Reviewer’s report

Title: Advancing Laboratory Medicine in Hospitals through Health Information Exchange: A Survey of Specialist Physicians in Canada

Version: 0 Date: 26 Aug 2019

Reviewer: Hojjat Salmasian

Reviewer's report:

Thanks for the opportunity to review this work. Authors have used data from a larger study (a survey study conducted in the province of Quebec in Canada) to conduct descriptive analyses regarding the use of various health information exchange (HIE) systems by specialist providers. The primary conclusion is that there exist notable variability on which systems are used, and to what extent, based on certain provider characteristics such as place of practice (rural versus urban hospital).

One factor that was not addressed in this analysis was the potential for different needs by different types of providers. For instance, if providers in rural settings mostly provide primary to secondary care, and those in urban settings mostly provide tertiary care, the types of tests they order (and therefore look up in the HIE systems) may differ, and this could also impact their choice of systems they use, extent to which they use these systems, and their perception of these systems. Authors indirectly mention this limitation, but I believe mentioning it directly would be more appropriate.

Regarding the study sample: Authors mention that 44% of the respondents worked in small or medium-sized hospitals and 56% in large hospitals. Did the surveyed group not include any physicians who do not work in hospitals (such as those who exclusively work in ambulatory settings)?

Another related question: is each responded only affiliated with one hospital? Could there be specialists who work in two places (e.g. a rural and an urban hospital) and use a different system in each work setting? Could this have contributed to the number of respondents who mentioned they are using more than one system?
Finally, while this study indicates that "context" of care impacts the providers' use of HIE, it does not provide the readers with a strong set of tools to classify different contexts. Also, it seems like provider characteristics are not different across the three HIE use profiles identified through cluster analysis. I wonder if additional variables (such as provider specialty, academic status of the hospital, etc.) could be compare across these HIE profiles to generate more insight.

Other recommendations:

* In table 1, I would change the label of the last column to "Chi-squared statistic"

* In table 2, I found the use of the bidirectional arrow confusing. I believe authors can use "&amp;" in its stead.

* Regarding table 4, where the same questions asked for both LRV and iEHR? For instance, where the users of both technologies asked if the system allows them to make better clinical decisions? In its current format, table 4 does not allow comparing the two systems in terms of any of the reported variables. A comparison of systems would be nice if possible.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

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