Reviewer's report

Title: Hospital Service Areas - A new tool for Health Care Planning in Switzerland.

Version: Date: 1 March 2005

Reviewer: Mark Guagliardo

Reviewer's report:

This review is organized according the guidelines provided by the journal.

1. Is the question posed by the authors new and well defined?

It is not new method. However, it is a new and important application of a well-defined method.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

The methods are appropriate and reasonably well described, but the manuscript would be improved by responding the questions posed in the “Revisions” section, below.

3. Are the data sound and well controlled?

Well enough.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

The figures need improvement as described below.

5. Are the discussion and conclusions well balanced and adequately supported by the data?

Some improvements are in order. See “Revisions” section.

6. Do the title and abstract accurately convey what has been found?

Yes.

7. Is the writing acceptable?

It can be modified to be acceptable.

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

1. The manuscript is not reviewer friendly. The authors have not followed the journal guidelines for format. It would be helpful if the text was double-spaced and page numbers were used.

2. Beginning with the “Results” section, paragraphs as not properly separated with an
3. The authors might consider adding to the list of references the only other hospital service area study to be published in this journal or in any BioMed Central journal – Guagliardo et al., Jan. 2004 4:2.

4. In “Results”, “Health Utilization Indices” is the statement that three geographic patterns emerge from Figure 3. The first is that HSAs of mountainous regions had above average LI. Readers unfamiliar with the physical geography of Switzerland cannot see this. Might there be a way to recreate the map to convey both the HSA LIs and the physical and demographic geography of the country?

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

1. As this is an English language publication the term “Mio” should be changed to “million” through the text.

2. When the abbreviation, HSA, is used to refer to multiple one hospital service areas then an “s” should be added to make it plural, i.e. HSAs.

3. Same point for LI (singular) and LIs (plural).

4. In the second paragraph of “Background” change “demand induced supply” to “supplier induced demand”. I assume that is what was meant. If not, then please explain.

5. In the same sentence change “variation phenomena” to “variations”.

6. The meaning of the second-to-last sentence in that paragraph, beginning with “Information must be” is not clear. Consider a way to revise the last three sentences of the paragraph to convey the point more clearly.

7. In the first paragraph of “Methods” please provide a rationale for using the four years of data that you chose. Why four years? Why those four years in particular? Are more recent data available? If so, why were they not used? Would they not be more relevant for national planning?

8. The explanation of why zip codes were not used should (patient confidentiality) should be moved from the “Discussion” to the “Methods” section.

9. In the first paragraph of “Methods” a sentence begins with the numeral “215”. The number should be spelled out at the beginning of the sentence, or the sentence should be rewritten to begin with a word instead.

10. The use of 1990 census data should be justified. Does Switzerland not have more recent census data that would be closer in time to the utilization data?

11. In the “Methods” paragraph entitled “HSA Characteristics” this sentence should be reworded: “It indicates how localized care is provided.” I think the authors mean something else, such as “It indicates the degree of localization of care provision.” Or something similar.

12. In the first paragraph of the “Discussion” there should be a paragraph break at the sentence beginning with “Ideally, all hospital care...
13. In Figure 4 the two lines are the bottom should begin with capital letters.

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

1. Figure 1 is too busy. The HSA labels are difficult to read, and they make it difficult to follow census area borders and HSA borders. It is difficult to suggest how to solve the problem. Furthermore, I suggest above that readers would benefit from a map showing the physical and demographics geography. It may well be that two maps are insufficient for the manuscript. This is not surprising, as the manuscript is the beginning of a research program like that of Dartmouth, which produces whole atlases. Perhaps the authors can consult with an accomplished cartographer to determine the best way to convey all the information in three or more maps. Of course, the “Results” and “Discussion” will have to be reworked to match the new maps.

2. Figure 2 would benefit from some attention. There is redundancy. Six graphs are used to convey the information of three correlations. Three of the graphs can be removed. If the authors do not like the imbalance this creates they might consider another arrangement. Also, each graph should indicate the correlation statistic and P value.

3. The paper is needlessly short in some areas. Most significantly, the “Statistics” section is too brief. There does not seem to be a plan or purpose for the tests described. In the results some statistically significant findings are reported, but the reader does not know if all tests conducted are reported. Nor is it clear why some comparisons and correlations are made and others are not. The purpose of each comparison or correlation should be explained in the “Methods”, even if the value is obvious to the authors and persons who are familiar with HSAs.

4. The “Discussion” makes it clear that HSA is a reasonable concept for Switzerland and the paper does a good job of showing the HSAs exist there for the most part. The paper also does a good job of explaining how HSAs are created and covers some of the pitfalls, generally, and some of the challenges unique to Switzerland. However, the “Discussion” does say anything about the healthcare policy significance of an HSA system for the country. The authors should explain, perhaps with examples, how hospital services might be managed differently with the availability of this new system. It may be obvious to the authors and to researchers familiar with HSAs. But it will not be obvious to many readers, including some policy makers in Switzerland. What is the next step? Where can the work go from here?

Your advice on publication.

The paper should not be published in its current form. However, it has a number of strengths and it is a potentially important contribution of national significance for Switzerland. The authors should be encouraged to make revisions, after which the paper should be published.

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

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Needs some language corrections before being published
Statistical review: No