Reviewer’s report

Title: No-Shows to Primary Care Appointments: Subsequent Acute Care Utilization among Diabetic Patients

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Reviewer: Melissa M Parker

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Summary:
The authors examine the association between no-shows to primary care appointments and subsequent hospital admissions or emergency department visits in a large cohort of diabetes patients. They found that patients who failed to attend their last scheduled primary care appointment were at 26% higher risk for ED visits and 36% higher risk of hospitalization. This is a well-designed prospective cohort study and adds to a growing body of literature that explains why it is important to give attention to no-shows in chronic care management. The article is well written, with a clear hypothesis and sound methods. While I have a few questions and suggestions for the discussion, I feel this article is an important contribution to the scientific literature.

Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

1. In Methods-Dependent variables, it would be helpful to clarify for readers that the dependent variables were counts rather than binary indicators.

2. In first paragraph of Discussion you may also want to cite a recent publication (Parker MM, Moffet HH, Schillinger D, Adler N, Fernandez A, Ciechanowski P and Karter AJ. Ethnic Differences in Appointment-Keeping and Implications for the Patient-Centered Medical Home—Findings from the Diabetes Study of Northern California (DISTANCE). Health Services Research, 2012; 47:572–593.) which showed that diabetes patients who frequently no-show are at 20%-40% greater risk of having elevated HbA1c, LDL and systolic blood pressure.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. In the PDF I read, the Methods section was misplaced at the end of the article after the Conclusions. Please correct and place after Background. (minor issue not for publication).

2. Under: Methods-Patient Participants, delete “were included in the analyses” from the last sentence. It is redundant. (minor issue not for publication)

Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)
1. In Methods, please explain why you chose no-show at one particular visit as the exposure, rather than a rate over a longer period of time (i.e. Percent of scheduled appointments over a 1-year period that were no-shows)? Is there evidence to support that patient behavior at one visit is a good proxy for their typical appointment keeping behavior in general? If not, please state this as a limitation.

2. In Methods, please explain why you chose to include ED visits and hospital admissions in the two weeks prior to the last scheduled primary care appointment as covariates. Why two weeks instead of a longer time frame?

3. In Methods-Dependent variables, it would be helpful to list by name the potentially preventable DM related diagnoses for readers who are not familiar with the ICD-9 codes. What is the rationale for including only these diagnoses? Aren’t there other diagnoses (DM related complications) that are potentially preventable like: heart attack, stroke, amputations? This could use some further explanation.

4. Table 1 usually shows the bivariate associations between the exposure of interest (i.e. No show) and the potential covariates, rather than the potential covariates and the outcome as you have done. I could understand you presenting the data as you did if this were a predictive model, but since it is not, I think it is more important to present the associations with the exposure variable. This helps readers to understand who the no-shows are and to determine if the covariates are possible confounders or not.

5. In Results, paragraphs 3 and 4 you state that models “adjust for other variables associated with ED visits” (paragraph 3) or “hospital admissions” (paragraph 4). Unless these covariates are also associated with no-show status, they are not true confounders and do not need to be included in the multivariable models. This ties in with my previous comment. It would be helpful to establish in Table 1 what the associations are between the covariates and the no-show exposure.

6. In Discussion, 2nd paragraph you state that potentially important information or medical treatment could have been conveyed during the missed appointment that might have prevented the subsequent ED visit or hospitalization. I found that a bit simplistic. Rather, IF no-shows are causally related to ED visits/hospitalization, there would most likely be a cumulative effect over time where patients who routinely miss appointments are losing opportunities to get needed treatment or information that would help them avoid the ED visit or hospitalization. As you astutely point out in the last paragraph of the discussion, your study design does not allow you to make causal inference so I would steer away from this. Another possible explanation for the association that is worthy of mentioning is that patients who no-show have a different vision or preferences about chronic care management and are possibly more “reactive” instead of “proactive” in their care. We found some evidence for this in the HSR publication referenced above. In that study, we showed that diabetes patients with high no-show rates were four times as likely to receive the majority of their care at same day appointments despite no differences in primary care utilization overall.
This provides some evidence that patients who no-show may have a preference for using acute care services as problems arise at the expense of preventive, primary care visits. It also supports your statements in the 3rd paragraph of the Discussion that say the open access scheduling may not provide adequate support and continuity of care for patients with chronic conditions. Finally, it is worthy to mention that no-shows could also just be a marker for patients who are non-adherent in other aspects of their diabetes care, or are medically vulnerable populations (ie. Poorer, less formal education, limited English proficiency, live in deprived neighborhoods) and therefore have greater risk of undesirable outcomes (ie. ER visits, hospitalizations, or elevated lab values and BP in other studies). It looks like you don’t have those data to tease out the confounding effects. That should be mentioned as a limitation.

**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.