Reviewer's report

Title: Effect of Point of Care Information on Inpatient Management of Bronchiolitis

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Reviewer: Vitali Sintchenko

Reviewer's report:

This manuscript contributes to the emerging body of knowledge on point-of-care prescribing decision support and focuses on the assessment of the computerised physician order entry system on inpatient management of bronchiolitis. The authors describe the local computerised physician order entry (CPOE) system deployed at the Children’s Hospital of Eastern Ontario and explore its effects on the prescribing of antibiotics and bronchodilators. The choice of this high-frequency but often suboptimal decision task seems to be the most important factor that determines the positive findings of the intervention. The data obtained is sound. Although the quasi-experimental time-series design employed in the study is powerful in detecting differences in periods prior to and after the intervention, its internal validity may be affected by historical events such as concurrent antibiotic prescribing studies or educational sessions, the maturation of residents’ skills, or the uptake of CPOE (ie compliance with CPOE) recommendations.

This paper will be of interest to clinicians and health informaticians because it provides a good example of how a properly designed and implemented system of prescribing decision support may contribute to the improvement of clinical practice.

Recommendations and questions to authors

In my opinion, the paper requires a minor revision. This paper is well written and descriptive, however, the clarification of some issues is desirable.

1. The most important confounding variable in the before-after approach is the innate characteristics of study participants. The number of clinicians (residents and medical students) that were both given the opportunity to use the CPOE system and did so should be clarified. Did they receive any specific training? How often did they use the system? How much difference was there between the characteristics of clinicians in both arms of the study?

2. This study design does not control for temporal trends in management, therefore its limitations should be fully described, ie it should be acknowledged that the trial demonstrated associations between the use of intervention, the observed outcomes and the process measures, but could not prove a direct cause-and-effect relationship. The issue of the internal validity of findings should be discussed.

3. I would like to see a comment on the generalisability of these findings. It would also be appropriate to refer to the body of knowledge on the impact of prescribing decision support that has been accumulating in medical informatics literature (eg Miller RA et al. The anatomy of decision-support during inpatient care provider order entry (CPOE): Empirical observations from a decade of CPOE experience at Vanderbilt. J Biomed Informatics 2005;38:469-485; Kaushal R, et al. Effects of computerised physician order entry and clinical decision support systems on medication safety. A systematic review. Arch Intern Med 2003;163:1409-1416). From this point of view, two important but different roles for decision support within CPOE (that define the nature of intervention) should be clarified:
   (a) providing patient-specific clinical decision support (eg, ‘behind the scenes’ reconciliation of patient-specific information (lab results, allergies, etc) with stored ‘best practice’ rules and issuing alerts or suggestions, and
   (b) providing just-in-time, focused education relevant to patient care.

4. Table 3 can be safely omitted from the manuscript.

5. Occasional typos (eg, Ribaviran (page 6 , line 12) should be corrected.

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
I declare that I have no competing interests