Reviewer's report

Title: Effects of Residence and Race on Burden of Travel for Care: Cross Sectional Analysis of the 2001 US National Household Travel Survey

Version: 1 Date: 6 January 2007

Reviewer: Lee Mobley

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General

This article makes important contribution to the literature regarding travel for healthcare, as it is one of few that uses actual travel distance along routes to provider and actual time traveled to provider from travel diaries. The vast majority of studies use distance 'as the crow flies' between two points (home and provider) and may not actually capture the actual route taken, for example when trips to medical providers are taken as part of other trips to/from work or shopping. The consistencies in findings from this study and those using flying crows is encouraging, because these others with less precise travel information are often able to adress several limitations of this study (most notably the lack of statistical controls for disease severity, or characteristics of the population composition or place-specific context at the place of residence).

One should be careful not to be overly confident regarding the national representativeness of this study, however, as there is limited information regarding how representative of the national sample the study subset is (study subset is specific types of trips in a subset of areas defined as rural using non-traditional methods), and no way of knowing how locally representative (of specific states and communities) the national sample actually is. Couching these findings as pertinent to a convenience sample might be more appropriate.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. Is there information regarding how many sampling points are derived from each state, or is the only geographic information available the location in one of the four regions?
2. A table with sample statistics would be useful, including information such as the geographic distribution of the sampling units.
3. The NHTS is a nationally representative sample of households, however more description is needed regarding the household sampling methodology, and a discussion regarding how this nationally representative sample may not be locally representative (of individual states). This is especially true when a subset of the sample is used, as done here. Is the sample subset representative of the geographic regions in proportion to the whole survey? If not, comment regarding how the sampling design weights from the survey are still valid (or not) for this study.
4. The results in Tables 1-3 seem to be unweighted; why is this? Are the multivariate regression results also unweighted?
5. In the discussion of Tables 1-3, the term ‘not shown’ crops up repeatedly. It seems that more is not shown than is shown. Please include this information in a table.
6. ‘Job density’ needs to be defined.
7. The statistical methods need to be described in more detail on p. 10. For example, are the results in Tables 1-3 unweighted? What is being tested with the p-values presented there? In Table 4, are the observations weighted? What method is being used for estimation (logistic regression of separate equations?). Please provide some diagnostic evidence of goodness of fit, such as a prediction success rate, perhaps with sensitivity (correct % Y=1) and specificity (% correct Y=0) broken out from overall prediction success. Please indicate ORs that are statistically significant with an asterisk and note this with the level of significance in the table header.
8. On P. 15, you state that you cannot tell whether differences among blacks and whites in time burden stem from patient choice or provider availability. There are many other place-specific factors associated with residential location that might explain this as well. In the socio-ecological literature, it is noted that compositional factors (population characteristics of places such as racial or ethnic residential segregation) along with contextual variables (such as commuting behavior in residential neighborhoods that contributes to local traffic congestion) both contribute to behavioral outcomes. Because you do not have location of residence as part of the data, you cannot control statistically for a myriad of factors that might explain the apparent disparities. Please add more discussion of this to this section.
Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

9. On page 6, are citations 27 and 28 reversed (in each other’s spot)? On page 4, is reference #8 relevant?
10. Did you consider stacking your equations (one for each dependent variable) and estimating them as a system? This might improve efficiency, and SUDAAN should be able to do this.
11. Do you have any information regarding what the population density cutoff might be, used by Claritas to define the rural quintile? This would be useful information because one could use it to determine how well the group of regions in this quintile corresponds to other definitions of rural, such as those derived from the BEALE or urban influence codes. If these are comparable, it would clear up doubt regarding whether findings might be sensitive to the unusual definition of ‘rural’ used in the study.

Discretionary Revisions (which the author can choose to ignore)

On pages 5 and 9 – you might say distance traveled is ALONG ROADS – this would stress this unique feature of this study.

13. Why have kilometers in one place and miles in another?
14. Are Hispanics less likely to own cars or have drivers licenses?
15. Longer night-time trips – perhaps these reflect more emergency-type care? Or alternatively more discretionary, planned trips to more specialized providers for more intensive acute care problems (such as heart surgery)?
16. An additional article that is almost national in scope which assesses travel for healthcare that you might want to include in your discussion is:


17. Your review of the accessibility literature is very good, however an important article that you might read and include in that discussion is:


18. p. 15, where you cite reference #36, #11 may also be appropriate. Where you cite # 7, 16, and 40, # 5 may also be appropriate as well as this recent study which assesses the relationship between illness severity and propensity to travel farther than one’s neighbors:


What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.