Reviewer's report

Title: Validation of ICD-9-CM Coding Algorithm for Improved Identification of Hypoglycemia Visits

Version: 1 Date: 19 February 2008

Reviewer: William Rush

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I remember a few years ago at a professional meeting going to a presentation by an investigator from Scotland. He had studied why they were getting so few cases of hypoglycemia in the emergency room. What he found was that many cases of hypoglycemia were happening in pubs and that after the emergency responders were stabilizing the patients they refused to go on to the ER and returned to the pub. The point is that very few cases of hypoglycemia end up in the ER. While it would be useful for a number of reasons to be able to identify diabetes patients in the general population who are experiencing episodes of hypoglycemia; given the capability of existing coding systems to detect and differentiate hypoglycemia, this is unlikely beyond specific situations like the ER.

The current study does a good job at maximizing the positive predictive value (PPV). While this may prove useful in future studies such as the impact of ER crowding on the treatment of hypoglycemia or hospital admissions for patients with hypoglycemia through the ER, it is very limited in scope. The weakest part of the paper is their approach to false negatives. They make the assumption that the candidate ICD-9-CM codes capture all ED presentations with hypoglycemia therefore they estimate a very good NPV. However research is not based on validation through assumption but rather testing our assumptions through rigorous scientific methods. One has to wonder why they didn’t audit a couple of hundred randomly identified charts of diabetes patients passing through the ER to determine the false negative rate. I believe the authors need to more fully address this major deficit before publication. If they want to more clearly change the focus to accurately identifying hypoglycemia cases in the ER and admit that an unknown number of case may be missed I would support publication.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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.