Author's response to reviews

Title: Measuring health inequalities in Albania: a focus on the distribution of general practitioners

Authors:

Pavlos N Thodorakis (paultheodorakis@yahoo.com)
Georgios D Mantzavinis (gmantza@yahoo.com)
Llukan Rrumbullaku (llukanrr@icc-al.org)
Christos Lionis (lionis@galinos.uoc.gr)
Erik Trell (erik.trell@ihs.liu.se)

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Author’s response to reviews: see over
Dear Editor,

We were pleased to hear that the Human Resources for Health is interested in a revised version of our manuscript. We are grateful to the reviewers for their constructive comments. We have addressed these comments in the current version. In more detail:

**Reviewer 1 (Dr Mark Hann)**

General
Measuring Health Inequalities in Albania: a focus on the distribution of General Practitioners

This brief but interesting paper, through the use of standard health-economic techniques, measures the extent of inequality in the geographical distribution of general practitioners (GPs) in Albania during 2000. The article is generally well written, and is methodologically and analytically sound as far as it goes.

**We wish to thank the reviewer for the positive comments.**

However, my main concern is that it lacks a context, focussing as it does on just one snapshot in time (and five years ago at that). The upshot of this is that it is impossible to come to an informed conclusion about the observed level of inequality. The findings need to be discussed in relation to, for example, the (mal-)distribution of other health resources in Albania, inequality in general practitioner distribution in other European countries, or, preferably, inequality in general practitioner distribution in Albania in previous years.

Accordingly, I cannot reach a decision regarding the suitability of the article for publication, although I would lean towards rejection in its present state. However, I would strongly encourage the authors to revise the article as this is an area of research which provokes a great deal of interest: it is a persistent policy concern in many countries world-wide. I would blindly hypothesize that it is likely to be so in Albania also, given its recent history (which I have to say I know nothing about!).

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

1. The paper is not very up-to-date. As is the case in the UK, the picture of health care in Albania may have changed somewhat in the past five years: the small amount of information available may, therefore, be of limited use to policy makers. My feeling is that, in order to be of any credence, a time series must be considered essential, in order that the reader can obtain a much broader idea of how GP-inequality has varied over time. I do, of course, sympathize with the authors regarding data availability, but they seem to indirectly imply that data is available from 1991. This would lend itself to a much more substantial piece of work.
We managed to find and use data on GP provision from 2000 to 2004, creating a time series. It was not possible though to find further data on GP provision for the previous years, despite the “digging”. The sentence in discussion section, page 8: “Furthermore, there are not enough available data for Albania that would allow us to compare the degree of inequality in the distribution of general practitioners with that before 1991 when Albania was isolated from the rest of the world.” has been changed to “Furthermore, analysis and comparison with previous years was not possible, because data was destroyed during the 1997 civil war in Albania.”

2. The paper is methodologically incomplete. By this I mean that only one measure of inequality (the Gini coefficient) has been considered, along with only one method of needs-adjustment (mortality).

In relation to the former, why, for example, did the authors not calculate the decile ratio and the Atkinson index as well?

As suggested, we have calculated the decile ratio and the Atkinson index as well together with the Gini index, Lorenz curves and Robin Hood index. We have also adjusted for consultation rates in all cases. All of these are presented in the methods, results and discussion sections accordingly.

In relation to the latter, mortality is less obviously related to chronic conditions that are important in general practice? I don’t think there is a debate on this issue, as the authors state in their Discussion and Conclusions.

We agree that there is no “debate”. We have rephrased to:

Discussion and conclusions section:
“…There is a concern as to whether CMR represents an appropriate indicator for measuring population’s need for primary care provision. For that reason we also adjusted for consultation rates, which possibly reflect population need more accurately.”

Is data available on the age/sex structure of the population, consultation rates or morbidity/long-term illness? These can then be used to need-adjust the population. Previous work has shown that the level of inequality is sensitive to the method of need adjustment.

We were not able to find data on age/sex structure of the population by district, morbidity or LLI by district. We managed though to find data on consultation rates for the years 2000-2004. As suggested, we have used consultation rates per district as another measure of need-adjustment (see above). Changes have been applied to methods, results and discussion sections accordingly in the manuscript. As seen from the results we also confirm that the level of inequality varies depending on the adjustment method.

3. In the Methods? Setting sub-section, how were general practitioners assigned to districts? Some detail should be given if known.

We have added in the corresponding section the sentence: “It is the responsibility of regional branches of the Health Insurance Institute to assess the changing needs of
general practitioner posts in each district. District Public Health Directorates are then responsible for recruiting or re-location of general practitioners.”

I am also concerned about the discrepancy between the numbers of general practitioners identified by the two data sources. The number identified by the UNCF survey is almost 10% greater than the number used in the study. I would expect a high degree of relative association between these two sets of numbers; it’s the absolute differences that could prove crucial. How about repeating the analysis using the UNCF data?

There was indeed a discrepancy in the data between the two sources. We assume that there has been a “misclassification” error in the UNICEF dataset, possibly by counting not clinically-active physicians assigned to GP-posts, in the total number of GPs. We now omit the whole part about the UNICEF data, since data collected from the Health Insurance Institute were similar to the data obtained from the Ministry of Health.

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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. The third paragraph of the Background should read:
   In the present study we calculated the level of inequality (a similar phrase is also required in the first sentence of the Methods ? Analyses sub-section) in the distribution of general practitioners and the number of general practitioners that needed to be re-located in order to achieve an equitable distribution?

   Changes have been made as suggested.

2. In the UK the phrase ?general practitioner? covers a number of different ?types? of primary care doctor. What does this definition cover in Albania?

   The issue is clarified in the Background section.

3. Can the authors clarify the phrase ??permanent size of the population ?? ? For information purposes, how is population data collected in Albania? Does this phrase refer to the ?resident? population ? those living within the boundaries of the district, or the ?registered? population ? those on the register of a general practitioner working within the district?

   We have rephrased to “annual average population”, which represents the resident population. Population by district for year 2001 was taken from the results of Population and Household Census, while for the other studied years it represents population estimations by the Institute of Statistics of Albania (INSTAT).

4. The final sentence of the Methods ? Variables sub-section should read:
   The NAI was calculated by dividing the GPPR by the CMR.

   It has been revised as suggested.
Discretionary Revisions (which the author can choose to ignore)

1. A more detailed Background would benefit the reader: for example, a brief summary of the recent history of Albania, plus some information on the healthcare system, including recent major changes.

   We have enriched the Background section as suggested. We avoided adding more information in order to keep a balance between different sections of the manuscript.

2. Maps of general practitioners per 10,000 population, by district, are useful for snapshot data. This will, of course, depend on how the authors decide to revise the paper.

   Since we have changed the whole concept and presentation of the paper and is no longer a “snapshot”, but a time-series, we did not think that maps would offer more information to the potential readers.

Reviewer 2 (Dr Javier Llorca)

General
This paper studies the distribution of general practitioners in Albania and its relationship with crude mortality using two measures of inequality: Gini index and Robin Hood index. The article is interesting and well written.

   We wish to thank the reviewer for the positive comments.

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

1. The Robin Hood index seems to have been estimated in different ways (see, for example, Johnston G, Wilkinson D (2001) and Wilkinson D, Symon B (2000)). The authors should clarify how they have estimated it.

   We estimated the Robin Hood Index in the way that has been accepted in the socioeconomic studies (see Kennedy et al. BMJ 1996), as explained in the manuscript. The Robin Hood index represents the proportion of physicians in relatively over-served areas that would have to be redistributed to under-served areas in order to achieve equal distribution in all districts. As a cutoff we used the distribution of GPs for the whole country. In the two publications referred to by the reviewer, the Robin Hood index has a completely different meaning. We have previously commented the issue of different ways that Robin Hood Index is used in these cases, in a letter that was published in Aust N Z J Public Health (Mantzavinis et al. 2002), which has been used as a reference in the present study.
2. The method used to adjust for crude mortality is unclear and should be explained with some details.
3. (Related to 2) As defined in page 4, the need adjusted index (NAI) is simply the inverse of the number of deaths by each GP. It’s unclear how NAI should be interpreted: (a) a measure of population need?, (b) a measure of inequality in GP competence? Other interpretations would be adequate. The paper would be improved discussing this limitation of NAI.

2 and 3
We explain in more detail the way the calculation was done. In fact it is the same way that Wilkinson et al have calculated the “Robin Hood Index”. We believe that it represents a measure of need. All these issues are further discussed now in the Discussion section as suggested.

4. No results from other studies (out of Albania) are shown in the discussion section. This section would be improved including some comparisons with other countries.

As suggested, we have incorporated in the new discussion section, results from other similar studies. As explained it is not always easy to compare such results, because of the possible difference in the health system structure, the level of division and the cross-boundary flows of population.

We want to thank you again for these constructive criticisms and for giving us the opportunity to improve our work. Having made these revisions, we hope that our manuscript would be acceptable for publication at the Human Resources for Health.

Sincerely,

Pavlos N. Theodorakis, MD, MSc, DipLSHTM, PhD
State Mental Health Hospital of Chania.
27 Voithitiki Souda’s Str, 73100, Chania, Crete, Greece.
Tel: +302821023531; Fax: +302821023530; E-mail: paultheodorakis@yahoo.com