Reviewer's report

Title: Cause-specific mortality patterns among hospital deaths in Thailand

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Reviewer: Kanitta Bundhamcharoen

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The paper addresses the problem of poor quality of cause of death data in hospital and attempts to measure validity of registered diagnosis in a sample of deaths in hospital during 2005 in Thailand. The findings of 3,316 deaths in the study revealed an increase proportion of deaths from stroke, IHD, heart disease, transport accidents, HIV/AIDS, diabetes, liver diseases and COPD.

Although this study is not the first study that aimed to improve COD diagnosis in Thailand, it is an important study that can be used for more accurate estimation of hospital death statistics in Thailand. Such estimates would be valuable for epidemiological research and informing disease priority in public health policy.

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

1. It is not clear from the method description how the sample size was estimated from and what source of the sampling frame was. Even detail of the study design will be described in another forthcoming publication; such information would help readers to follow with the study design. The explanation on the selection of 2232 cases for the audit study was also missing, and it is not clear who conducted the audit on these cases.

2. On medical record review, it would be helpful to provide additional information on the number of trained personnel, provincial teams of physicians, trained coders, and whether the physician reviewers stated in the first paragraph on line 3, page 7 were a different person from the provincial teams and how many of them in that team. In addition, how many physicians were in the central expert team and what kind of expertise did they represent?

3. Two points are missing from the discussion. First, one of the problems of misclassification in hospital deaths is the poor link between data from (1)death registration to (2)death certificate issued by hospital and (3)medical record. This was reported in Choprapawan (2003) on the study of quality of hospital deaths by investigating the low level of agreement of COD from the 3 sources. (See Choprapawan, C. 2003. A study on quality of cause of death data in hospitals. Health Information System Development Office. A research report (in Thai).) The findings from the audit study of 2232 cases added value on reviewing the medical record to derive accurate COD which the previous study did not investigate.
Second, as the sample consisted of death from district and provincial hospitals, it is interesting to know if different levels of hospital had an implication on the strength of their medical evidence.

4. The findings revealed that weak evidence was found in 17% of the sample but did not report the % of cases with confirmed and suggestive evidence. Would that be possible to give the detail?

5. Were there any difficulties in reaching a consensus for physician review on COD? It would be useful to learn if there were any conditions which were difficult or uncertain to decide their underlying COD. For example, multiple causes of illness.

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. Table 2 (validation characteristics for hospital deaths in Thailand) does not seem to match with the text explanation (page8, line2 from the bottom).

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

1. It should be noted that septicemia was exceptionally high for Thailand and it is interesting to know if this pattern happens elsewhere. The mentioned 2 studies in Iran and China (reference number 5 and 12 ) do not present this category in their findings. It should be noted also that high proportion of septicemia in the vital registration started during the attempt to improve COD data quality, which at the same time led to much reduction of heart failure coded deaths.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.