

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)*
- Email correspondence between the editorial office and the authors*

**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.

Date: Nov 09, 2018
To: "Marissa Platner" [REDACTED]
From: "The Green Journal" em@greenjournal.org
Subject: Your Submission ONG-18-1874

RE: Manuscript Number ONG-18-1874

Gestational weight gain and severe maternal morbidity: The role of prepregnancy weight?

Dear Dr. Platner:

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 Nov 30, 2018, we will assume you wish to withdraw the manuscript from further consideration.

REVIEWER COMMENTS:

Reviewer #1: The authors examine whether women with more or less weight gain than recommended by the Institute of Medicine guidelines are at increased risk of severe maternal morbidity. This is an important question that may not be answered adequately given limitations of the authors' approach:

1. Some of the SMM outcomes identified are intertwined with gestational weight gain, and there does not appear to be an attempt to account for or acknowledge this interaction. For example, conditions that are known to cause or result from significant fluid retention, primarily heart failure, pulmonary edema, and preeclampsia/eclampsia, were reported to be associated with greater gestational weight gain. The implication in this paper is that gestational weight gain may have caused these forms of severe maternal morbidity, but association is not causation, and the reverse may be true in these cases.
2. The authors restricted gestational age to 37 to 45 weeks, which is a form of conditioning on gestational age. In doing so, this changes the denominator at risk, which substantially changes the statistical estimates. This is a serious limitation that should be acknowledged and discussed.
3. By restricting gestational age to 37 to 45 weeks, the study does not address the effect of non-recommended weight gain on SMM at earlier gestational ages. Conclusions are restricted to women who achieved 37 weeks. This limitation should also be acknowledged.
4. The IOM recommendations for each BMI category were used appropriately. However, the IOM categories are specific to BMI category so weight gains of 1-19 or 20 lbs above recommendations mean something relatively different for each category, which should be discussed.
5. Given the above limitations, the conclusion that high weight gain is harmful only among underweight or normal weight women ("Precis") seems inappropriate. Generally across the board for perinatal outcomes, the risk is highest in low gaining underweight and high gaining obese women.
6. There are multiple comparisons made without numbers given for specific less common conditions, raising questions of power. For example, how many women were included from the low BMI group gained 20 lbs above recommendations and experienced eclampsia?
7. A definition of "neighborhood" should be given.

Reviewer #2: This is a population based cross sectional study using New York City discharge data linked to birth certificate. The worst outcomes are observed in women whose gestational weight gain is in excess of IOM guidelines especially those with low or normal pre-pregnancy BMI.

Main issues:

- 1- It is interesting to see that "Elevated BMI were not found to be at increased odds of overall SMM". Did the author evaluated the different subgroups with higher BMI? Is that still true for women with BMI >35, BMI > 40 or BMI >45?
- 2- With only 35.1% of women gain within the recommended range by the IOM! Are those guidelines realistic and can be done or they need to be modified? What are the evidence behind those guidelines, are they only based on expert opinion?

Specific issues:

- 1- Introduction: Line 124, did you mean "adequate" or it is correct as is "inadequate"
- 2- Methods:
 - a. Line 171-175: Please provide a reference for the categories of BMI used in this study.
 - b. Please explain why length of hospitalizations with certain length is considered part of the process of defining SMM?!
 - c. Please move the statement about IRB exemption (Line 220-221) to the starting paragraph of the methods!
- 3- Results, Tables, Figures, Appendices
 - a. Missing weight and BMI need a little more evaluation, how different the outcomes in this group compared to the main population used in the analysis?
 - b. Unlike the reference in the introduction, in-adequate weight gain was associated with higher SMM. Please discuss!
 - c. For table 2, why ≥ 20 lbs above IOM guidelines were selected?
 - d. For table 5, It might be important to subcategorize BMI >30. I would recommend adding those subgroups instead or in addition to the combined category!
- 4- Discussion:
 - a. With only 35% of women having the recommended weight gain. Based on the date, it is more of weight gain than the actual BMI. If we believe the importance of the adequate weight gain, how this can be promoted?
 - b. Line 309: the study did not include stratification by subgroups of BMI >35, >40 and >45. Please discuss!

Reviewer #3: This study examines the role of GWG in severe maternal morbidity (SMM) and given the increase in maternal mortality is an important issue.

The methods are well written although authors should include their treatment of missing data in their methods section. What they identify as a 'sensitivity analysis' is really their statistical methods. A sensitivity analysis would examine a sub-population or omit a sub-set of the study population and observe whether it changed inference of the results.

Results: L230 should read 'have low rate of poverty'. Other than that, results summarize the data well. Tables are easy to read but presumably will be re-formatted without internal lines.

Discussion is a bit disappointing in that it ignores the study by Lisonkova S et al JAMA 2017; 318:1777 which focused on BMI and SMM. Interestingly, they found the exact same overall rate SMM. This reviewer would have liked the authors to discuss what this study adds to that one and where results are similar or may differ. These kinds of studies require large numbers using administrative data that by its nature has some degree of misclassification. Given that the misclassification should be non-differential, it should provide a modest degree of certainty about the results. The authors acknowledge limitations of the data.

STATISTICAL EDITOR COMMENTS:

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

Table 2: Should include counts as n(%), rather than simply as %s to put results in context. Should note as limitations the large sample sizes leading to statistical differences that may have no prospective clinical value. (for example, chronic heart disease prevalence varying from 0.3 to 0.4% among the 4 cohorts, yet the $p < 0.001$)

Table 3: Should include counts as n(%), rather than simply as %s to put results in context.

Tables 4,5: Should include supplemental material to contrast the aORs with crude ORs. There are many comparisons in this Table, with no adjustment for multiple hypothesis testing. While the Authors have eliminated some estimates due to low counts, many more of the counts are too few to allow for multiple adjustment. The biggest single component of the SMM (essentially comprising ~ 1/2, while each of the other individual components are at least an order of magnitude less frequent) is blood transfusion, but this may be largely explained by the higher rates of cesarean deliveries. To what extent are the findings due to that feature alone?

Appendix Suppl Table 1: The issue of subset analyses is compounded by these further subdivisions. Most of the individual components to SMM are underpowered and the NS associations cannot be generalized.

ASSOCIATE EDITOR COMMENTS:

Thank you very much for submitting your work to Obstetrics & Gynecology. We are happy to consider your work further if in your revision:

- 1) You completely and explicitly address the concerns of Reviewer #1;
- 2) You de-emphasize relative risk and emphasize the trivial increase in absolute risk with increased weight gain. Your ORs are very low (many, if fact, in ranges explicable by residual confounding) and they apply to very low absolute risks.

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, as well as subsequent author queries. 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:

1. OPT-IN: Yes, please publish my response letter and subsequent email correspondence related to author queries.
2. OPT-OUT: No, please do not publish my response letter and subsequent email correspondence related to author queries.

2. Author Agreement Forms: Please note the following issues with your forms. Updated or corrected forms should be submitted with the revision.

Xiao Xu, Ph.D., M.A. - No Author Agreement Form submitted with the submission.

3. Our journal requires that all evidence-based research submissions be accompanied by a transparency declaration statement from the manuscript's lead author. The statement is as follows: "The lead author* affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained."

*The manuscript's guarantor.

If you are the lead author, please include this statement in your cover letter. If the lead author is a different person, please ask him/her to submit the signed transparency declaration to you. This document may be uploaded with your submission in Editorial Manager.

4. 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 will be transitioning as much as possible to use of the reVITALize definitions, and we encourage authors to familiarize themselves with them. The obstetric data definitions are available at <http://links.lww.com/AOG/A515>, and the gynecology data definitions are available at <http://links.lww.com/AOG/A935>.

5. 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 appendixes).

Please limit your Introduction to 250 words and your Discussion to 750 words.

6. Titles in Obstetrics & Gynecology are limited to 100 characters (including spaces). Do not structure the title as a declarative statement or a question. Introductory phrases such as "A study of..." or "Comprehensive investigations into..."

or "A discussion of..." should be avoided in titles. Abbreviations, jargon, trade names, formulas, and obsolete terminology also should not be used in the title. Titles should include "A Randomized Controlled Trial," "A Meta-Analysis," or "A Systematic Review," as appropriate, in a subtitle. Otherwise, do not specify the type of manuscript in the title.

7. Specific rules govern the use of acknowledgments in the journal. Please edit your acknowledgments or provide more information in accordance with 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 signature on the journal's author agreement 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).

8. 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 limits for different article types are as follows: Original Research articles, 300 words. Please provide a word count.

9. 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.

10. 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.

11. Please express outcome data as both absolute and relative effects since information presented this way is much more useful for clinicians. In both the Abstract and the Results section of the manuscript, please give actual numbers and percentages in addition to odds ratios (OR) or relative risk (RR). 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 dollar amounts.

12. Figure 1: Please confirm or explain n values (588,232 less 7,316 and 22,568 does not equal 565,664; also 565,664 less 41,682, 381, and 8,431 does not equal 515,148).

13. If you choose to revise your manuscript, please submit your revision via Editorial Manager for Obstetrics & Gynecology at <http://ong.editorialmanager.com>. It is essential that your cover letter list point-by-point the changes made in response to each criticism. Also, please save and submit your manuscript in a word processing format such as Microsoft Word.

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

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 Nov 30, 2018, we will assume you wish to withdraw the manuscript from further consideration.

Sincerely,

Dwight J. Rouse, MD
Associated Editor for Obstetrics

2017 IMPACT FACTOR: 4.982
2017 IMPACT FACTOR RANKING: 5th out of 82 ob/gyn journals

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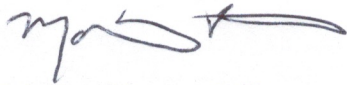
November 30, 2018

RE: Manuscript Number ONG-18-1874

Dear Editorial Staff,

This revision letter is in regard to the manuscript entitled "Gestational weight gain and severe maternal morbidity: The role of prepregnancy weight?"

Please note that as the lead author I, Marissa Platner, affirm that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.



Marissa Platner, MD

REVIEWER COMMENTS:

Revisions include:

Reviewer #1:

1. Some of the SMM outcomes identified are intertwined with gestational weight gain, and there does not appear to be an attempt to account for or acknowledge this interaction. For example, conditions that are known to cause or result from significant fluid retention, primarily heart failure, pulmonary edema, and preeclampsia/eclampsia, were reported to be associated with greater gestational weight gain. The implication in this paper is that gestational weight gain may have caused these forms of severe maternal morbidity, but association is not causation, and the reverse may be true in these cases.

Thank you for this comment, we added the following to the discussion section of the paper:

Clinical conditions that occur during delivery hospitalization may increase maternal weight including fluid retention due to heart failure or preeclampsia etc it is unlikely that this is included in the estimate on the birth certificate which could possibly place the mother in a lower GWG category. This potential misclassification would bias the effect estimates towards the null, therefore the reported findings could be more conservative than the true effect. (Truong).

2. The authors restricted gestational age to 37 to 45 weeks, which is a form of conditioning on gestational age. In doing so, this changes the denominator at risk, which

substantially changes the statistical estimates. This is a serious limitation that should be acknowledged and discussed.

Thank you for this comment. We have limited our study to this population and we feel as though this is appropriate because the IOM recommendations of total weight gain are typically targeted towards full term gestations and are the recommendations providers give to patients per ACOG guidelines.

The following has been added to the discussion:

Finally, this study is similar to other studies that have examined gestational weight gain and perinatal outcomes in that we chose to include only full term gestations (18); the effect of weight gain on complications earlier in pregnancy cannot be determined from our data and given our study design could underestimate the true rate of SMM and the results of this study cannot be inferred to apply to other populations

3. By restricting gestational age to 37 to 45 weeks, the study does not address the effect of non-recommended weight gain on SMM at earlier gestational ages. Conclusions are restricted to women who achieved 37 weeks. This limitation should also be acknowledged.'

Thank you, this has been added to the limitation and methods and this is correct our study question and population are based on a full term population.

4. The IOM recommendations for each BMI category were used appropriately. However, the IOM categories are specific to BMI category so weight gains of 1-19 or 20 lbs above recommendations mean something relatively different for each category, which should be discussed.

In developing the IOM GWG guidelines, the IOM committee's goals were to minimize the risks of complications most often associated with increased GWG without increasing the risks of inadequate GWG. Therefore, in developing the ranges for each category of prepregnancy BMI, the committee considered the incidence or prevalence of each condition, whether the short- or long-term outcomes of the conditions were permanent and the quality of the available data. Because the recommendations of weight gain are different for each BMI category, gaining 1-19 or 20 pounds above recommendations may mean less overall weight gain for the overweight/obese population than for the underweight/normal weight populations.

We added the following to the discussion section to reflect this:

In developing the IOM GWG guidelines, the goals were to minimize the risks of complications associated with increased GWG without increasing the risks of inadequate GWG and recommendations were based on review of the available data. Since the recommendations of weight gain differ by BMI category, gaining 1-19 or 20 pounds above recommendations means

less overall weight gain for overweight and obese women than for underweight and normal weight women (27). Given the increasing weight in our population, guidelines for this population should be readdressed.

5. Given the above limitations, the conclusion that high weight gain is harmful only among underweight or normal weight women ("Precis") seems inappropriate. Generally across the board for perinatal outcomes, the risk is highest in low gaining underweight and high gaining obese women.

Although there were limitations in our analysis we did find that women whose gestational weight gain is greater than the Institute of Medicine guidelines, especially those of low/normal prepregnancy weight, are at increased risk of severe morbidity, but because we agree that all women with excess weight gain are at increased risk we changed the precis to read:

"Women whose gestational weight gain is greater than the Institute of Medicine guidelines, are at increased risk of severe morbidity."

6. There are multiple comparisons made without numbers given for specific less common conditions, raising questions of power. For example, how many women were included from the low BMI group gained 20 lbs above recommendations and experienced eclampsia?

These numbers have been added to the tables.

7. A definition of "neighborhood" should be given.

The following has been added to the methods section of the paper:

Neighborhood-based poverty was defined based on household income data from the American Community Survey collected by the U.S. Census Bureau and linked with the delivery record by census tract of residence and was categorized as low (less than 10%), medium (10-20%), high (20-30%), and very high poverty (greater than 30%).

Reviewer #2: This is a population bases cross sectional study using New York City discharge data linked to birth certificate. The worst outcomes are observed in women whose gestational weight gain is in excess of IOM guidelines especially those with low or normal pre-pregnancy BMI.

Main issues:

1- It is interesting to see that "Elevated BMI were not found to be at increased odds of overall SMM". Did the author evaluated the different subgroups with higher BMI? Is that still true for women with BMI >35, BMI> 40 or BMI>45?

Thank you for this comment we added Class I, Class II, Class III and super morbid obesity to this evaluation based on the WHO categories. This has been added to the methods section, the tables and the results. The women with elevated BMI did have a higher rate of SMM at baseline

but the increased odds for SMM was only significant for an association with gestational weight gain greater than 20 pounds above baseline for women with Class III obesity.

2- With only 35.1% of women gain within the recommended range by the IOM! Are those guidelines realistic and can be done or they need to be modified? What are the evidence behind those guidelines, are they only based on expert opinion?

In developing the IOM GWG guidelines, the IOM committee's goals were to minimize the risks of complications most often associated with increased GWG (unplanned cesarean delivery, large for gestational age infant, excessive postpartum weight retention) without increasing the risks of inadequate GWG (small for gestational age infants). Therefore, in developing the ranges for each category of prepregnancy BMI, the committee considered the incidence or prevalence of each condition based on available literature, whether the short- or long-term outcomes of the conditions were permanent and the quality of the available data. Because the recommendations of weight gain are different for each BMI category, gaining 1-19 or 20 pounds above recommendations may mean less overall weight gain for the overweight/obese population than for the underweight/normal weight populations (27). Regardless it does appear that the weight gain above the guidelines in the low/normal weight populations was associated with a higher odds of SMM. At the time the guidelines were developed, there was insufficient evidence to construct guidelines for women with Class II (BMI 35–39.9 kg/m²) or Class III (BMI ≥40 kg/m²). Given the increasing weight in our population, guidelines for this population should be readdressed.

Please also see answer addressed above to reviewer #1.

Specific issues:

1- Introduction: Line 124, did you mean "adequate" or it is correct as is "inadequate"

Thank you. This is correct as inadequate. Women who gained below the IOM recommendations had a decreased likelihood of obstetric intervention as well as other maternal morbidities. This has been clarified in the introduction.

2- Methods:

a. Line 171-175: Please provide a reference for the categories of BMI used in this study.

This was taken from the WHO BMI categories and has been cited as so.

b. Please explain why length of hospitalizations with certain length is considered part of the process of defining SMM?!

This has been added to the methods section:

Similar to the methodology in the studies performed by Callaghan et al, hospitalizations with severe morbidity and an implausibly short length of stay were categorized as hospitalizations without severe morbidity to obtain the most conservative estimates.

c. Please move the statement about IRB exemption (Line 220-221) to the starting paragraph of the methods!

This change was made.

3- Results, Tables, Figures, Appendices

a. Missing weight and BMI need a little more evaluation, how different the outcomes in this group compared to the main population used in the analysis?

For the categories missing weight gain in pregnancy and BMI we cannot calculate the odds of SMM associated with weight gain categories. We did however look at the absolute rate of SMM per 1000 within this group which was 24.4 per 1000 . This was added to the results section.

Of note women who were missing information on weight gain and prepregnancy BMI had a similar overall rate of SMM at 24.4 per 1000 deliveries.

b. Unlike the reference in the introduction, in-adequate weight gain was associated with higher SMM. Please discuss!

Thank you. Similar to previous studies, our results demonstrate that overall women who gained below the IOM recommendations had no increased risk in SMM: aOR 0.98, 95% CI 0.92-1.03.

c. For table 2, why ≥ 20 lbs above IOM guidelines were selected?

This was based on previous literature assessing adverse perinatal outcomes associated with increasing gestational weight gain greater than 20 lbs above recommendations (Truong). This has been clarified in the methods section.

d. For table 5, It might be important to subcategorize BMI >30 . I would recommend adding those subgroups instead or in addition to the combined category!

Thank you for this comment we added Class I, Class II, Class III and super morbid obesity to this evaluation.

4- Discussion:

a. With only 35% of women having the recommended weight gain. Based on the data, it is more of weight gain than the actual BMI. If we believe the importance of the adequate weight gain, how this can be promoted?

Thank you. The following has been added to the discussion:

Prenatal counseling should involve discussions of prepregnancy BMI and the role of appropriate weight gain in order to optimize pregnancy outcomes. Various approaches have been used to decrease GWG including counseling on diet and exercise, monitoring of weight gain, specialized physical activity classes, and dietary modifications. However, larger trials are necessary to detect differences in adverse perinatal outcomes (27).

b. Line 309: the study did not include stratification by subgroups of BMI >35, >40 and >45. Please discuss!

Thank you for this comment we added Class I, Class II, Class III and super morbid obesity to this evaluation.

Reviewer #3: This study examines the role of GWG in severe maternal morbidity (SMM) and given the increase in maternal mortality is an important issue.

The methods are well written although authors should include their treatment of missing data in their methods section. What they identify as a 'sensitivity analysis' is really their statistical methods. A sensitivity analysis would examine a sub-population or omit a subset of the study population and observe whether it changed inference of the results.

Thank you, this was changed from “a sensitivity analysis” to an additional analysis” in line 316.

Results: L230 should read 'have low rate of poverty'. Other than that, results summarize the data well. Tables are easy to read but presumably will be re-formatted without internal lines.

This was changed thank you.

Discussion is a bit disappointing in that it ignores the study by Lisonkova S et al JAMA 2017; 318:1777 which focused on BMI and SMM. Interestingly, they found the exact same overall rate SMM. This reviewer would have liked the authors to discuss what this study adds to that one and where results are similar or may differ. These kinds of studies require large numbers using administrative data that by its nature has some degree of misclassification. Given that the misclassification should be non-differential, it should provide a modest degree of certainty about the results. The authors acknowledge limitations of the data.

Thank you for this comment. The following was added to the discussion:

A recent study evaluated the role of increasing BMI on SMM and demonstrated a dose response relationship between BMI and SMM. They performed an additional sub-analysis, which did not show an increased impact of GWG in obesity. Our findings corroborate theirs in that the obese women do not seem to be at increased risk of SMM based on their weight gain, but have a higher rate of SMM based on their prepregnancy weight. Our study adds to this literature in that we have a more diverse patient population and we specifically evaluated the association of GWG with SMM, while their study focused on the association of BMI categories with SMM (28).

STATISTICAL EDITOR COMMENTS:

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

Table 2: Should include counts as n(%), rather than simply as %s to put results in context.

This was changed.

Should note as limitations the large sample sizes leading to statistical differences that may have no prospective clinical value. (for example, chronic heart disease prevalence varying from 0.3 to 0.4% among the 4 cohorts, yet the $p < 0.001$)

Thank you this was added under table 2:

**Please note $P < 0.001$ for all categories, however given the large sample size these statistical differences may have no prospective clinical value.*

Table 3: Should include counts as n(%), rather than simply as %s to put results in context.

Thank you this was changed to “n” and rate per 1000.

Tables 4,5: Should include supplemental material to contrast the aORs with crude ORs. There are many comparisons in this Table, with no adjustment for multiple hypothesis testing. While the Authors have eliminated some estimates due to low counts, many more of the counts are too few to allow for multiple adjustment.

Please note supplemental tables 1 and 2 have been added which include crude ORs and adjusted ORs. The findings are similar between the adjusted and unadjusted results. We are happy to include these supplemental tables but are not sure how much contribute to the analysis.

The biggest single component of the SMM (essentially comprising ~ 1/2, while each of the other individual components are at least an order of magnitude less frequent) is blood

transfusion, but this may be largely explained by the higher rates of cesarean deliveries. To what extent are the findings due to that feature alone?

Given that blood transfusion is the single most common indicator for SMM, we calculated total rates of SMM with and without transfusion (20). The following has been added to the results:

See Table 4 and Discussion

The odds of SMM, excluding transfusion, only remained increased in women who gained greater than 20 pounds above recommendations (aOR 1.23, 95% CI 1.06-1.44).

The following has been added to the discussion:

Although, these findings may be partially attributable to the increased transfusion rates in women who gained 1-19 lbs above recommendations, the risk remains in women with weight gain over 20 lbs.

Appendix Suppl Table 1: The issue of subset analyses is compounded by these further subdivisions. Most of the individual components to SMM are underpowered and the NS associations cannot be generalized.

Thank you, we agree, please feel free to delete this table and this has been noted to the results section. The other two supplemental tables can also be included or excluded.

ASSOCIATE EDITOR COMMENTS:

Thank you very much for submitting your work to Obstetrics & Gynecology. We are happy to consider your work further if in your revision:

1) You completely and explicitly address the concerns of Reviewer #1;

Thank you please see above.

2) You de-emphasize relative risk and emphasize the trivial increase in absolute risk with increased weight gain. Your ORs are very low (many, if fact, in ranges explicable by residual confounding) and they apply to very low absolute risks.

Thank you, the absolute rates and rate differences were added to Table 5 and are now in the abstract and results section of the paper. We de-emphasised the odds of SMM associated with weight gain through the paper and the discussion as well as the conclusion of the paper.

We added:

Although the odds were significant this only resulted in an absolute rate increase of 2.1 and 6 cases of SMM per 1000 deliveries for those who gained 1-19 and >20 pounds above

recommendations respectively.

We also added this to the abstract conclusion:

Women whose gestational weight gain is in excess of IOM guidelines are at increased risk of SMM although the absolute rates remain low.

And the conclusion of the paper:

In summary, GWG in excess of IOM recommendations was associated with a significantly increased risk of SMM, especially among women who started pregnancy with normal or underweight BMI although the absolute rates of SMM are low.

For all the major findings, absolute rate differences were also added in the results section of the paper.

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, as well as subsequent author queries. 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:

1. OPT-IN: Yes, please publish my response letter and subsequent email correspondence related to author queries.

2. OPT-OUT: No, please do not publish my response letter and subsequent email correspondence related to author queries.

OPT-IN

2. Author Agreement Forms: Please note the following issues with your forms. Updated or corrected forms should be submitted with the revision.

Xiao Xu, Ph.D., M.A. - No Author Agreement Form submitted with the submission.

Resubmitted

3. Our journal requires that all evidence-based research submissions be accompanied by a transparency declaration statement from the manuscript's lead author. The statement is as follows: "The lead author* affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant,

registered) have been explained." *The manuscript's guarantor.

If you are the lead author, please include this statement in your cover letter. If the lead author is a different person, please ask him/her to submit the signed transparency declaration to you. This document may be uploaded with your submission in Editorial Manager.

This is included at the top of this letter.

4. 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 will be transitioning as much as possible to use of the reVITALize definitions, and we encourage authors to familiarize themselves with them. The obstetric data definitions are available at <http://links.lww.com/AOG/A515>, and the gynecology data definitions are available at <http://links.lww.com/AOG/A935>.

Thank you.

5. 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 appendixes).

Please limit your Introduction to 250 words and your Discussion to 750 words.-

Please consider cutting the following from the discussion to adhere to word counts:

Clinical conditions that occur during delivery hospitalization may increase maternal weight including fluid retention due to heart failure or preeclampsia, it is unlikely that this is included in the estimate on the birth certificate which could possibly place the mother in a lower GWG category. This potential misclassification would bias the effect estimates towards the null, therefore the reported findings could be more conservative than the true effect. (18).

6. Titles in Obstetrics & Gynecology are limited to 100 characters (including spaces). Do not structure the title as a declarative statement or a question. Introductory phrases such as "A study of..." or "Comprehensive investigations into..." or "A discussion of..." should be avoided in titles. Abbreviations, jargon, trade names, formulas, and obsolete terminology also should not be used in the title. Titles should include "A Randomized Controlled Trial," "A Meta-Analysis," or "A Systematic Review," as appropriate, in a subtitle. Otherwise, do not specify the type of manuscript in the title.

Thank you. Our title has been changed to:

“Gestational weight gain and severe maternal morbidity at delivery hospitalization”

7. Specific rules govern the use of acknowledgments in the journal. Please edit your acknowledgments or provide more information in accordance with 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 signature on the journal's author agreement 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).**

Thank you. This work was presented at the 2018 Society for Maternal Fetal Medicine Annual Meeting in Dallas, TX on February 3, 2018.

8. 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 limits for different article types are as follows: Original Research articles, 300 words. Please provide a word count.

This has been reviewed and edited as appropriate. Word count: 300 words

9. 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.

This has been reviewed and updated as appropriate.

10. 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.

This has been reviewed and edited as appropriate

11. Please express outcome data as both absolute and relative effects since information presented this way is much more useful for clinicians. In both the Abstract and the Results section of the manuscript, please give actual numbers and percentages in addition to odds ratios (OR) or relative risk (RR). 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 dollar amounts.

Thank you, we have added absolute rates and absolute rate differences as asked for above and these have been included in the tables, abstract and main body of the paper.

12. Figure 1: Please confirm or explain n values (588,232 less 7,316 and 22,568 does not equal 565,664; also 565,664 less 41,682, 381, and 8,431 does not equal 515,148).

Thank you for the comment, we redid this figure showing our step by step process and rechecked all the numbers. See the revised figure. The final "n" remains correct.

13. If you choose to revise your manuscript, please submit your revision via Editorial Manager for Obstetrics & Gynecology at <http://ong.editorialmanager.com>. It is essential that your cover letter list point-by-point the changes made in response to each criticism. Also, please save and submit your manuscript in a word processing format such as Microsoft Word.

This has been completed.

Thank you for your revisions, your time and consideration of our manuscript for publication.

Sincerely,



Marissa Platner, MD
Assistant Professor
Maternal-Fetal Medicine
Emory University School of Medicine

Daniel Mosier

From: Platner, Marissa [REDACTED]
Sent: Friday, December 7, 2018 1:16 PM
To: Daniel Mosier
Subject: Re: Manuscript Revisions: ONG-18-1874R1
Attachments: 18-1874R1 ms (12-5-18v2)_MHP12_7_18.docx; PlatnerNASpermission.pdf; platnerauthoragreement.pdf

Dear Mr. Mosier,

I have attached the edited manuscript and the updated author agreement, as well as permission from the NAS.

1. Please note the minor edits and deletions throughout. Please let us know if you disagree with any of these changes. **Agree with all changes.**
2. LINE 1: The Abstract does not indicate "delivery hospitalization" but it should - **This is now included in the Objective of the abstract**
3. LINE 16: Please ask Jessica Illuzi to respond the authorship confirmation email we sent. We sent an email from em@greenjournal.org. The message contains a link that needs to be clicked on. We emailed Dr. Illuzi at [REDACTED] – is this the correct address? **Her email address is [REDACTED]. Additionally, the spelling of her name has been changed to Jessica Illuzzi.**
4. LINE 76: Do you want to say, "retrospective cohort" instead? See page 6. **This has been changed**
5. LINE 116: Please cite your supplemental tables in the text as Appendix 1, Appendix 2, and Appendix 3. **It looks like the supplemental tables and Appendix has been deleted. On my review I did not see a place to reference these, but please correct me if I am mistaken.**
6. LINE 140: Abstract says something different. **This has been changed.**
7. LINE 144: Please add the reason why your study was exempt. **Our study was exempt due to it being a study of de-identified existing data. This was added to the Methods.**
8. LINE 188: Should this be 19%. **This was changed to 10-<20%.**
9. LINE 332: I do not understand this explanation. Much of the excess weight gain in these women occurs before delivery hospitalization. The following has been added to clarify our explanation: **It is unlikely that this is included in the estimate on the birth certificate because the weight typically comes from maternal recall or the outpatient setting and women are not typically weighed upon admission to labor and delivery (32). This may place the mother in a lower gestational weight gain category.**
10. TABLES: Please ensure that all tables are properly numbered throughout your manuscript (they should be numbered based on their order of appearance in the paper, i.e. the first table to be cited in the manuscript is Table 1, the second is Table 2, etc.). **This has been edited and corrected. I did notice that Ms. Shields had changed the order of the tables, I changed this back to reflect the order of appearance, but please feel free to change as you see fit.**
11. TABLE 1: Please provide written permission from NAS to print this table in your article, both in print and online. Please complete section IB of our Author Agreement form, which asks you to list any items not original to your paper. **See attached.**
12. TABLE 2: Please put this row and the one below it at the top and indent the ones below under a sub-heading of "Individual Components" or something. **This has been changed.**
13. TABLE 4: Same request as for table above. These last two rows should be the first two rows. **This has been changed.**

Please let me know if there is anything else additional that you need me to do in order to complete the review of our manuscript. I appreciate your continued consideration.

Thank you,

Marissa Platner

Marissa Platner, MD
Assistant Professor
Maternal-Fetal Medicine
Emory University School of Medicine

From: Daniel Mosier <dmosier@greenjournal.org>
Sent: Wednesday, December 5, 2018 9:33 AM
To: Platner, Marissa
Subject: Manuscript Revisions: ONG-18-1874R1

Dear Dr. Platner,

Thank you for submitting your revised manuscript. It has been reviewed by the editor, and there are a few issues that must be addressed before we can consider your manuscript further:

1. Please note the minor edits and deletions throughout. Please let us know if you disagree with any of these changes.
2. LINE 1: The Abstract does not indicate "delivery hospitalization" but it should
3. LINE 16: Please ask Jessica Illuzi to respond the authorship confirmation email we sent. We sent an email from em@greenjournal.org. The message contains a link that needs to be clicked on. We emailed Dr. Illuzi at [REDACTED] – is this the correct address?
4. LINE 76: Do you want to say, "retrospective cohort" instead? See page 6.
5. LINE 116: Please cite your supplemental tables in the text as Appendix 1, Appendix 2, and Appendix 3.
6. LINE 140: Abstract says something different.
7. LINE 144: Please add the reason why your study was exempt.
8. LINE 188: Should this be 19%
9. LINE 332: I do not understand this explanation. Much of the excess weight gain in these women occurs before delivery hospitalization
10. TABLES: Please ensure that all tables are properly numbered throughout your manuscript (they should be numbered based on their order of appearance in the paper, i.e. the first table to be cited in the manuscript is Table 1, the second is Table 2, etc.).
11. TABLE 1: Please provide written permission from NAS to print this table in your article, both in print and online. Please complete section IB of our Author Agreement form, which asks you to list any items not original to your paper.
12. TABLE 2: Please put this row and the one below it at the top and indent the ones below under a sub-heading of "Individual Components" or something
13. TABLE 4: Same request as for table above. These last two rows should be the first two rows

Please let me know if you have any questions. Your prompt response to these queries will be appreciated; please respond no later than COB on **Friday, December 7th**.

Sincerely,
-Daniel Mosier

Daniel Mosier

Editorial Assistant
Obstetrics & Gynecology
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From: [REDACTED]
To: [Stephanie Casway](#)
Subject: Re: O&G Figure Revision: 18-1874
Date: Wednesday, December 5, 2018 4:36:26 PM

Hi Ms. Casway,

I am just writing to approve of the figure edits. Thank you so much.

Marissa

Marissa Platner, MD
Assistant Professor
Maternal-Fetal Medicine
Emory University School of Medicine

From: Stephanie Casway <SCasway@greenjournal.org>
Sent: Monday, December 3, 2018 1:27 PM
To: Platner, Marissa
Subject: O&G Figure Revision: 18-1874

Good Afternoon Dr. Platner,
Your figure has been edited, and PDFs of the figure and legend are attached for your review. Please review the figure and legend CAREFULLY for any mistakes.

PLEASE NOTE: Any changes to the figures must be made now. Changes made at later stages are expensive and time-consuming and may result in the delay of your article's publication.

To avoid a delay, I would be grateful to receive a reply no later than Wednesday, 12/5. Thank you for your help.

Best wishes,

Stephanie Casway, MA
Production Editor
Obstetrics & Gynecology
American College of Obstetricians and Gynecologists
409 12th St, SW
Washington, DC 20024
Ph: (202) 314-2339
Fax: (202) 479-0830
scasway@greenjournal.org

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