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.

Date: Jan 16, 2020
To: "Alex Friedman Peahl" [redacted]
From: "The Green Journal" em@greenjournal.org
Subject: Your Submission ONG-19-2325

RE: Manuscript Number ONG-19-2325

Right-sizing prenatal care: how tailoring care to patients' needs can improve maternity care value

Dear Dr. Peahl:

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 Feb 06, 2020, we will assume you wish to withdraw the manuscript from further consideration.

REVIEWER COMMENTS:

Reviewer #1:

I congratulate the authors on this timely and important article, introducing a concept that deserves serious consideration as a model for modern obstetric care. As they point out, the current standardized schedule of prenatal care is not evidence-based, so it may be time for a new model more applicable to the 21st century. Although several have been proposed, "right sizing" could enable tailoring both the model and the level of care to individual patient needs. It could also potentially address many current concerns in obstetrics, including social determinants of health, psychosocial issues, and the unacceptable rate of maternal mortality in our country.

The article is exceptionally well-written and well thought-out. The figures (particularly Figure 3) complement the manuscript, and I appreciate the inclusion of a section on payment issues. The fact that the vignettes are not presented in order in the text is a bit disorienting, but can be easily remedied. The research is limited by the fact that it appears to have involved only 12 patients and 12 providers. However, because the piece is primarily a commentary, this is of minimal significance.

I would raise only a few small points for consideration. The authors point out that low-risk vs. high-risk has not been consistently defined, yet they continue to use that terminology throughout the text. Perhaps they could begin to illustrate their concept of "right sizing" by defining and then utilizing the terms high- and low-support-needs patients, as is hinted at in Figure 1.

In addition, it might be helpful for the authors to delve a bit more deeply into criteria that could be used to "phenotype" patients under this model. They point out that, although recommended by professional organizations, assessment of social determinants of health has been incorporated into routine risk assessment much less frequently than medical history. Can they begin to suggest ways that this might be done and/or tools that providers might be able to use for this? As the authors point out, much additional research on this concept is needed, but introducing some concrete ideas for a fuller evaluation might offer a starting point for these trials.

Reviewer #2: This is a current commentary about the structure of prenatal care. The authors highlight the historical status quo and some attempts at modernization and streamlining. They advocate for an individualized system that not only concentrates on medical complications, but holistic care to address all patient needs. They advocate that patients are stratified by their social determinants of care. They highlight some of the potential benefits of such a system, but the barriers and potential pitfalls as well. Ways in which this manuscript could be improved include:

Line 105: I would elaborate a bit about what you mean by largely unchanged in the last 80 years. I understand what you

mean, but I think some readers might take umbrage that nothing has changed in 80 years.

Lines 110-111: Again, I know what you mean, but I think it is a little disingenuous to state most care is one size fits all. I think there have been many recent advances, some of which you highlight, that have addressed the needs of our patient. No doubt we need to continue to work toward modernization, but I would soften the language here.

Lines 116-121: Working in an urban area, I would disagree with these sentiments. I think there is broad acceptance that it is not enough to just treat the problems, not the person. Again, I think many readers will disagree with this statement.

Lines 161-162: I think there are some systems that use a low risk pathway and a higher risk pathway (such as the DoD/VA pregnancies guidelines or BabyScripts) that aim to reduce the number of visits for those patient without risks.

Line 197: I certainly agree and understand the more ultrasound component of this, but I would suggest a little more data about the increase in cesarean rate as I do not understand the plausibility of this association.

Lines 200-202: I would remove this sentence and not use an unpublished data source.

Line 214: Is there any data available as to what percentage of patient receive care under one of these new approaches? Kaiser and the DoD alone represent a fairly large chuck of obstetrical patients in the country. I think that number, if available, would help identify the scope of the problem. I agree there is limited outcome data, but that is another topic.

Lines 279-280: Yes! Please include some of the specifics of this survey. The best laid plan for individualized care is not going to work unless support services are readily available.

Lines 286-287: I think I would remove this end of sentence as I think most patients are universally screened for depression and anxiety.

Lines 326-328: Again, yes! Global reimbursement is a real detriment for individualizing care for patients and potentially dangerous as you point out. This and the shortage of support services are a real travesty and improvements in both of these areas is paramount to making prenatal care systems work.

Reviewer #3: This is a well written and thoughtful paper in the our current care scenario in United States.
My comments are

1. Do the authors follow this model at their institution and if so what has been the experience??

2. Line 179 Can authors give certain examples for overutilization and underutilization of certain services??

3. I suggest mentioning WHO recommendation of 4 prenatal visits in the paper.

4. Alos describe what group pregnancy homes mean?? Certain audience might not be familiar with the term

EDITOR'S COMMENTS:

We no longer require that authors adhere to the Green Journal format with the first submission of their papers. However, any revisions must do so. I strongly encourage you to read the instructions for authors (the general bits as well as those specific to the feature-type you are submitting). The instructions provide guidance regarding formatting, word and reference limits, authorship issues, and other things. Adherence to these requirements with your revision will avoid delays during the revision process, as well as avoid re-revisions on your part in order to comply with the formatting.

Line 119: would you consider adding infant feeding separately from parenting?

Line 121: Do you have a reference for this statement?

Line 149: Please substitute “fetal growth restriction” for “Intrauterine growth restriction”.

Line 153: neither has “high risk pregnancy”.

LINE 156 specialists in obstetrics and gynecology (not generalists)

Line 169—if they have support needs and IF such services are available in the woman’s care setting.

Line 172: As one of your reviewers notes, the way the patient vignettes are included in the flow of your paper is a bit jarring. You mention them here on Line 172 but then you don't do anything with them again until line 249 and at that time, you present them out of order (C then A, then B followed by D). Could you consolidate all mention of the vignettes in one place in the manuscript and re-name them so you present them in order? Perhaps Low Medical/Low social support needs progressing to the HI/Hi example?

Line 202: we don't allow references to include unpublished work. If this paper is not published by the time of acceptance of this paper, you will need to either edit this section out, or find a different reference.

Line 228: Medical providers may not be trained and its also not likely a good use of their time, given that others can do this.

Line 277: It's the American College of Obstetricians and Gynecologists.

In the assessment section can you suggest some useful tools for doing these assessments?

Line 309: (and elsewhere) iI is an idiosyncratic fact that at the Journal we tend to avoid the use of the word impact to imply the result of a change, preferring to limit "impact" to mean a physical blow.

Line 519: what is this in reference to?

EDITORIAL OFFICE 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. As of December 17, 2018, Obstetrics & Gynecology has implemented an "electronic Copyright Transfer Agreement" (eCTA) and will no longer be collecting author agreement forms. 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. 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 and gynecology data definitions at https://www.acog.org/About-ACOG/ACOG-Departments/Patient-Safety-and-Quality-Improvement/reVITALize. If use of the reVITALize definitions is problematic, please discuss this in your point-by-point response to this letter.

4. Because of space limitations, it is important that your revised manuscript adhere to the following length restrictions by manuscript type: Current Commentary articles should not exceed 12 typed, double-spaced pages (3,000 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.

5. 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).

6. 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: Current Commentary articles, 250 words. Please provide a word count.

7. 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.

8. 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.

9. 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.

Table 1 should be renamed. It is a Box.

10. Figures

Figure 1: Please upload as a high res file on Editorial Manager (eps, tiff, jpeg, png).

Figure 2: Please upload as a separate figure file on Editorial Manager (Word format is okay).

Figure 3: Please confirm that this figure is original to the manuscript and upload as a high res file on Editorial Manager (eps, tiff, jpeg, png).

11. 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 http://edmgr.ovid.com/acd/accounts/ifauth.htm.

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.

12. 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.

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 Feb 06, 2020, we will assume you wish to withdraw the manuscript from further consideration.

Sincerely,

Nancy C. Chescheir, MD
Editor-in-Chief

2018 IMPACT FACTOR: 4.965
2018 IMPACT FACTOR RANKING: 7th out of 83 ob/gyn journals

_____

[redacted]

Dear Dr. Chescheir,

We are pleased to submit our revised manuscript “Right-sizing prenatal care: how tailoring care to patients’ needs can improve maternity care value” as a Current Commentary to *Obstetrics & Gynecology* for review. We appreciate the thoughtful comments from the review, and have responded individually to each of the recommendations below. Please note that line numbers stated in responses refer to the clean version of the revised manuscript.

This study has not been published elsewhere and is not currently submitted elsewhere. All authors made contributions to the preparation of this manuscript. 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.

Thank you for your consideration.

Sincerely,

*Alex Friedman Peahl MD, MSc
National Clinician Scholar, Institute for Health Policy and Innovation
Clinical Lecturer, Department of Obstetrics and Gynecology
University of Michigan

Reviewer 1:
I congratulate the authors on this timely and important article, introducing a concept that deserves serious consideration as a model for modern obstetric care. As they point out, the current standardized schedule of prenatal care is not evidence-based, so it may be time for a new model more applicable to the 21st century. Although several have been proposed, "right sizing" could enable tailoring both the model and the level of care to individual patient needs. It could also potentially address many current concerns in obstetrics, including social determinants of health, psychosocial issues, and the unacceptable rate of maternal mortality in our country. The article is exceptionally well-written and well thought-out. The figures (particularly Figure 3) complement the manuscript, and I appreciate the inclusion of a section on payment issues.
Comment 1: *The fact that the vignettes are not presented in order in the text is a bit disorienting, but can be easily remedied.*
Response: We have revised the presentation of vignettes to be in order from A to D to improve the clarity of the manuscript.

Comment 2: *The research is limited by the fact that it appears to have involved only 12 patients and 12 providers. However, because the piece is primarily a commentary, this is of minimal significance.*
Response: We recognize the small sample size of these initial vignettes, and one of the authors (AP) is actively engaged in further human centered design work to expand these conclusions to larger groups of patients/providers in Detroit, Michigan. We look forward to sharing these expanded results in future manuscripts. Project Joy was a unique collaborative study with innovative consulting firm EPAM-Continuum. Given the scope of the study, we decided on a convenience sample of 12 patients and 12 providers in order to capture the diversity of providers and patients at the study institution. The study is exploratory initial work into ways to further improve prenatal care delivery.

Comment 3: *I would raise only a few small points for consideration. The authors point out that low-risk vs. high-risk has not been consistently defined, yet they continue to use that terminology throughout the text. Perhaps they could begin to illustrate their concept of "right sizing" by defining and then utilizing the terms high- and low-support-needs patients, as is hinted at in Figure 1.*
Response: Thank you for highlighting the importance of defining “low-risk” and “high-risk” across both dimensions of care. One of the authors (AP) is working with electronic medical record data to find the most important signals for defining these categories. We recognize that using the term risk may be confusing for readers because it has been traditionally used to define specific outcomes; however, we are pointing to a more prospective model of care that identifies *needs* and matches them to appropriate services. To clarify this discrepancy, we have modified the manuscript to reflect “needs” vs. “risk.” To provide additional clarity for these definitions, we have provided further examples of low and high support needs in the manuscript:

> Lines 143-147:
> Patients with low support needs may include multiparous patients with involved partners or close social ties, and few material or financial needs. In contrast, patients with high support needs may include nulliparous women who lack supportive networks of family/friends, or have difficulty accessing needed services like stable housing or transportation.

Comment 4:
In addition, it might be helpful for the authors to delve a bit more deeply into criteria that could be used to "phenotype" patients under this model. They point out that, although recommended by professional organizations, assessment of social determinants of health has been incorporated into routine risk assessment much less frequently than medical history. Can they begin to suggest ways that this might be done and/or tools that providers might be able to use for this? As the authors point out, much additional research on this concept is needed, but introducing some concrete ideas for a fuller evaluation might offer a starting point for these trials.

Response: We appreciate the reviewer's request for more practical application of some of the concepts identified in this manuscript, including the integration of social determinants of health screening. We agree that further work is needed in this area, including validation of the best tools to be used in pregnant populations: for example, each state-based Medicaid program uses their own screening form, with unique fields, yet little is known about the most important factors. Similarly, screening is often guided by the services a facility is able to provide: for example, an organization that is unable to provide housing support referrals may intentionally decide to not screen for housing insecurity. To address these important gaps, we have elaborated on the need for improved screening tools in the obstetric population, and validation of these tools across care settings and patient populations.

Lines 270-277:

Though surveys show providers support social screening, barriers like lack of time to perform screening and inadequate resources and referral options for support services may impede universal implementation.[48,49] Several screening tools currently exist, including the 10-item Health LEEDS questionnaire highlighted in the ACOG Committee Opinion 729: Importance of Social Determinants of Health and Cultural Awareness in the Delivery of Reproductive Health Care; however, validation and adaptation of education and social needs screening tools in the obstetric population are notably absent in the literature.[50,51]

Reviewer 2:

This is a current commentary about the structure of prenatal care. The authors highlight the historical status quo and some attempts at modernization and streamlining. They advocate for an individualized system that not only concentrates on medical complications, but holistic care to address all patient needs. They advocate that patients are stratified by their social determinants of care. They highlight some of the potential benefits of such a system, but the barriers and potential pitfalls as well. Ways in which this manuscript could be improved include:

Comment 1 (Line 105): *I would elaborate a bit about what you mean by largely unchanged in the last 80 years. I understand what you mean, but I think some readers might take umbrage that nothing has changed in 80 years.*

Response: Thank you for identifying this point of clarification. We have highlighted that the recommendations for visit number and the location of prenatal care delivery have remained unchanged, in spite of drastic changes in population health and technology.

Abstract:

Prenatal care is one of the most widely utilized preventive care services in the United States, yet prenatal care recommendations have remained largely unchanged since just before World War II.

Lines 73-76:

While prenatal care is one of the most widely utilized preventive care services in the United States, recommendations for care delivery, including 12-14 office-based visits for low-risk women, have remained largely unchanged since World War II,[2] in spite of changes in population health and technology.

Comment 2 (Lines 110-111): *Again, I know what you mean, but I think it is a little disingenuous to state most care is one size fits all. I think there have been many recent advances, some of which you highlight, that have addressed the needs of our patient. No doubt we need to continue to work toward modernization, but I would soften the language here.*

Response: We agree that there have been many strides to improve prenatal care in recent decades, and have softened the language in this paragraph to reflect these innovations.

Line 81:

As a result, many patients receive the same "one size fits all" approach to care.[3]

Comment 3 (Lines 116-121): *Working in an urban area, I would disagree with these sentiments. I think there is broad acceptance that it is not enough to just treat the problems, not the person. Again, I think many readers will disagree with this statement.*
Response: We appreciate the reviewer's comment that not all care facilities are designed solely around medical risk, and that many professionals providing prenatal care are focused on the delivery of holistic care. Our comments are meant to highlight that most prenatal care is built on a backbone of medical care: visit spacing and the delivery of the care in a clinic is meant to address medical needs. Psychosocial care is *added* to these existing recommendations, not integrated. We have tried to clarify our thinking in this section, and soften the language for readers who may be providing care in a more holistic way. Additionally, we have revised the vignette about Danielle to highlight the lack of coordination in the current system.

> Lines 87-92:
> Current prenatal care delivery recommendations are structured around medical care for the patient and fetus (e.g. medical screening and management of complications). In this medical model, supportive care, including anticipatory guidance (education and preparation for pregnancy, birth, infant feeding, and parenting) and psychosocial support (screening and management of non-medical factors such as mental health, substance use, housing, and nutrition) is often added on, rather than meaningfully integrated into prenatal care.

Comment 4 (Lines 161-162): *I think there are some systems that use a low risk pathway and a higher risk pathway (such as the DoD/VA pregnancies guidelines or BabyScripts) that aim to reduce the number of visits for those patient without risks.*
Response: We agree with the reviewer that some organizations, including Kaiser, the DoD/VA, and BabyScripts are already using risk stratification for reducing visit number for low-risk patients. Unfortunately, we are unaware of published studies of these interventions. We have included these models as examples, but highlighted the lack of available data.

> Lines 133-139:
> In our current model, patients who are low-risk receive an intensive 12-14 visits, while patients who are high-risk may receive more. There is no defined opportunity for care de-escalation [**Figure 1C**]. While large integrated organizations like Kaiser Permanente and the Department of Defense, as well as health technology platforms such as BabyScripts™, have implemented low-risk pathways, formal evaluations of these programs are lacking, and are largely limited to feasibility, not pregnancy outcomes.[16-19]

Comment 5 (Line 197): *I certainly agree and understand the more ultrasound component of this, but I would suggest a little more data about the increase in cesarean rate as I do not understand the plausibility of this association.*
Response: Thank you for addressing this surprising conclusion. The authors of the study hypothesize that increased prenatal care visits lead to greater interventions, including ultrasounds, which in turn lead to further interventions, including cesarean delivery. This may be driven by a population of "worried-well" or something inherent to the increased frequency of visits. While we cannot draw causation from this observational study, we believe the relationship is worth noting. We have included further details about the study type and number of included patients to provide further clarity on the methodology.

> Lines 172-176:
> Contrary to intuition, more prenatal care may actually be harmful for medically low-risk patients. In a retrospective analysis of over 7,000 medically low-risk patients who delivered at term in a single academic institution, greater than 10 prenatal visits for low-risk patients was associated with increased interventions like ultrasounds and cesarean delivery, without improvement in outcomes.[21]

Comment 6 (Lines 200-202): *I would remove this sentence and not use an unpublished data source.*
Response: This article has been accepted for publication in *Obstetrics & Gynecology*. The reference has been updated.

Comment 7 (Line 214): *Is there any data available as to what percentage of patient receive care under one of these new approaches? Kaiser and the DoD alone represent a fairly large chuck of obstetrical patients in the country. I think that number, if available, would help identify the scope of the problem. I agree there is limited outcome data, but that is another topic.*
Response: We agree that understanding the proportion of patients receiving care with traditional/alternative visit schedules will be crucial for effective implementation of new models. Two of the authors (AP & KF) are working with universities and professional organizations to survey providers and better understand prenatal care delivery nationwide. Unfortunately, we are not aware of any current report that addresses this question.

Comment 8 (Lines 279-280): *Yes! Please include some of the specifics of this survey. The best laid plan for individualized care is not going to work unless support services are readily available*.
We have elaborated on the details on the survey, highlighting the tension between providers' desire to screen for social needs and lack of support to do so.

> Lines 271-278:
> Though surveys show providers support social screening, barriers like lack of time to perform screening and inadequate resources and referral options for support services may impede universal implementation.[48,49] Several screening tools currently exist, including the 10-item Health LEEDS questionnaire highlighted in the ACOG Committee Opinion 729: Importance of Social Determinants of Health and Cultural Awareness in the Delivery of Reproductive Health Care; however, validation and adaptation of education and social needs screening tools in the obstetric population are notably absent in the literature.[50,51]

Comment 9 (Lines 286-287): *I think I would remove this end of sentence as I think most patients are universally screened for depression and anxiety*.
Response: While we agree that current recommendations support universal screening for depression/anxiety in pregnancy/the postpartum period, we are unaware of any data since 2010 that addresses implementation of these recommendations. In 2012, a study of the National Survey of Drug Use and Health found over 60% of pregnant women with major depression were undiagnosed in routine care. Further, a study of recent Ob/Gyn graduates in 2003 found only 9-12% screened patients for depression with validated questionnaires or direct questioning. We recognize that this data needs to be updated; however, we do not feel we can conclude that the recommendation for universal screening is the same as practice. We have added these references to the manuscript (Line 285, references 48 and 49).

Comment 10 (Lines 326-328): *Again, yes! Global reimbursement is a real detriment for individualizing care for patients and potentially dangerous as you point out. This and the shortage of support services are a real travesty and improvements in both of these areas is paramount to making prenatal care systems work.*
Response: We agree that payment reform will be a crucial part of right-sizing prenatal care.

Reviewer 3:
This is a well written and thoughtful paper in the our current care scenario in United States.
My comments are
Comment 1: *Do the authors follow this model at their institution and if so what has been the experience??*
Response: Two of the authors (AP, MM) currently practice in a large academic setting that recommends a reduced prenatal visits schedule (10 visits) for low-risk women. While both authors have had favorable

experiences with this model, we are currently assessing adherence to the schedule and identifying implementation success. The other practitioners who provide prenatal care (EL, KF, and NS) also practice at large academic institutions, but do not provide care in a reduced visit schedule/alternative care model.

Comment 2: *Line 179 Can authors give certain examples for overutilization and underutilization of certain services??*
Response: Thank you for highlighting this ambiguity. We have revised this statement to include more detail.

> Lines 154-157:
> In failing to reliably match medical and support services with patient needs [Figure 1C], our current system may result in overutilization of some services (like prenatal care visits for women with low medical needs) and underutilization of others (like anticipatory guidance for nulliparous women or psychosocial support for women with high social needs).

Comment 3: *I suggest mentioning WHO recommendation of 4 prenatal visits in the paper.*
Response: We appreciate the reference to the WHO Focused Antenatal Care program. Unfortunately, the 4 visit schedule was linked to increased rates of maternal and infant morbidity and mortality, and was replaced in 2016 with a new visit recommendation for a minimum of 8 visits over this course of pregnancy. We have referenced this new guideline in our discussion (Line 199).

Comment 4: *Also describe what group pregnancy homes mean?? Certain audience might not be familiar with the term.*
Response: We have added additional text within the manuscript to define pregnancy medical homes, and referred the reader to Table 1 which includes the definitions of alternative prenatal care models with examples.

> Lines 258-261:
> These patients may prefer Pregnancy Medical Homes (PMH)—team-based care models where patients maintain privacy by meeting individually with their provider, but have additional support with coordination of medical and social services to improve adherence to complex treatment plans.[45,46]

Editor's Comments:

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Comment 1 (Line 119): *would you consider adding infant feeding separately from parenting?*
Response: We have included infant feeding as part of anticipatory guidance.

> Lines 89-92:
> In this medical model, supportive care, including anticipatory guidance (education and preparation for pregnancy, birth, infant feeding, and parenting) and psychosocial support (screening and management of non-medical factors such as mental health, substance use, housing, and nutrition) is often added on, rather than meaningfully integrated into prenatal care.

Comment 2 (Line 121): *Do you have a reference for this statement?*
Response: These calculations are based on our experiences as clinicians, calculating the total time required for 12 prenatal visits (with travel, parking, check-in and check-out), laboratory testing,

ultrasounds, and prenatal education. We have included greater detail in the section to explain how we arrived at this calculation.

Comment 3 (Line 149): *Please substitute "fetal growth restriction" for "Intrauterine growth restriction".*
Response: We have substituted "fetal growth restriction" (Line 122).

Comment 4 (Line 153): neither has "high risk pregnancy".
Response: We have modified the sentence to include that neither "low-risk" nor "high-risk" pregnancy have been consistently defined.

> Lines 126-128:
> We also acknowledge that the terms "low-risk" and "high-risk" pregnancy have not been consistently defined in the literature and may vary across regions, institutions, and individual providers depending on available resources, training, and expertise.[14,15]

Comment 5 (LINE 156): specialists in obstetrics and gynecology (not generalists)
Response: We have substituted "specialists in obstetrics and gynecology" (Line 130).

Comment 6 (Line 169):—if they have support needs and IF such services are available in the woman's care setting.
Response: Thank you for pointing out this distinction. We have added that services must be available in order for women to receive them.

> Lines 149-151:
> Patients may also be offered social work visits or supportive services if they have high support needs and these services are available in their care setting.

Comment 7 (Line 172): *As one of your reviewers notes, the way the patient vignettes are included in the flow of your paper is a bit jarring. You mention them here on Line 172 but then you don't do anything with them again until line 249 and at that time, you present them out of order (C then A, then B followed by D). Could you consolidate all mention of the vignettes in one place in the manuscript and re-name them so you present them in order? Perhaps Low Medical/Low social support needs progressing to the HI/Hi example?*
Response: Thank you for these points of clarification. We have removed the text from Line 172, and moved it closer to the presentation of the actual vignettes. We have additionally reordered the vignettes to move from patient A-D (low medical and social needs to high medical and social needs). We have additionally included clarifying text with the introduction of each patient to highlight which dimension of needs they represent (e.g. Patient A: low medical, low social needs)

> Lines 239-240:
> Caring for patients like Ashley (**Patient A: low medical, low social needs**) in our current model may lead to overutilization of medical care.

Comment 8 (Line 202): *we don't allow references to include unpublished work. If this paper is not published by the time of acceptance of this paper, you will need to either edit this section out, or find a different reference.*
Response: The article is currently accepted and in production with *Obstetrics & Gynecology*. We have updated the reference.

Comment 9 (Line 228): *Medical providers may not be trained and its also not likely a good use of their time, given that others can do this.*
Response: We agree that resource utilization should be a major consideration in right-sizing prenatal

care. We have included additional discussion emphasizing the importance of task allocation in team-based care.

> Lines 207-216:
> For patients with high support needs, current strategies include increasing total number of prenatal appointments or layering on additional social services. Both of these approaches have shortcomings. Excess medical visits may detract from time needed to access support services, perform self-care, attend work, or manage childcare responsibilities. Additional support services, while potentially helpful, are often provided by medical professionals without appropriate training to address issues such as housing or food insecurity. Other health care team members (e.g. social workers) may be better equipped to address social needs and allow for improved resource allocation in the clinic. Unfortunately, this redistribution of tasks is often limited by payment models, which are not currently designed to provide adequate reimbursement for non-medical services (see *Payment models* below).[4]

Comment 10 (Line 277): *It's the American College of Obstetricians and Gynecologists.*
Response: We have substituted the correct name (Lines 269-270).

Comment 11: *In the assessment section can you suggest some useful tools for doing these assessments?*
Response: We appreciate the need for more specificity about potential tools for screening for social needs. Our team thinks of these needs in two key axes for pregnancy: anticipatory guidance and psychosocial support (including social determinants of health). The ACOG committee opinion delineates sample tools for screening for social determinants of health, including the 10-item Health Leads questionnaire (Acad Med 2017). Notably, we are unaware of any validated tool for specifically addressing educational and social needs in pregnancy, though individual states and clinics/hospitals may implement their own instruments. We have highlighted this as a major gap in the existing literature, and emphasized the need for further exploration of tools to capture these needs.

> Lines 274-278:
> Several screening tools currently exist, including the 10-item Health LEEDS questionnaire highlighted in the ACOG Committee Opinion 729: Importance of Social Determinants of Health and Cultural Awareness in the Delivery of Reproductive Health Care; however, validation and adaptation of education and social needs screening tools in the obstetric population are notably absent in the literature.[50,51]

Comment 12 (Line 309): (and elsewhere) *It is an idiosyncratic fact that at the Journal we tend to avoid the use of the word impact to imply the result of a change, preferring to limit "impact" to mean a physical blow.*
Response: We have substituted "outcomes" "influence" and "effective" for impact/impactful throughout the manuscript.

Comment 13 (Line 519): *what is this in reference to?*
Project Joy was a unique collaboration between an academic health system and a private Human Centered Design company that explored how Human Centered Design principles could be used to rethink models of prenatal care. One of the authors on this manuscript (EL) was a leader of the work. The project included 24 total interviews (12 with patients and 12 with providers) to understand the current and ideal state of prenatal care. The vignettes included in this study are informed by the interviews from Project Joy, as well as the experiences of the five Ob/Gyns included in our writing team.