Reviewer’s report

Title: Effects of Smoke-Free Air Law on Acute Myocardial Infarction Hospitalization in Indianapolis and Marion County, Indiana

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Reviewer: Khuda Bakhsh

Reviewer's report:

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The research article "Effects of Smoke-Free Air Law on Acute Myocardial Infarction Hospitalization in Indianapolis and Marion County, Indiana" is designed to see the impact of smoke-free air law on hospitalization in Indiana using data from various sources. The study is basically focused on effectiveness/usefulness of the law and seems to provide interesting results. However I find substantial changes to be made in presenting results of the study. My comments/suggestions are as under

Background

Objectives and research gap are not comprehensively written. The authors mentioned that no study on this issue is available. However, many studies on the impact of smoking on human health are available even studies are available with and without smoking zone. So the need is to review the relevant literature.

Methods

It is not clear whether information on smoking status was available with hospital records or such information was obtained from the patients. What was the method used to get demographic information from the patients? Interview, questionnaire, etc.? Whether all the patients were contacted or selected using some statistical sampling method? Some locations from the target population are not considered in the study due to the fact that smoke free air law is not fully
observed. The question arises if a person residing in the place where the law fully exists and he/she works at the location where the law is little relax. How the problem was handled?

Authors write "We obtained age-specific population estimates for the entirety of Marion County for each year 2007-2014 from the US Census, based on age group: <65, 65-74, >=75" however they have not provided the reason for considering this age group and why this was chosen only excluding other age groups.

Regression analysis

The count model is used to determine the impact of the law in relation of race and gender. Poisson model was selected. However, many other count models are also used for such type of data, poisson model is used after certain assumptions are fulfilled, and however this thing is missing. Why the natural logarithm was used?

Results

Table 1 reports smoking status, however I can't understand whether these patients were admitted due to smoking or some other reason? The study in the introduction indicates that the patients before and after law enactment will be compared to see the impact of the law. However, the tables given in the study don't indicate these aspects. Further, each table comes with different types of results such as first table shows results on yearly basis, second table on demographic basis. Comparison group is not clear in all the tables. I recommend to have comparison group i.e. before the law and after the law. Statistical tests be employed to determine the significance of the difference, if any

In methodology section, it is mentioned that Poisson regression was employed however, no detail is given in results section as tables containing Poisson regression is missing in the text.

Conclusions

This section needs more elaboration especially relating to regression results i.e. demographic factors and patients.
Are the methods appropriate and well described?  
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?  
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?  
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Nil

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