis are as follows:

- The extension of the study period to 2017 with a new study period of 1999-2017 instead of 1999-2016.
- The inclusion of women with missing information on race and ethnicity with the creation of a “Missing” race and ethnicity category.
- The analysis of the incidence and temporal trends of severe maternal morbidity, overall and according to race and ethnicity.

### **- Material and Methods Line 125: Expand on the maternal complications and procedures.**

We have expanded our description of maternal complications and procedures.

### **- Material and Methods Line 138: You describe race or ethnicity as a proxy for socioeconomic determinants of health and structural racism but later in your limitations Line 296 -300 you describe that NIS data do not contain individual information on this and therefore this is a limitation. May consider revising this as you contradict your later statement.**

We thank the reviewer for identifying this contradiction. The manuscript has been revised accordingly.

### **- Material and Methods Line 163: Does the NIS describe what constitutes a small, medium or large hospital. Can this be provided?**

Thresholds used to define hospital bed size categories (small, medium, or large) depend on the hospital census region, hospital location (rural or urban), and hospital teaching status (teaching or non-teaching). Thresholds are presented in Table 2 below and in the new **Appendix 4**.



**Table 2:** Number of hospital beds according to the 3 categories of the hospital bed size variable (small, medium, and large) in the National Inpatient Sample.

	Small	Medium	Large
<b>Northeast Region</b>			
Rural	1-49	50-99	≥ 100
Urban non-teaching	1-124	125-199	≥ 200
Urban teaching	1-249	250-424	≥ 425
<b>Midwest Region</b>			
Rural	1-29	30-49	≥ 50
Urban non-teaching	1-74	75-174	≥ 175
Urban teaching	1-249	250-374	≥ 375
<b>Southern Region</b>			
Rural	1-39	40-74	≥ 75
Urban non-teaching	1-99	100-199	≥ 200
Urban teaching	1-249	250-449	≥ 450
<b>Western Region</b>			
Rural	1-24	25-44	≥ 45
Urban non-teaching	1-99	100-174	≥ 175
Urban teaching	1-199	200-324	≥ 325

**- Material and Methods Line 190: Consider changing "in Whites" to "racial and ethnic minority patient group" and "White patient group" for congruence AND Line 194 Consider changing phrase "racial and ethnic minority group to match later phrase of "White women" in line 194. These patients are also women want to ensure similar description when speaking of minority patients versus White patients.**

The correction is made in the revised manuscript.

**- Discussion: Would also mention the limitation of using 1CD9 or 10 codes to determine diagnosis given potential for user differences**

We now discuss the use of both ICD-9 and ICD-10 codes in the Limitations paragraphs of the revised manuscript.

**- Discussion Line 292: What are some of those changes that improved outcomes? How can that be utilized to improve quality of care? AND - Discussion Line 337: This is a major limitation, how do you accommodate for this? AND Discussion Line 339: Given FTR's association with hospital characteristics, database study seems to be difficult method to really explore hospital characteristics and potential impact on SMM AND Discussion: There are significant limitations to the use of the database and complete access to data regarding patients, hospitals and outcomes to feel that impactful change regarding care can be made. AND Conclusion Line 350 352: Difficult to ascertain from data presented exactly what were the cause of death or circumstances around a person's for patient's within the database and how these could be avoided**

The Discussion section has been rewritten to address the reviewers' concerns.

### RESPONSE TO REVIEWER 3

**- Introduction: The authors cite the Friedman AJOG study that asks a similar question, and refer to it as "dated" however the current study includes the same time period as that study and only extends it by 6 more years. Are the readers to infer that the majority of the data in the current manuscript is also dated? Why not limit the current manuscript to 2010 and beyond, rather than going back to 1999?**

We thank you for identifying this imprecision in wording. In the revised manuscript, the Introduction has been extensively revised. We elected to include the data from 1999 but extended our analysis to 2017. We feel that reporting the trends over this almost two-decade period is important.

**- Methods: please clarify in the description of the database - if a patient is brought to a hospital extremely ill and dies shortly after arrival, for example if they are receiving CPR en route and pronounced dead shortly after admission, are they included? It would be helpful to determine whether some of these may represent cases where the situation was too far advanced for the hospital staff to be able to intervene, and if so what proportion of cases.**

We thank the reviewer for identifying this limitation of our study. Unfortunately, the NIS does not provide information on vital signs or resuscitation maneuvers performed before the patient arrived at the hospital. To take into consideration this limitation, we conducted a sensitivity analysis excluding women with severe maternal morbidity who were transferred from another acute care hospital or from another type of facility and may have benefited from resuscitation maneuvers during their transfer. Women transferred from another acute care hospital had a 2.9-fold increased risk of failure-to-rescue compared to women who were not transferred in; women who were transferred from another type of facility had an 1.6-fold increased risk (**Table 1** in the revised manuscript and **Appendix 6**).

In this sensitivity analysis, racial and ethnic minority women were still at an increased risk of failure-to-rescue. Results of this analysis are presented in the Results section and in **Appendix 9**.

**- Results: the authors acknowledge that the rates of FTR have gone down over the study time period, in all racial/ethnic categories. It would be beneficial rather than providing only the data for the first and last year to provide some other interval data for the rate in the body of the manuscript. Although this is represented clearly in Figure 1, some additional information in the manuscript body would be helpful. Also relevant to this point, on visual inspection of Figure 1, the change in crude FTR rate particularly for black women was quite dramatic from 1999 to 2009; the authors should consider calculating their regressions with the subset of data from 2009-2016 and providing the results of that sub-analysis.**

As suggested by the reviewer, we now analyze the temporal trends in the incidence to failure-to-rescue over the entire study period (1999-2017) and over the 2009-2017 time period. Trends are assessed using the adjusted annual percent change (APC). This analysis is presented in Table 3 below and in the Results section and Supplemental Tables 11 and 12 of the revised manuscript.

After restricting the study period to 2009-2017, a statistically significant decrease in the FTR rate was still observed with an adjusted APC of -5.4% (95% CI: -7.1, -3.6). The decrease was observed among White women (APC: -9.8%; 95% CI: -12.8, -6.7), Black women (APC: -3.6%; 95% CI: -6.9, -0.1), and Hispanic women (APC: -10.3%; 95% CI: -14.2, -6.3). No change was observed for women with missing race and ethnicity data (APC: -1.7%; 95% CI: -8.0, 4.9) and an increase was observed for women of other race and ethnicity (APC: +7.9%; 95% CI: 2.2, 13.9).

**Table 3:** Annual percent change for the rate of failure-to-rescue from severe maternal morbidity in the National Inpatient Sample, 1999-2017.

	Main analysis (1999-2017)		Sensitivity analysis (2009-2017)	
	APC (95% CI) (*)	P-value	APC (95% CI) (*)	P-value
All women	-7.78 (-8.34, -7.23)	< 0.001	-5.36 (-7.12, -3.57)	< 0.001
White	-7.49% (-8.50, -6.48)	< 0.001	-9.81% (-12.76, -6.75)	< 0.001
Black	-8.20% (-9.22, -7.17)	< 0.001	-3.58% (-6.94, -0.12)	0.043
Hispanics	-8.63% (-9.93, -7.29)	< 0.001	-10.35% (-14.24, -6.28)	< 0.001
Other	-7.27% (-8.94, -5.56)	< 0.001	7.91% (2.22, 13.89)	0.006
Missing	-6.60% (-8.29, -4.89)	< 0.001	-1.72% (-7.96, 4.94)	0.603

*Abbreviations:* APC: annual percent change; CI: confidence interval.

(\*) The annual percent change can be interpreted as the percent change in the incidence of failure-to-rescue per year. It is calculated as  $100 \times (\exp^{\beta} - 1)$ , where  $\beta$  is the regression coefficient for the year of delivery from a weighted logistic regression model with a Poisson distribution. In this model, failure-to-rescue is the dependent variable and the year of delivery (treated as a continuous variable) the independent variable. The model is further adjusted for the 12 following patient- and hospital-level characteristics: 1) maternal age, 2) race and ethnicity, 3) insurance type, 4) quartile median household income for the patient ZIP code of residence, 5) previous cesarean delivery, 6) admission resulting from transfer from another hospital or facility, 7) admission during a weekend, 8) induction of labor, 9) delivery mode, 10) hospital location and teaching status, 11) hospital bed size, and 12) hospital region.

**- Discussion lines 310-328: this information seems beyond the scope of this manuscript, consider removing or condensing.**

This information has been condensed in the revised manuscript.

## RESPONSE TO THE STATISTICAL EDITOR

**- Table 1: For the column "No FTR", the sum of race ethnicity subsets does not equal the column total. For other subsets with missing data, should cite the n (%) missing in each column, not just the total # missing.**

We thank the reviewer for identifying this mistake. Values have been checked in revised Tables and now sum correctly. We now present the number (%) of missing values for each variable.

**- Table 3: Suggest organizing Table 3 exactly like Table 2. The use of the absolute rate (when that rate is actually the adjusted, rather than the crude rate) does not seem as clinically useful as expressing the results in terms of rates per 1000 or as rate ratios.**

Because of the extensive revisions, Table 2 (crude rate of failure-to-rescue) has been moved to the Supplemental Digital Content (now Appendix 8).

Table 3 (now Table 2 in the revised manuscript) has been reorganized according to the reviewer's suggestions and the adjusted rate has been deleted from the Table.

**- Table 4: Would be informative to compare the probability ratios for urban non-teaching and rural hospitals using urban teaching as the referent, for each of the racial subsets.**

We thank the reviewer for this suggestion. In **Table 4** below (Table 3 in the revised manuscript), we now present the adjusted rate of failure-to-rescue according to hospital category. We chose to report the adjusted rate instead of the adjusted rate ratio because it does not require a reference category and allows a direct comparison across the 9 categories of the contingency table.

Within each of the three hospital categories (rural, urban non-teaching, and urban teaching), a similar trend was observed with a higher failure-to-rescue rate in Black women followed by women with missing race and ethnicity, women of Other race and ethnicity, and Hispanic.

The failure-to-rescue rate for each racial and ethnic minority category was higher in urban teaching hospitals compared with urban non-teaching hospitals and with rural non-teaching hospitals.

**Table 4:** Adjusted rate of failure-to-rescue rate according to hospital location and hospital teaching status in the National Inpatient Sample 1999-2017.

	Rural hospitals	Urban non-teaching hospitals	Urban teaching hospitals
White	1.83 (1.81, 1.85)	3.47 (3.45, 3.49)	3.94 (3.92, 3.96)
Black	3.25 (3.19, 3.31)	6.21 (6.16, 6.27)	6.48 (6.44, 6.52)
Hispanics	1.86 (1.82, 1.90)	3.84 (3.81, 3.86)	3.85 (3.82, 3.87)
Other	2.43 (2.38, 2.49)	4.97 (4.92, 5.02)	5.05 (5.00, 5.09)
Missing	2.80 (2.77, 2.83)	4.77 (4.73, 4.81)	5.78 (5.74, 5.83)

*Footnote:* The rate is expressed per 1000 discharges (95% confidence interval). Thirteen patient- and hospital-level characteristics were used for adjustment: 1) race and ethnicity, 2) maternal age, 3) health insurance type, 4) quartile of median household income for the patient ZIP code of residence, 5) previous cesarean delivery, 6) admission resulting from transfer from another hospital or facility, 7) admission during a weekend, 8) induction of labor, 9) delivery mode, 10) hospital location and teaching status, 11) hospital bed size, 12) hospital region, and 13) year of delivery.

**- Fig 1A, 1B: As stated by the Authors, there does appear to be significant improvement in narrowing the gap among the racial ethnic groups in the later years of the study. If one were to analyze data for the time period beginning in 2008, would the same conclusions hold?**

To take into consideration the reviewer's comment (which was also raised by Reviewer 3), we now analyze the temporal trends in the incidence to failure-to-rescue over the entire study period (1999-2017) and over the 2009-2017 time period. Trends are assessed using the adjusted annual percent change (APC). This analysis is presented in Table 3 in the Response to Reviewer 3, and in the Results section and Supplemental Tables 11 and 12 of the revised manuscript.

After limiting the study period to 2009-2017, a statistically significant decrease in the FTR rate was still observed with an adjusted APC of -5.4% (95% CI: -7.1, -3.6). The decrease was observed among White women (APC: -9.8%; 95% CI: -12.8, -6.7), Black women (APC: -3.6%; 95% CI: -6.9, -0.1), and Hispanic women (APC: -10.3%; 95% CI: -14.2, -6.3). No change was observed for women with Missing race and

ethnicity (APC: -1.7%; 95% CI: -8.0, 4.9) and an increase was observed for women of Other race and ethnicity (APC: +7.9%; 95% CI: 2.2, 13.9).

**- General: How was race/ethnicity determined in these data? Self-identified? There does not appear to be missing data by race, apart from a minor arithmetic difference. Is that true?**

In the initial version of the manuscript, discharges with missing information on race and ethnicity were excluded from the study sample. In the revised analysis and manuscript, we now include women with missing information on race and ethnicity and have created a “Missing” race and ethnicity category. Results for this “Missing” category are presented throughout the manuscript.

Race and ethnicity are reported in the National Inpatient Sample (NIS) as provided by each participating state (<https://www.hcup-us.ahrq.gov/db/vars/race/nisnote.jsp>). The NIS does not indicate whether race and ethnicity was self-reported or not. We clarify this point in the Methods section of the revised manuscript.

**- Notwithstanding that there may be unmeasured covariates that also could have affected the outcomes (which should be included in the limitations section), the Authors should supplement their analysis of adjusting the FTRs for the 12 variables cited in Table 3 by a matching algorithm to corroborate the associations demonstrated.**

In the analysis, we use the 12 available patient- and hospital-level characteristics with a standardized mean difference greater than 10% in the univariate analysis to adjust for the risk of failure-to-rescue, along with the racial and ethnic category. We now discuss the reviewer’s comments regarding the unmeasured covariates in the Limitations section.

We also estimated the adjusted odds ratio for failure-to-rescue associated with race and ethnicity using the propensity score method. Results are presented in **Table 5** below. The analysis was conducted independently for 3 racial and ethnic minority categories (non-Hispanic Black, Hispanic, and non-Hispanic Other), with non-Hispanic White women being the reference category. The propensity score estimated the individual probability of being a non-Hispanic Black woman (or a Hispanic woman or a non-Hispanic Other woman) using all the patient- and hospital-level characteristics reported in Table 1 of the revised manuscript. Matching used the nearest neighborhood approach with 1 control for 1 case, and a caliper of 0.2. The odds ratio for failure-to-rescue associated with race and ethnicity was estimated using a weighted logistic regression model with a Poisson distribution. In this model, failure-to-rescue was the dependent variable, the racial and ethnic category the independent variable, and the individual discharge weights the weights. The model was further adjusted for the year of delivery because of a persistent imbalance after matching (standardized mean difference > 10%). Because of the extensive revisions and space limitations, we don’t present this analysis in the revised manuscript.

**Table 5:** Adjusted odds ratio-for-failure to rescue associated with race and ethnicity using the propensity score method. Results are expressed as unweighted count (%).

<b>ANALYSIS 1: Non-Hispanic Black women versus non-Hispanic White women</b>						
Non-Hispanic Black women			Non-Hispanic White women			Adjusted odds ratio (95% CI)
No. of women	No. of death	Incidence (per 1000)	No. of women	No. of death	Incidence (per 1000)	
30,359	212	7.0	30,359	115	3.8	<b>1.67 (1.51, 1.86)</b>
<b>ANALYSIS 2: Hispanic women versus non-Hispanic White women</b>						
Hispanic women			Non-Hispanic White women			Adjusted odds ratio (95% CI)
No. of women	No. of death	Incidence (per 1000)	No. of women	No. of death	Incidence (per 1000)	
30,662	125	4.1	30,662	125	4.1	<b>0.93 (0.83, 1.05)</b>
<b>ANALYSIS 3: Non-Hispanic Other women versus non-Hispanic White women</b>						
Non-Hispanic Other women			Non-Hispanic White women			Adjusted odds ratio (95% CI)
No. of women	No. of death	Incidence (per 1000)	No. of women	No. of death	Incidence (per 1000)	
19,270	91	4.7	19,270	78	4.0	<b>1.17 (1.02, 1.34)</b>

Abbreviations: No.: number; CI: confidence interval