Reviewer's report

Title: Clinical Decision Support Improves Physician Guideline Adherence for Laboratory Monitoring of Chronic Kidney Disease: A Matched Cohort Study

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Reviewer: Khaled Abdel-Kader

Reviewer's report:

Major:
1. I thank the authors for their efforts in addressing the concerns raised. However, there seems to be a general assumption that some unmeasured confounders are likely to be disadvantaging the CDSS. Unfortunately, they could be disadvantaging the CDSS or the control group, making interpretation of the findings challenging.

E.g., when discussing the unknown racial status of patients, the authors now add "Because the CDSS did not 'know' the correct eGFR to use and physicians did know, the performance of CDSS in relation to guidelines would be reduced compared to control physicians whenever eGFR was critical in the decision making." This assumes there was no imbalance in the distribution of AA patients or the imbalance is such that there were more AA in the CDSS arm. But we don't know. If the control group had substantially more AA patients, then the bias is against the control group.

Similarly, the 3 mo add on period has an unclear effect. While the authors may not have chosen it in an arbitrary fashion, it's accuracy regarding how long a pt was likely to still be a 'labcorp' patient is unknown. Given the short median follow up (which the authors may wish to provide by treatment arm in table 2) and the predominance of CKD 3a, the 3mo add on may have led to a disproportionate increase in time periods long enough to qualify for one of the study's monitoring metrics. Because the CDSS arm appears to have had more frequent testing (and hence more patients qualified to be included in the metric without the 3mo period), the addition of 3mo without testing, may have exaggerated the effect of the CDSS (fewer CDSS patients impacted vs. more controls without lab testing but with too short of f/u are now included with the additional 3mo). Or as the authors point out, it may have diluted the CDSS effect (both groups with equal numbers of patients impacted by the 3mo add on). The distribution of follow-up times and duration since last test will determine the effect.

I understand the added burden of repeating analyses is significant; however, the authors have the information needed to examine whether removing the period has any impact... it may not, but the direction of the bias is unclear and the findings would be strengthened by addressing this issue.

Level of interest: An article of importance in its field
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