Author's response to reviews

Title: Correlating pharmaceutical data with a national health survey as a proxy for estimating rural population health

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Author's response to reviews: see over
Dear Dr. Ezzati:

On behalf of my co-authors I am pleased to re-submit our original research manuscript to Population Health Metrics - “Correlating Pharmaceutical Data with a National Health Survey as a Proxy for Estimating Rural Population Health,” (MS: 1600073350309935). The technique we use in the manuscripts focuses on using prescriptions-filled data at the county level as a proxy measure for chronic illness prevalence, especially as it relates to rural areas which usually can not be extrapolated from national survey data. We argue in the manuscript that our tests validate prescription-filled data as a viable proxy measure for chronic illness, especially in the absence of small area measures. As such, it is a potentially new and useful metric of population health.

We have addressed the reviewer’s comments in the text, in most cases via the inclusion of explanatory text, and have, as requested, highlighted those changes. More specifically we have greatly expanded the Limitations section within the Discussion to detail the progression an individual makes from first recognizing an illness to obtaining drug treatment for a chronic illness and furthermore the conditions necessary for an individual to be included in a representative national survey of chronic illness in the population. We also expanded our discussion of the selection process used to determine the basket of drugs for each illness, further outline the rationale, and suggest potential future refinements.

These expanded explanations should address the following comment: “The editors’ request was not to correlate diabetes and prescription, but to report the percentage of all diabetes cases that would be diagnosed vs. missed if only the question on medication use was used in NHANES. This should then be used as the basis of a discussion on the validity of the method.” In fact, no survey that we are aware of measures undiagnosed (and hence untreated) chronic illness. Nor have we suggested that our methodology could provide a full and true account of chronic illness prevalence. Researchers, using non-survey methods have estimated the number and cost of undiagnosed illness (Zhang, et al. The Economic Cost of Undiagnosed Diabetes, Population Health Management, 2009; 12(2):95-101); however, surveys by their nature cannot identify and parse the undiagnosed population.

We have uploaded nine color maps, three each which depict the chronic illnesses in question: heart disease, stroke and diabetes.

Mississippi State University is not a member of BioMed Central. As such, we agree to the 2009 article-processing charge of $1,535.

The authors declare that they have no competing interests.
We would like to thank the three diligent reviewers for their thoughtful and probing questions. This helped us provide a fuller explanation of the methodology, assumptions and limitations. We would also like to thank the editors and staff of *Population Health Metrics* for working with us to bring this manuscript to publication.

Any communication regarding this article should be directed to me. I look forward to working with your staff on this manuscript. Thank you very much for your consideration.

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