Reviewer's report

Title: The potential of electronic medical record systems for quality improvement and research in Norwegian general practice.

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Version: 1 Date: 15 Apr 2003

Reviewer: Elizabeth Mitchell

Level of interest: A paper whose findings are important to those with closely related research interests

Advice on publication: Other (see below)

General comments
The quality of data held in patients' electronic medical records is an important issue, particularly given the increased use of secondary analyses of primary care data for research purposes and improving practice.

The additional information gained from interviews with practice staff as part of the study is interesting and valuable when interpreting primary care data. The paper also highlights the variation in general practice and thus the challenges to standardising data.

Compulsory revisions
1. This paper does not assess the quality of data (accuracy of validity), but looks rather at the completeness of data recording and makes comparisons in frequency of recording between practices. The only aspect of quality considered was accuracy of diagnoses for diabetes and heart disease through comparison with prescribing. Therefore, quality should not be the focus of the paper. It should be the completeness of and variation in recording both within and between practices.

2. More detail should be given on how practices were identified and selected. Was every practice in Oslo contacted or only certain ones? In the introduction, the author also states that three main EMR systems are used in Norway, yet practices using only one of these participated in the research. This is mentioned as a weakness in the discussion but should be explained more fully.

3. Blank fields results - The numbers of blank fields have not been compared for all patients, but for a sample of 500 (0.5%) of the total. No information has been given as to whether these data relate to a sample of EMRs from every practice, some of the practices or only one practice. Again, this relates to completeness of data recorded electronically, not quality.

4. Patient contacts results - Again this is incidence / frequency of recording of contacts rather than the quality or accuracy of the data. No information has been given as to why results are based on 100610 of the 120934 patients and only 11 of the 14 practices.

Discretionary revisions
5. One aim of the study was to test the data extraction tool, but no information has been given on this or any related problems. Some information would be useful.
6. The introduction is concise, but nonetheless sets the scene for the research. I found the last paragraph slightly confusing - if the study team had already set out to evaluate the quality of data held in EMRs, why look at additional data which could be used for future research? Perhaps a brief explanation as to why the thiazide guideline was chosen would be helpful.

7. General results - There was a broad range of practice size. Was this accounted for in practice recruitment, since practice size, both in terms of staff and patients, undoubtedly has the potential to impact on recording?

8. The author states that height and weight are poorly recorded because they are noted in another section of the EMR where measurements can be recorded over time. Although the fact that only certain fields can currently be extracted is alludes to earlier in the paper, it does not mention that only certain sections of the EMR can / have been interrogated for this study. Is there a possibility that other data have been missed?

9. Diagnostic groups - The results here relate simply to the incidence of recording certain diagnostic groups as a proportion of diagnoses made. They do not relate to the accuracy of those diagnoses. This is alluded to in the interviews in terms of the use of clinical codes. Comparison with paper records / hospital correspondence for a sample of patients in each practice would have been beneficial.

10. Hypertensive prescribing results - It would have been interesting to know the percentage of diagnosed hypertensive patients receiving treatment.

11. The weaknesses of the study are described and the discussion provides additional insights from the staff interviews.

**Competing interests:**

None declared.