Reviewer's report

Title: Validation of the Treatment Identification Strategy of the HEDIS Addiction Quality Measures: Concordance with Medical Record Review

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Reviewer: Jonathan S Einbinder

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Major Compulsory Revisions
None

Minor Essential Revisions
In Abstract, Methodology, please write out “substance use disorder” before using acronym “SUD” for the first time.

Discretionary Revisions

Authors describe a data validation study for HEDIS Substance Use Disorder (SUD) diagnosis/CPT code combinations. They compare use of these codes in four populations at the VA with a reference standard of manual record review. It is not surprising to this reviewer that when any administrative data measure is scrutinized that variability is observed in concordance with clinical documentation by setting and location. The manuscript is well written; the methods are sound and well described; and the subject represents a worthwhile and useful contribution to readers interested in quality measurement, especially with administrative data. In addition, the domain, substance abuse, is important and clinically relevant to many investigators and quality personnel.

There are inherently limitations with this kind of study, and for the most part, the authors do a good job of acknowledging and discussing them. I have a few thoughts and suggestions (discretionary) that the authors may consider incorporating into the final manuscript:

5. I would like to understand a bit better how ICD-9 and CPT billing codes may be used differently at the VA (no commercial claims) than at non-government practice sites, i.e. is administrative data from the VA generalizable to other sites? The answer may well be yes, but it would be helpful to comment on this.

6. A major finding in the study is that the accuracy (positive predictive value) of the HEDIS code combinations performed much better at SUD-specific care settings than in general care settings. I would like to see some more comment about what the reasons for this discordance are. The authors do mention that diagnosis code combinations may be false positives (e.g. therapy may have been provided for depression rather than substance abuse). More comment on this is needed. It seems to me that there is an inherent bias in comparing SUD and
non-SUD care settings, this may be a true treatment bias, i.e. patients are more likely to get SUD treatment in SUD settings, but there are other explanations, most notably a documentation bias, i.e. providers in SUD settings are more likely to document SUD treatment in the specific ways that the authors were looking for. Table 2 describes the list of reference treatment categories – many of these would not be documented in a non-SUD setting with perhaps the exception of encouragement to abstain, to attend 12-step meetings, or possibly limited detox. I think the larger issue here is that non-SUD professionals do not do a good job of documenting substance abuse issues (much like a non-oncologist will not document cancer treatment and details like an oncologist would).

7. The authors report the observed concordance rates (PPV). I would like to see some comment about what they think is “good enough” to use for various purposes. As they note, there is a trade-off between cost/convenience and accuracy. Does this mean that this measure is completely useless (in non-SUD settings)?

8. Authors could also choose to comment on how things might be improved. Specifically, with movement toward clinically-derived (EHR-based) measures (e.g. Meaningful Use), is there an opportunity for a more valid, “better” SUD measurement? And, how could the existing SUD HEDIS-type measures be improved?

**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 have no competing interests.