Reviewer's report

Title: Awareness and Management of Chronic Disease, Insurance Status, and Health Professional Shortage Areas in the REasons for Geographic and Racial Differences in Stroke (REGARDS): A Cross-Sectional Study

Version: 6 Date: 22 January 2012

Reviewer: Brian Bruen

Reviewer's report:

• Major Compulsory Revisions

The author must respond to these before a decision on publication can be reached. For example, additional necessary experiments or controls, statistical mistakes, errors in interpretation.

1) The authors’ description of their methods is relatively thorough, but some missing details raise questions about the results. First, the article by Howard et al (2005) that the authors reference re: the sampling scheme and methods does not fully explain the information provided to participants at the time of enrollment/informed consent. Were participants informed that the study involved cardiovascular disease? Comparing the NHANES results with the REGARDS results, individuals in REGARDS are more likely to be aware of their hypertension, hyperlipidemia and/or diabetes than the nationally representative NHANES sample. The authors do not provide any evidence/results to indicate whether the prevalence/incidence of these diseases is higher among the REGARDS population. This omission makes it hard to judge whether a sampling bias may exist.

2) Second, I am concerned that key variables may be missing from the model, leading to omitted variable bias. The authors do not appear to control for comorbid conditions (e.g., controlling for diabetes or hyperlipidemia when running hypertension models) but these are factors affecting hypertension. The REGARDS study collects information on family history and dietary intake, which are additional risk factors for the observed conditions, but the authors do not include in their model. But the most glaring omission, which the authors acknowledge, is the lack of any ability to control for actual use of health care services. The key conclusion to the paper is to increase staffing in HPSAs, but the authors’ findings do not justify this conclusion. They speculate in the discussion that the uninsured in HPSAs may have less continuity of care, but I have my doubts that the continuity of care is that much better for uninsured people in non-HPSA locations.

3) I have a hard time making the leap of logic from your findings to your conclusion(s). I see no evidence in this paper that the federal government needs to increase the non-physician workforce and build infrastructure in these areas. Except for hypertension, the findings suggest comparable levels of control for
chronic diseases compared to other areas. You don’t measure how much any of your study members actually interacted with medical personnel of any type.

4) The X-axis in the Figure is labeled as “HPSA Residence” but the categories for the bars are insured and uninsured.

**Minor Essential Revisions**

The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes.

5) The authors should be clear in the methods section that all information used in this study came from the baseline of the study (i.e., entrance interviews, medical exam, questionnaire, etc.).

6) There are several extremely long paragraphs in this manuscript with many different thoughts in them. For example, the first paragraph in the background section, the third paragraph of the discussion (starting with “Among the uninsured only”), and especially the fourth paragraph of the discussion (starting with “Despite the relatively similar”). The latter paragraph goes on for about two full pages!

7) I would prefer to see parameter estimates or impacts rather than just odds ratios, to be able to judge whether the odds ratios represent substantive differences rather than just statistically significant differences.

8) I strongly prefer to see complete models and results provided for multivariate analyses, to facilitate review.

**Discretionary Revisions**

These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential.

9) I’m not sure this is possible using the baseline cross-sectional data from REGARDS, but some measure of time uninsured and how long the person has had hypertension/diabetes/hyperlipidemia would add value. People who have only been receiving treatment for a short time may be uncontrolled for a “good” reason compared to people treated more long term.

10) The authors note that they use the 4-item Morisky scale for medication adherence. Is it not possible to use the 8-item scale? My understanding is that it is a bit more robust.

11) I worry a bit about “control” of diabetes/hypertension/hyperlipidemia being based on a single measure at a single point in time. Is it possible to assess control for the population over a longer time frame given the longitudinal nature of the REGARDS study?

**Level of interest**: An article whose findings are important to those with closely related research interests

**Quality of written English**: Needs some language corrections before being
published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.