Reviewer's report

Title: Co- and multimorbidity patterns in primary care based on episodes of care: results from the German CONTENT project

Version: 1 Date: 27 June 2007

Reviewer: Henk Lamberts

Reviewer's report:

General
This is an important manuscript, because German General Practice is, from an international perspective, in a difficult situation. This study with the International Classification of Primary Care (ICPC) can help to position German General Practice for useful international comparisons, based on routine data collected during all patient-physician encounters.

However, the manuscript suffers from an improper use of the international standard definitions as used in episode oriented epidemiology

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

The authors should have used the recent WONCA publication by OUP 'ICPC-2-Revised', especially because of its companion CD-Rom, both because of its Glossary, and of the epidemiological model. The Glossary is the operationalization of the Wonca Dictionary, edited by Niels Bentzen, and the Dictionary of the Epidemiological Assn ed, by John Last.

My main objections refer to both denominator problems (a) and numerator problems (b).

Ad a). The preferred denominator is the # of patient years in a one year observation period. Consequent use of that will eliminate uncertainties about active and inactive patients. I presume that the German GPs did not include patients in the study without an encounter in the observation period, but whom they considered to be ‘their’ listed patients.

The observation period in this study is very unusual, and requires considerable recalculation of the standard rates. Especially in comorbidity, the observation period based on actual encounters for an episode - whether they are new or follow up - is important. This would also take care of the problem of ‘active vs inactive episodes’: by definition, each episode encounter in the observation period is active, and inactive episodes do not show up.

Ad b) Multimorbidity and morbidity are identical. Multimorbidity is not defined in the abovementioned Glossaries. ‘The simultaneous existence of two or more chronic episodes of care’ is not only not useful, but also inconsequential for this
manuscript. Opposedly, comorbidity is always specified by the episode of care under study, and requires the formal statistical treatment as abovementioned. It is quite possible to calculate comorbidity with regard to new and old episodes and to the period during which encounters for both episodes took place (see, again, the Glossary). M(ulti)orbidity in fact gives a proxy for illness diversity and for utilization. It is confusing to use different codes documented with ICPC without stating clearly what is meant: # of episodes or # of encounters. As a consequence, the concept of co-existence has to be defined for this study, and I presume it is meant to be identical to 'observation period'.

The terms Contacts and sub-contacts are used for encounters and subencounters. This should be explained, also stating whether an encounter is always face-to-face, or whether other encounter types are included (telephone, etc). The size of a comorbidity has to be presented as percentage together with its Odds ratio.

It is unclear whether or not the coding GPs have coded the certainty of their diagnosis, and how modifications in the diagnoses over time have been taken care of.

It is unclear what the multiple linear regression analysis really does. This needs more explanation.

The prevalences in table 4 cannot be interpreted because the observation period, resp. the number of patient years in unknown.

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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)

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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: 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