Reviewer's report

Title: Health System Outcomes and Determinants Amenable to Public Health in Industrialized Countries: A Pooled, Cross-Sectional Time Series Analysis

Version: 1 Date: 17 March 2005

Reviewer: Ellen E. Nolte

Reviewer's report:

General

This is an interesting paper, describing a pooled, cross-sectional time series analysis of aggregate date to assess the association between factors considered amenable to public health and health system outcomes, here defined as all-cause mortality and potential years of life lost. The overarching aim is to highlight the role of public health policies as an integral factor of health system performance and the consequent importance of their inclusion in any performance assessment exercise. This is an important issue and the study could thus make an important contribution to the evolving literature on health system performance.

The authors took great care designing the study which, because of its ecological design is prone to many problems both methodological and in terms of interpretation of results, presenting a sophisticated model to overcome some of these issues.

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

Choice of explanatory factors: The authors acknowledge the limitations of some factors such as total tobacco consumption (p. 9, para 3, line 3) and that the chosen factors may at best be taken as proxies (p. 12, para 2); however, given the findings of other work that has looked more specifically at the association between health care input and health (care) output, it strikes me as odd that the present analysis chose to use physician density and doctor visits as indicators of medical care input (p. 6, para 4), which, in previous work, was found to show, at best, inconsistent results.

Selection of factors deemed indicative of public health policies versus medical care indicators: the authors define collective public health expenditure as a measure of public health policies, complemented by the indicator healthcare coverage, arguing that the latter would be a good indicator of the proportion of the population able to take advantage of services provided by the former (p. 6, para 2). This argument may hold in principle; however, I believe that using this indicator introduces a bias by reflecting access to care in general and, consequently, health care outcomes, rather than public health policies. Also, it is not quite clear how the analysis addresses the particular case of the United States with low levels of coverage in comparison with the remainder of the countries included in the study. According to table 1, the analysis excluded the USA in calculating this indicator; this is however not mentioned and thus requires corresponding explanation in the manuscript. On more general level it would be instructive to learn whether/how the results change if this indicator was excluded from the analysis. In any case, the authors are encouraged to discuss this particular issue more thoroughly.
A crucial problem not really discussed relates to the comparability and reliability of the underlying data. For example, while the indicator physician density as included in the OECD data set should include practicing physicians only the figures for some countries are in fact much broader and include all physicians entitled to practice. Similar issues pertain to the comparability of doctor visits (p. 6, last para). It is not clear from the manuscript which indicators are derived from which source (OECD Health Data 2003 or Annual National Accounts [references 35,36]); however, I assume that similar issues will pertain to the indicator collective (public) health expenditure (p. 6, para 2) and others.

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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)

In discussing their findings I am somewhat surprised that the author did not acknowledge the evidence emerging from the considerable body of literature that has looked at the concept of avoidable mortality that, while using a different methodological approach has highlighted similar issues, namely the importance of appropriate public health policies as an integral part of health system performance.

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Discretionary Revisions (which the author can choose to ignore)

**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 importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No