Reviewer’s report

Title: Depicting adverse events in cardiac theatre, The RECORD model

Version: 2 Date: 1 January 2013

Reviewer: paul Barach

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Major Compulsory Revisions

The authors should be congratulated on writing on this important and target rich environment for improvement.

I am concerned however that this manuscript overshoots in its statements, while it co-mingles many different papers and methods without staking out in a robust way its key messages. The authors have ignored or glossed over key papers and vast improvement knowledge in the field of cardiac surgery, quality improvement, team training and assessment and learning. It is finally unclear if what they suggest is clearly anything new.

See detailed comments by sections below.

I. ABSTRACT

The authors define errors in Abstract as “random unintended events” which is not referenced nor a commonly accepted definition. Please check with sources such as Rasmussen, Dewey, Reason, Dekker or Woods, none would accept this definition as plausible.

II. INTRODUCTION

The authors define HF as predisposition to error but this is skewed and far from complete. There are many definitions but the main ones point to fact that Human factors is concerned with the ‘fit’ between the user, equipment and their environments. It takes account of the user’s capabilities and limitations in seeking to ensure that tasks, functions, information and the environment suit each user. In essence it is the study of designing equipment and devices that fit the human body and its cognitive abilities.

III. Behavioral Outcomes.

In para 2 on page 3, authors discuss MISTAKES but don’t define nor relate it to errors, two terms that are very different in meaning from a HF perspective.

1). The authors state discuss cardiac surgery in a multidisciplinary manner several teams who have studied cardiac surgery in this manner. Here is a sample of papers on improving adult and pediatric cardiac surgery performance which authors could cite as these teams have done most if not all of what they
are proposing including:


2). The author continue to make unsubstantiated statements for example in para 3, page 3, “Surgical error occurs when lack of skill or ability is combined with behavioral deficiency”-what does this mean? What is data for this?

3) The surgeon’s leadership and team-ness are hugely important (See Winlaw, D., et al. Leadership, surgeon well-being and non-technical competencies of pediatric cardiac surgery. Progress in Pediatric Cardiology. 32(2), 129-133.

However, further on page 4, para 2, they misrepresent ElBardiassi’s paper by saying that surgeon’s personality in up 60% of cases negatively affects the way the surgical team functions? How can they support this? It is clear that surgeon’s personality is hugely important but putting a random number on it does not help to understand how to address it.

4) The authors fail to discuss the single most effective safety and improvement effort, perhaps in medicine, the Northern New England Cardiovascular Disease Study Group. This learning collaborative, completely devoted to improving performance of cardiac surgery, over a 28 year period, has shown remarkable improvement in outcomes. They have published over 75 papers published, and have done much of what these authors are talking about, albeit focusing on quantitative outcome data and have been able to produce the best outcomes
nationally across the entire 12 hospital network. See full publication list at http://www.nnecds.org/pub_lit_2.htm

5) The authors focus on reducing errors and yet all recent scholarship is moving towards a focus on process failures and I would encourage this focus. See Cook R; Dekker S; Hollnagael E; Almaberti Rene al.

6) The authors talk about teams but they neglect to discuss the last decade of work on team training and assessment in healthcare including TeamSTEPPS, and work by Salas et al; Baker David et al and others, and the detailed work of Rhona Flin on assessing non technical skills(NOTECHS).

7) The authors discuss minor and major events but don't define them and so overlook a decade of work around this including from Bacha E, et al. Barach P et al; Schraagen et al; Cathepole K et al; and others.

8) The authors don't discuss technical expertise and the challenges of grading it, giving feedback and making it part of ones practice, for example:


9) The authors reference Marc DeLeval’s landmark study but fail to actually cite the data which would support their key attribution around the relationship between near misses and overall adverse events.

10) Authors make an unsourced statement that does not support their argument “it has always been considered that surgical skills are innate aspects of ones personality; they can neither be taught nor acquired” .

11) The RECORD model is interesting but could be construed from the work cited above and would support the author’s overall case if they rewrite to demonstrate how the work over last 15 years leads naturally to their model. Then if they could show how they piloted this model, that would greatly help to support their suggestion for others to emulate.

IV. LIMITATIONS

12) This section is unclear and does not actually address the limitations of thier main contribution about the RECORD model but meanders around several issues.

13) What is an “HF Team”?

14) They allude to under reporting but could be supported by referencing Bates et al; Leape L, et al and others to make their case.

15) There are many technical challenges when videotaping clinical teams such as logistics, ethics, inter-rater reliability, etc. See Schraagen et al; Colin F Mackenzie,
V. CONCLUSIONS

16) Unfortunately, the authors fail to make their case on why RECORD would help improve the safety, quality or clinical governance of cardiac surgery.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

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'