Reviewer’s report

**Title:** Variations in hospital standardised mortality ratios (HSMR) as a result of frequent readmissions

**Version:** 4  **Date:** 29 February 2012

**Reviewer:** Mette Nørgaard

**Reviewer’s report:**

The review has addressed most of the previous comments. I am however not convinced from the discussion of causes of readmission that including frequent admissions should be strongly recommended.

I understand that if a hospital has several readmissions per patient the denominator increase and could thereby decrease their HSMR. But if a hospital has a really high standard of care which enables the hospital to improve the health of chronically ill patients in such a degree that these patients are able to have a time periods at home before new admissions may be needed I cannot see why such a hospital should be disfavoured by adjustments for frequent admissions. In that case the low HSMR is truly caused by a high quality of care. Also I cannot see why admission with e.g. a hip fracture three years earlier should affect a patient’s expected risk of dying of pneumonia in a later admission when computing the HSMR. I therefore suggest that the authors should modify their conclusion to state that HSMRs differ between the two models but let the readers decide for themselves whether or not it is clinically relevant to include frequent admissions in the model.

**Minor comments:**

1. On page 5 it says: This model includes clinical admissions and day cases that ended in in-hospital death. – This is not correct. The model includes all patients admitted with the selected diagnoses – not just the cases that died.

2. Present and past tense is still inconsistently used

3. On page 4 use of the term measurement errors is not entirely correct. Mortality is not incorrectly measured neither are covariates such as age and gender. The problem in using HSMR as a measure of quality is thus not caused by measurement errors but by the fact the several causes other than quality of care is associated with in-hospital mortality.

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

**Quality of written English:** Acceptable

**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