OBSTETRICS & GYNECOLOGY

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

Date: Jan 31, 2019
To: "Maria Isabel Rodriguez"
From: "The Green Journal" em@greenjournal.org
Subject: Your Submission ONG-18-2401

RE: Manuscript Number ONG-18-2401

Pharmacist prescription of hormonal contraception averts unintended pregnancies and reduces costs

Dear Dr. Rodriguez:

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 21, 2019, we will assume you wish to withdraw the manuscript from further consideration.

REVIEWER COMMENTS:

Reviewer #1: Rodriguez and colleagues report a decision analytic model examining the effectiveness of pharmacist prescription of hormonal contraception. Comments for the authors:

Introduction

1. Introduction is well written.

2. One line on how frequent pharmacist prescriptions have been used would be helpful.

Methods

3. It seems that all patients prescribed contraception by a pharmacist were consider as "new" users who would not have otherwise received contraception. How does the model account for decrease prescription by MDs of contraception? Seems like the model would have to first examine total contraception users before and after pharmacist prescribing to determine how many new users pharmacist prescribing brought into the system. Is this data available?

4. Can you assume no difference in compliance and hence risk of pregnancy for pharmacist vs. provider given contraception? Perhaps quality of counseling is different?

5. How do you account for other routine services that a physician would render that could not be received just by pharmacist (cervical cancer screening, STD screening), etc? Aren't physician visits and hence cost still need even with pharmacist delivered contraception? It seems like its purely one or the other in the model.

Discussion

6. Is actual data available from Medicaid on continuation rates of provider vs. pharmacist delivered contraception (ie prescription drug data)?

Reviewer #2: In their study, Rodriguez et al. model the effects of pharmacist-prescribed contraception policy implementation in the state of Oregon. In 2016, Oregon began allowing pharmacists to prescribe methods of hormonal

contraception, in addition to clinical providers. Using a decision analysis, they estimated that this policy prevented 51 unplanned pregnancies and saved $1.6 million in direct medical expenses in the state of Oregon.

In general, this study is well done and well written. The methods and results are easy to follow. Contraception use, adherence rates, and pregnancy outcomes are well studied and publicly reported, thus increasing the credibility and accuracy of this type of modeling, which heavily relies on estimates. This work is important for policymakers and advocates for improved contraception access to women in the US. I have a few minor comments for the authors to consider.

The model estimates were most sensitive to contraception continuation rates. The authors note that if continuation rates are 10% lower among pharmacists, then the policy would not avert unintended pregnancies. Do the authors have any preliminary data on continuation rates among pharmacist prescribed contraception? The policy has now been in place >2+ years. Or are there any preliminary data from the other states that have this policy to mention in the discussion?

The authors also note that 132% increase in Tier 1 (LARCs) contraception would be needed for pharmacist-prescribed contraception to not be cost effective. LARC increased from 6 to 14% between 2008 and 2014 in this recent study in Contraception: https://www.contraceptionjournal.org/article/S0010-7824(17)30478-X/fulltext. As the overall rates of women contraception did not change largely, the increase in LARC usage was primarily due to fewer women opting for sterilization, but there were few women using OCPs. How are LARC usage rates changing in Oregon? Are the authors able to predict if the 132% increase is likely to occur?

Is there any information on how pharmacist-prescribed contraception affects the rates of LARCs? I imagine that the convenience of pharmacist-prescribed contraception may cause some shift of women opting for hormonal methods over LARCs, which would require a provider visit? A shift towards less effective methods of contraception (LARCs->pills) would cause an increase in the unintended pregnancy rates. Is there any data to suggest that LARC use has changed in Oregon with the availability of pharmacist prescribed OCPs?

Reviewer #3: This is a decision-analytic model designed to evaluate the cost-effectiveness of a law in Oregon permitting pharmacists to prescribe hormonal contraception (HC). The primary outcome was unintended pregnancies averted and secondary outcomes included costs and QALYs.

Improving access to contraception is an urgent issue and pharmacist-prescribing is a novel way to bridge access concerns with medical practitioner-only prescribing and safety concerns with unregulated over-the-counter access to HC.

To assure that the findings in this study withstand the scrutiny of those opposed to broader HC access, please address the following issues with the Table 1 Model Inputs and generalized conclusions:

1. Reference 24 does not appear to be a relevant data source for the parameters in Probabilities rows 1 & 2; please address the source of this information

2. The source of the parameter values in several Probabilities rows for Reference 25 are unclear. Please address the following discrepancies.
a. Neither continuation rates for CHC and LARC, nor failure rates from discontinued CHC/LARC, are reported in Reference 25 tables or body text
b. Only 1 LARC method - "injectable"- is included in Reference 25 tables, and the 12-month corrected failure rate of 6.7% is inconsistent with the 3% rate listed for LARC in Probabilities row 9.
c. The combined one-year failure rate of 15% for condoms/withdrawal (Prob. row 12) is inconsistent with the individual failure rates of 17% (condoms) and 18% (withdrawal)

3. The cost of medical contraceptive visits in Costs (2018 U.S. dollars) row 2 ($179, range $150 - 300) is unreasonable. Although it represents a CPI adjustment from previously published estimates, it is out of proportion to the published Medicaid reimbursement rates for Oregon Health Plan (OHP) ambulatory services in 2018. Does Figure 2 still hold if a significantly lower provider counseling visit cost is used?
a. Reference 31 (Table 2) lists a Clinic visit cost of $149 in 2011.
b. The original 2011 source lists clinic visit cost of $140 ("from FPEP records")
c. The November 2018 OHP Fee For Service Fee Schedule for non-facility (i.e. ambulatory clinic) primary care services is listed below
i. New patients: 99203 ($82.60); this is the most common contraception initiation service level and the most comparable to pharmacist-prescribed candidates
ii. New patients: 99204 ($126.12) & 99205 ($158.65)
iii. Established patients: 99213 ($55.96), 99214 ($82.46) & 99215 ($111.41)
iv. Level 4 & 5 ambulatory visits for contraceptive initiation likely address medical conditions that would disqualify candidates from pharmacist prescription.

4. The source of the cost of CHC use in Costs row 4 is similarly unclear. The Reference 31 (Table 2) entry is $98 (2011).

Is Medicaid data not available for actual costs for HC (which commonly exceed $12/month for even generic prescription programs).

5. The impact of 12 month supply from pharmacists is listed as a potential positive influence on the outcome measures, but the same benefit is not applied to physician/practitioner prescriptions. Is there evidence that a difference exists in dispensing practices?

6. Line 79-81: The majority of ZIP codes have a pharmacist certified to prescribe HC. The reference is unretrievable so the rate cannot be assessed (i.e. "majority" represents 51% - 99%; what is the penetrance at the time of this evaluation?)

7. Line 204 "Assuming these states…" projects dramatic cost savings and increased QALYs , although line 243 "Data from California…" acknowledges "…the low availability of services when reimbursement is not assured." Table 3 "Assumes implementation rates equivalent to Oregon", which does not appear to be valid currently. Since California would account for 63% of the "Unintended pregnancies averted" (512/810), the projected impact of pharmacist prescription should not be overstated.

Reviewer #4: Although I cannot comment on the modeling, I would like to suggest that the authors only studied incremental costs associated with the program from the Medicaid perspective only. Even with that, they did not include any of the start-up costs (training, administration policy implementation, credentialing, etc.) that need to be amortized over time. And there are ongoing administrative costs of maintaining the program. Also the model did not include many of the pharmacists' costs -- extra shelf space, additional staffing requirements. Using Medicaid reimbursement rates to capture all those costs provides really a narrow and somewhat artificial analysis. This should be acknowledged in the limitations.

The authors measured unintended pregnancies, not pregnancies aborted; so we are not able to calculate cost per pregnancy averted. Using the differences the provide, the cost of each of the extra 51 pregnancies prevented was $31,511. In preventative health terms, that is an acceptable cost, but that is an unusual way to approach the question. I am not certain that this study qualifies as a cost effectiveness study in the traditional sense. It is really a comparative cost analysis, even though it does not include al the costs of establishing and maintaining this system. But it is a start.

STATISTICAL EDITOR COMMENTS:

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

lines 52-54: Where is the data analysis to support this statement?

lines 162-163: Where is the tornado diagram?

lines 167-168: The Monte Carlo simulation was stated to have used 10,000 trials, but Fig 3 legend states 100 trials and the figure itself apparently has >> 100 entries. Need to clarify.

Table 1: How were the ranges chosen? Should cite in the Table where beta or gamma or other distributions were used. Many appear to be linearly spaced around the mean value and not from 50 to 200% of the base values as cited on lines 160-161. Were these just convenient ranges? Or, for example, the range of life expectancy was 50-55 around an expected value of 53.8. How was that range chosen, it seems too narrow.

Table 2: Since only two strategies are compared, no need to cite one as dominant and the other as dominated. Sufficient to say that pharmacist prescribing policy was dominant.

Fig 2: Need to change the y and x-axes to fewer increments of cost (e.g., $0-$225, in 25$ increments) so that the reader can more easily see the range of costs considered. As is, it is essentially unreadable.

EDITOR COMMENTS:

1. Thank you for your submission to Obstetrics & Gynecology. In addition to the comments from the reviewers above, you are being sent a notated PDF that contains the Editor's specific comments. Please review and consider the comments in

this file prior to submitting your revised manuscript. These comments should be included in your point-by-point response cover letter.

The notated PDF is uploaded to this submission's record in Editorial Manager. If you cannot locate the file, contact Randi Zung and she will send it by email - rzung@greenjournal.org.

- The objective for the abstract should be a simple "to" statement without background.

- Please consult the Instructions for Authors regarding the use of abbreviations, and what constitutes an acceptable abbreviation. This is not an acceptable abbreviation. Please spell the words out throughout the manuscript.

- what is the standard? Although it may be difficult to do so in the abstract, its important to clarify at least in the paper, that you are only looking at the results in the Medicaid population, I assume that pharmacists can prescribe as well for women without medicaid, including insured patients. The results section needs a bit more data in it. Its not clear what data you used to estimate the results in the other states. Perhaps in your abstract you should
focus on the Oregon results only.

- individual is unclear. Maybe "woman"? Also may be consequence for the child, if pregnancy carried to delivery.

- State whose program Healthy People 2020 is.

- one of the points you made in the conclusion of your abstract is that full implementation is needed. Could you foreshadow that conclusion here by giving an estimate of the % of retail pharmacies in the state that offer this?

- Another choice would be a woman who choose to go to her provider initially, without referral from pharmacy even if she could have gone to a pharmacy.

- Should these 2 highlighted words be deleted?

- Please explain in the methods a bit more about how you estimated this for the other states. Did you simply take the results from Oregon data and essentially apply it to the medicaid population in those states, aggregated? I assume different states reimburse at different rates than Oregon. This part of your results seems a bit "soft".

- put in present tense. Also, your study is a cost analysis, not an RCT so you cannot really know that the program Impacted unintended pregnancy rates, just that your model suggests that it might have. Please avoid causal language (like impact, or resulted in, etc) throughout your paper.

- do you expect more pharmacists to get training and retail chains to offer this? What has this done to staffing models at pharmacies? If the pharmacist is tied up with counseling, what does that do to work flow for filling scrips, other sorts of counseling, etc?

2. 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.

3. 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.

Any author agreement forms previously submitted will be superseded by the eCTA. During the resubmission process, you are welcome to remove these PDFs from EM. However, if you prefer, we can remove them for you after submission.

4. 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.

5. 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.

6. 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 26 typed, double-spaced pages (6,500 words). Stated page limits include all numbered pages in a manuscript (i.e., title page, précis, abstract, text, references, tables, boxes, figure legends, and print appendixes) but exclude references.

7. 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).

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 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.

12. Figures 1-3 may be resubmitted as-is.

13. 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.

14. 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 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 21, 2019, we will assume you wish to withdraw the manuscript from further consideration.

Sincerely,

Nancy C. Chescheir, MD
Editor-in-Chief

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

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