Reviewer's report

Title: Assessing the context of health care utilization in Ecuador: A spatial and multilevel analysis

Version: 2 Date: 22 December 2009

Reviewer: David Hotchkiss

Reviewer's report:

Overall, the authors have done a very good job in responding to my earlier comments. Below are further suggestions for improving the paper.

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

In the abstract and introduction, the authors refer to the literature on health outcomes, which is no longer the focus of the paper. For example on page 2 (first paragraph), the authors state that “Most studies analyzed the relationship between income inequality and health outcomes, and food poverty”, which I believe is referring to studies on health outcomes. The authors should make sure that the references match the revised focus of the paper.

Page 6, middle paragraph: How did the researchers rank households by assets, and by consumption levels? This needs to be clarified.

Table 2: I assume this table consists of individuals of all ages? How did the authors classify educational attainment status and marital status among children? Please clarify.

Page 10, second sentence: “Both assets and consumption quintiles show a negative gradient…” I think the authors mean “positive gradient”, since use of preventive services increases with wealth? Please clarify.

Table 4: In the responses, the authors state that the sample size was 46,497 for all models, but is not information on the use of curative care only based on those who report a health problem, as I believe the authors state elsewhere in the paper? The table needs to include the N’s for each model estimated.

Table 5: Do the odds ratios for the indicators of the density of providers incorporate the effects of the interaction terms included in the model? Please clarify, perhaps with a note on the bottom of the table.

The discussion section could be better organized. Currently, the section consists of three very long pages covering a total of four pages, with some of these paragraphs containing ideas that are not well-linked. For example, the first paragraph summarizes the research findings, discusses urban/rural disparities in the availability of health workers, discusses alternative models of medical education, and then finally mentions that Ecuador has introduced a community
health program which has yet to be evaluated. This paragraph, and perhaps the other two, should be broken up into two or three shorter paragraphs, with each paragraph opening with one main point or idea captured in a topic sentence.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Page 2, fourth paragraph, first sentence: replace ‘is a’ with ‘are’ and ‘gap’ with ‘gaps’.

Page 3, first paragraph: replace “Pan-American” with “the Pan American”

Page 5, second paragraph: Regarding the interview with an adult about health care utilization and expenditure – was the adult asked about their own health care use and expenditure, or about those of all members of the household? I assume the latter, but this should be clarified.

Page 11, Discussion section, first paragraph: “The study finds evidence of a statistically significant relationship between availability of health services and utilization of such services…” The study links indicator of the number of providers with health care utilization. If the authors are arguing that availability of providers is a proxy for availability of services, then the authors should provide a rationale for this argument, perhaps by discussing their results.

Page 11: “There seems to be a drastic difference in the provision of private physician services for rural household.” Replace “difference in the provision” with “difference in the effect of the provision”?

Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

Page 2, second paragraph, first sentence: Sentence uses both present tense and past tense verbs. Perhaps use present tense, in this paragraph and throughout paper?

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.