Author’s response to reviews

Title: Hospital discharge of the elderly - an observational case study of functions, variability and performance shaping factors

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Version: 2
Date: 30 April 2014

Author’s response to reviews: see over
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Version: 2

Date: April 2014
Cover letter

Paper number: 1877829151121761 – Hospital discharge of the elderly - an observational case study of functions, variability and performance shaping factors

Authors: Kristin A Laugaland, Karina Aase and Justin Waring

In this cover letter we describe how we have addressed the reviewer comments. First we describe how we have responded to Reviewer 1’s (Helen HA Alm) comments before we continue with Reviewer 2’s (Myles Leslie) comments. We refer to the reviewer comments in the order they appeared in the reviews. We thank the reviewers for their constructive and insightful comments and suggestions which have improved the manuscript considerably.

Overall we have rewritten the background section including the subsection describing the FRAM in order to highlight how this methodology will advance the understanding of hospital discharge. We have also added more clarity to study aim which corresponds to our discussion and conclusions. In order to avoid confusion related to the understanding of the concept of resilience in the manuscript, reference to resilience engineering has been removed from the manuscript. We have also added a new paragraph in the background and discussion section acknowledging the issue concerning the conception of successful hospital discharge functioning. The manuscript has undergone English language editing by the professional editor: Edanz http://www.edanzediting.com/ recommended by BioMed Central.

Listed below are the original reviewer comments, followed by authors responses in yellow.

Authors’ responses

Reviewer 1: Helen HA Alm

Editorial comments:

1. Spelling “next of kin” is done in two different ways, with a hyphen or (mostly) without - and one time “next of kind” (p.9).

   Next of kin is used throughout the manuscript.

2. ”Ways to manage or dampen possible occurrence of uncontrolled performance” (p.7). Is that the intended meaning or do the authors mean uncontrolled variability or uncontrolled performance variability?

   The sentence has been corrected to uncontrolled performance variability.

3. The paragraph “Setting” (p.8) lacks dot and end brackets.

   Dot and end bracket has been added

4. Double dots in the 2nd paragraph in “Data analysis” and there are some
double spaces in the manuscript (simply corrected by search and replace).

Double dots have been removed and the entire manuscript has been controlled for double spaces.

5. The names of the functions are not uniform. At first I interpreted the text after the dash at the first two functions as description or output from the function. A short description of each function in table 3 would be welcome.

The names of the functions are now uniform and a brief description of each function with essential aspects was and is provided in table 2.

6. A ”d” is missing in the fifth function in the list of functions in Results (p. 13).

“Notify and inform the…”

The sentence has been corrected to: Notifying and informing the patients’ next of kin (if any).

7. “The interesting question how these functions may vary on a day to day basis in everyday discharge practices”. The sentence is missing an “is” (last sentence before “Performance variability…”).

The sentence has been corrected to: “We need to examine how these functions vary in everyday discharge practices”.

8. P.17 “available to plan…” should be “availability…”

The sentence has been revised and corrected to: “This was because of the reduced possibility to prepare the discharge requirements for care transfer if the transfer was taken place the same day”.

9. In the citations (p17), I am not sure whether it is correct as stated or if it is a slight error in translation - shouldn’t it be “increased risk” instead of “increased chance”?

The sentence has been corrected to: “It’s busy…of course there is an increased chance or risk that you forget something.

10. P.18 “… on the day he was determined medically fit or if he/she…” Maybe there should be he/she the first time as well.

The use of “he/she” has been replaced with the term: “the patient”.

11. Review the sentence “New discharge planning demands…” (3rd sentence below the heading “Degree of patient participation and engagement of next of kin”).

The sentence was reviewed but retained.

12. A space is missing in the same paragraph as above in the sentence “Time allotted to each patient…” and one space missing in the 3rd paragraph under the heading “Quality of the information transfer”.


The whole manuscript has been controlled for spaces (double, missing).

Discretionary revisions

The authors three aims are “(1) To identify the common functions of the day of discharge that constitute hospital discharge of elderly to primary health care services, (2) to identify variability in these discharge functions and (3) to describe performance shaping factors contributing to variability” (p.2) it is also stated that the paper applies the first three steps of the FRAM (p.7) in line with the study aims. I have two comments on this regarding the use of FRAM as method and the aims of the study:

13. The three aims appear to be more of methodology than aim. The aims are telling the reader how it has been done - rather than why. This paper holds discussion and conclusions with great findings but the concluding sections do not relate to the initially presented aims to a sufficient extent. Distinguish between objectives and approach. Maybe the aims need to be reviewed and perhaps be replaced by a more comprehensive aim? On p.6 it is mentioned that “the purpose of the study is to apply and develop the FRAM to hospital discharge for elderly patients”.

The background section has been rewritten to add more clarity to the aim and to make it correspond better with discussion and conclusions. The following study aim has been added:

The main aim of this paper is to identify hospital discharge functions, variability, and performance-shaping factors (PSFs); these may explain the variability and different outcomes across discharge practices by incorporating the multiple-stakeholder perceptions of health-care providers, patients, and their next of kin.

14. The descriptions of the functions according to the six aspects are missing (the definitions of the aspects are shown in figure 1). The step describing the functions is a vital part of the method guiding the user to explore new functions, finding (sometimes unexpected) couplings between the functions and providing the user with a stop rule on when there is an adequate amount of functions. Have the authors skipped this step? If not – I, as a reader, would like to see examples of described functions. If the step is skipped a comment on why the authors have chosen not to implement an important part of the analysis would be welcome. The authors mentions “successor functions” (p. 27) and “functional dependencies” (p.29) but these connections between functions are not clear to the reader when there are no aspect descriptions. The authors have made an interpretation of the method that they may give the reader some reasoning behind, but (not to forget) - they have got interesting results out of it.

A description of each function was and is presented in table 2 alongside essential aspect descriptions. According to the FRAM (Hollnagel 2012 p.60) it is not necessary to provide a description of all aspects of a function, but rather focus on the most essential. Table 2 displays the couplings between the functions justifying the use of “successor functions and functional dependencies”. As the focus/scope of our analysis was on the (functionality of the) day of hospital discharge a sensible starting point was the function called “Review of hospital
inpatients – classifying patients that are medically fit for discharge” as this is the function that activates subsequent functions/which the other functions depend on. A good stopping point for the analysis was the function called “Transferring the patient to the post-discharge site of care and ensuring the transfer of written information” as this is when the patient physically leaves the hospital and the municipality takes over responsibility for the patient.

Authors’ responses

Reviewer 2: Leslie Myles

The authors have collected some interesting data, but a range of style, formatting, and theoretical content issues require significant revision. The manuscript contains multiple errors in spelling, grammar, and punctuation. Subject and verb agreement is sometimes a problem; verbs may be missing or doubled; very long sentences containing multiple clauses and missing or superfluous punctuation occur frequently; parentheses are not always closed; “i.e.” is used frequently – both in and out of parentheses – when what follows is not a restatement of what preceded, but rather a (potentially controversial) expansion or definition of what preceded. Beyond these mostly-technical issues, the authors consistently choose passive, subject-less constructions which make the material difficult to read, and ultimately sell short their active, subject-filled data. It is clear that a great deal of effort has been put into collecting these data and this effort deserves to reach a broader audience.

The manuscript has undergone English language editing by the professional editor: Edanz http://www.edanzediting.com/ recommended by BioMed Central. The editing service was specifically asked to edit the manuscript based on the above comments.

The manuscript’s theoretical frame – Hollnagel’s (2012) FRAM model – is presently obscuring rather than elucidating the authors’ hard won observational data. At heart, the reader needs to know a little about FRAM, and a great deal about how FRAM advances our understandings of a particular challenge in the health services: patient discharge. A central concern here is that, setting aside the various categories that FRAM provides, what is the authors’ underlying conception of discharge quality? What defines a high quality discharge? Is it next-of-kin satisfaction? Or perhaps clinician satisfaction? Interprofessional inclusiveness? Or, as suggested on pages 21 and 23, a high degree of match between policy and action? The last of these possibilities presents potential for making the FRAM model do some solid analytic work. Drawing on Timmermans and Berg’s (2003) observation that all standardization is local standardization, would a FRAM analysis not help identify the ‘hard stop’ points where local variation (as produced by time pressures etc.) simply cannot be allowed to continue if quality (however defined) is to be maintained?

The authors have rewritten the background section in order to highlight how the FRAM will advance the understanding of hospital discharge; by analyzing and providing knowledge of variability and performance shaping factors contributing to variability in discharge practices and outcomes. The following arguments are made in this respect: Performance variability and
factors that influence hospital discharge practices and outcomes are so far poorly understood and not fully investigated in the existing literature. This paper addresses these issues, contributes and thus extends current knowledge. We argue that understanding of variability and performance shaping factors is essential to enhance the efforts to improve hospital discharge practices.

In order to avoid confusion related to the understanding of the concept of resilience in the manuscript, reference to resilience engineering has been removed from the manuscript. The description of FRAM has been added as a subsection in the background section providing the reader with knowledge about the methodology and how it was used analytically to determine the details of elderly patient discharges in a Norwegian setting.

The reviewer raises an important question concerning the authors’ predefined or underlying conception of successful hospital discharge functioning. We have included a new paragraph in the FRAM description (p.7) acknowledging this issue. Given the broad range of stakeholders involved in discharge we argue that the concept of successful discharge functioning should be defined in terms of the perceptions of the stakeholders involved (healthcare providers, patients and next of kin). Thus, we do not apply a predefined or underlying conception of successful hospital discharge. We have also included a section in the discussion (p.28-29) concerning the implication of such multiple stakeholder perspective. In our conclusion we emphasize the need for incorporating a multiple stakeholder perspective in order to share a common perception of what constitutes acceptable, successful discharge functioning. Such common perception is necessary to help identify and agree on the ‘hard stop’ points where local variation (as produced by time pressures etc.) cannot be allowed (e.g uncontrolled performance variability).

Rather than draw out specific criticisms of the existing material, I will present a possible reworking in this vein. This is a reworking that I hope is friendly to the authors’ intentions, and aims to help them tell the important story of patients being discharged. This paper uses qualitative observational data to demonstrate that “hospital discharge [is] a complex multi-agency care process composed of [multiple] activities [aimed at accomplishing multiple goals,]” (p30). With decision making and knowledge sharing across these activities and goals critical to the success (safety? quality?) of a discharge, we argue that existing, sequential approaches to this complexity are inadequate. “Without considering these interdependencies, progress on safe hospital discharge will be constrained.” (p29). After introducing our case study, we briefly describe an innovative tool for assessing complexity in healthcare delivery – the FRAM model – and then use this analytic to parse out the specifics of elderly patient discharges in a Norwegian setting. From the specifics of our observations we draw out generalizations for those interested in setting and using policy to ensure the (Quality? Safety? Success?) of discharge in other settings. Our goals are to test the FRAM model’s fit with health care’s complexity, and improve understandings of how policies and guidelines are shaped by variations in operational conditions and performance.

This sort of reworking may well allow the authors to move more quickly to their data and its implications, avoiding unnecessary stops to understand engineered resilience in the process. At base, they have interesting data, and an interesting tool with which to examine it, but they will need to tell a more compelling story if readers are to be interested.
The authors appreciate the suggestions made by the reviewer and have taken them into careful consideration. Several of the suggestions are included in the manuscript except from the last suggestion: “From the specifics of our observations we draw out generalizations for those interested in setting and using policy to ensure the (Quality? Safety? Success?) of discharge in other settings. Our goals are to test the FRAM model’s fit with health care’s complexity, and improve understandings of how policies and guidelines are shaped by variations in operational conditions and performance”.

Our study findings strongly suggest that the FRAM represents a powerful methodology, enabling new insight into complex inter-organizational processes. Thus the FRAM’s potential fit with health care’s complexity is rather an implication of the study than an initial predefined objective of our study. Our main goal was to apply the FRAM initially developed to analyze performance variability in complex systems to identify and demonstrate the performance variability and the PSFs surrounding hospital discharge practices. To underline discharge policies and guidelines in particular was not a goal in this article since they represent factors (indicated by our study results) that are among several that influences discharge performances and outcomes. The influence of policies and reforms (the Norwegian Coordination reform) on hospital discharge practices will also be subject for another article succeeding the current one.