Reviewer’s report

Title: A proposal of indicators to measure coordination of clinical information and management across care levels

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Reviewer: Jeannie Haggerty

Reviewer’s report:

Overall Comment
This is a report of an important area of study, performance measurement of care coordination across different levels of care, and the authors report on a very comprehensive approach that spans the initial identification, expert review, and testing. The article makes an important contribution to knowledge that will be of interest to health services researchers and planners.

The methods appear to be appropriate and are relatively well-described, and the data appears to be sound.

The authors only acknowledge one limitation, potential publication bias. This needs to be expanded.

I and do not acknowledge that this is still only one dimension of coordination. (see general comment below)

The writing style is adequate, but there are places where more detail would be appreciated. It is very challenging to present in a succinct manner such a detailed study, but the authors are requiring the reader to do much of the inference and analysis of what they present rather than laying it out clearly. It would also benefit from using the same term consistently rather than synonyms (care coherence vs. care consistency). The manuscript would also benefit from providing operational definitions of key terms such as ‘feasibility’, ‘clinical consistency’, attribute vs. dimension,

A title that might reflect better: Proposed indicators of coordin… and management across levels and a test of feasibility. The demonstration of feasibility and variability is a huge strength of the study and it would be good to announce it in the title.

A general comment to preface my review: Measure of care coordination is indeed a very important area for which adequate measures are needed. Starting from their definition of clinical care coordination as the “harmonious connection of the different services needed to provide care to a patient throughout the care continuum…”, It may be helpful to imagine a logic model of inputs#activities/processes#outputs#immediate outcomes#health outcomes.

It would be important for the authors to acknowledge that they are focusing indicators of the outputs or traces of care coordination rather than on the actions
or process of coordination itself. I believe this is consistent with the ‘intermediate objectives’ referred to in line 135. An equally valid (though it itself incomplete) measure of coordination is to focus on activities or processes of the providers who are coordinating care along the continuum, but examining the activities of coordination that lead to the intended outputs: acknowledging a common objective, recognizing the actions/competency of others and one’s complementary role, intentional communication. These actions would include the ‘use of information’ that is transferred, which is probably why this indicator did not appear in the set of output indicators that were identified. Coordination would also be measured from intermediate outcomes as experience by the patient: lack of conflicting messages, a sense of security, no information gaps, care as well organized and responsive.

My point is simply that it would be important for the authors to acknowledge that the outputs are only one dimension of coordination, and that the best measurement would be to include various dimensions and perspectives of coordination. This will also allow them to focus on the literature that specifically addresses outputs. This is acknowledged briefly in the conclusion, but it would be beneficial to telegraph this earlier, and then the conclusion will make more sense.

Abstract

Introduction
The introduction (succinct summary of the pertinent knowledge that leads logically to the study objectives)

The introduction could be improved by focusing on nature of coordination covered in the study (as per general comment above). For instance, I would not call these process indicators (line 153). There are many places where there are vague assertions that would benefit from more detail. E.g.

Line 133, give a succinct summary of the conceptual framework rather than expecting the reader to looking up. In line 160-163, the authors criticize lack of conceptual frameworks so it is important to better define their own.

Line 156, give specific examples of ‘single attribute or dimension, rather than expecting the reader to look up.

The study objectives do not really capture the nature of the work that was done. It would be helpful to reformulate them to telegraph the method and expected outcome

Discretionary:

Method
The method (provides sufficient detail to give the reader a sense of what was done, as well as a general sense of the rigour of the study).

It seems to me that there are three phases, not just two. Lit review, expert review, feasibility test.

It would be improved by:
Line 184: name the two types of clinical coordination and four dimensions. Are these the ones uses in the study? If yes, introduce here.

Line 217+ It needs to be much clearer from the beginning that indicators were disease-specific, otherwise the referral to local guidelines doesn’t made sense. The reader is expected to infer this. Later on reference is made to ‘tracer conditions’. This needs to be identified as part of the method (and justified succinctly), naming the specific tracer conditions.

Line 232 – give an example of what is considered ‘when necessary’

Line 239 – was this really a cross-sectional study? It seems from the method that this was a retrospective review, but the reference period is not given.

Line 241-252. Would it be possible to provide descriptive labels for the test ‘areas’ other than 1, 2, 3, and subgroups? Would it be right to characterize these as three sub-systems that represent different types of care integration arrangements? When reading the results it becomes arduous to try to remember the characteristics of the different systems.

Lind 257. Again, this would have benefited from a previous naming of the tracer conditions.

Line 263; please define clinical and administrative electronic databases and how they differ from EMRs

Line 267. Justify the margin of error of 0.2.

Line 280. I presume this is percentage not rates?

The description of the data collected and how it was collected is clear.

The analysis is mostly descriptive and straightforward.

Results:

Line 297: suggest adding ‘lit review’ to the subtitle.

Although not a systematic review, it would be helpful to include the prisma selection tree. (discretionary); this may generate efficiencies in reporting of methods and results for this section.

Line 330 – not clear why ‘accessibility’ is not a separate category? Why is it part of FU?

Line 340, briefly mention on what basis a judgement of ‘quality’ was formed; Likewise, what constitutes ‘duly completed’ (line 344)

Table 1 is very complete and helpful, and worth the price of admission. However, it is very full of content not that easy to read. Some suggestions:

- Make sure that table headings are repeated on each page
- Organize line table 2 – (possibly two tables) but get rid of the left-hand column
- Number the indicators to fit with the classifications in the figure.
Avoid redundancies between cells:
- Switch the denominator and numerator columns, so that the numerator is understood to be a subset of the denominator (avoid having to repeat information)
- Name only the source of data in the that column

Some information in the cells is confusing or requires some clarification: E.g first secondary care visits of HF patients. Visit should be singular. What is meant by ‘correctly referred’, sometimes I think the denominator should refer to ‘newly diagnosed patients’ (e.g. with HF). It needs to be carefully gone over by a colleague who is not too close to the study to make sure it is absolutely clear. As a reviewer, I do not have time to do this.

Table 2 & 3 are also very interesting. Sometimes difficult to read. Again numbering of indicators would be helpful – make sure the same scheme is used as Table 1.

Table 2. Why is the unit of time not provided. If the unit was a category of time, then this should be stated.

Discussion:
Start the discussion with a brief summary of the most salient results.

As a reader who is very familiar with the literature in this area, it seemed that the contextualization of the study in light of other studies would be improved by clarifying its focus on output indicators, being more upfront about the limitation of focusing on mostly disease specific indicators rather than coordination as a whole. The discussion can elaborate on the extent to which these constitute ‘tracer’ conditions, and then the extent to which inference about coordination can be extended to other conditions.

The section on limitations needs to be expanded, to address the disease-specific indicators, the application to predominantly hospitalized patients and not really ‘levels of care’ generally, the focus on outputs and not provider processes or patient experience.

But the many strengths of the study should equally be acknowledge: the comprehensive process of identification, but most of all the feasibility testing which demonstrates variability even in a small sample.

Finally it would be helpful to have some indicators about the application of the indicators. Are they only applicable to bounded health systems? Can they be assessed from a single hospital? What are the conditions for being able to apply the indicators.

Level of interest: An article of outstanding merit and interest 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 am a researcher who has developed a generic measure of continuity of care from the patient perspective, but I consider this research to be complementary not in any conflict.

I declare that I have no competing interests