Reviewer’s report

Title: Using Total Quality Management Approach to Improve Patient Safety by Preventing Medication Error Incidences

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Reviewer: Ross Koppel

Reviewer's report:

The article attempts a useful synergy among six sigma, TQM, and the study of medication errors. Although very sincere, I fear the authors' lack of familiarity with the complexity of medication errors hampers their paper.

There review of the literature is too much of an undifferentiated collection of studies. There is an established literature on the topic, of which the authors don't appear to be familiar. A lot of the discussion feels like they are encountering this field for the first time…and presenting study after study without full consideration. For example, taking lessons from an eye clinic's medication errors makes little sense because the clinic has such a small range of medications.

This also leads to massive redundancies—as they seek to convince readers that med errors are important and frequent. But everyone in the field knows this.

Typo: (missing article before the word "event.") Because a medication error is harmful event that may cause or lead to inappropriate medication use or patient harm when the medication process is in the control of the health care professional.…

Here is a quote from the paper:

"Prescribing errors represent the majority of medication errors. They occur as a result of a prescribing decision or prescription writing process, when there is an unintentional significant reduction in the prospect of 71 treatment being timely and effective or an intentional significant increase in the risk of adverse result when 72 compared with generally accepted practice.[8]"

However, overdose can be unintentional, also. More important, it misses wrong drug, drug to which pt is allergic, DDIs, bad CDS, not following good CDS, and wrong patient errors.

Here is another quote that indicates a serious lack of understanding of the field:

Another predominant cause of medication errors is drug administration error. Administration errors 91 include the following, unauthorized drug; the administration of a dose of medication
that had never been ordered 92 for that patient, extra dose; any dose given more than the total number of times ordered by the physician, wrong 93 dose error; any dose of preformed dosage units (such as capsules) that contained the wrong strength or number, 94 omission; a failure to give an ordered dose, wrong route; medication administered to a patient using a different 95 route than ordered, wrong form; the administration of a dose in a different form than ordered by the physician, 96 wrong technique; exclusion of a procedure ordered by the prescriber immediately before administration of each 97 dose of medication, wrong time; administration of a dose more than 60 minutes before or after the scheduled 98 administration time.

The problem here is that the window to administer meds depends on the drug. Some drugs must be given at an exact time, others make little difference if they are 2 hrs late.

The rest of the paper presents the schema for the analysis, and involves three or four-fold redundancies that make the paper overly long and of diminishing utility for the reader.

My feel for the paper is that these are bright scholars who want to apply these business processes to medication errors, but underestimated the complexity of the problems. My suggestion is that the authors enlist someone who is familiar with the topic, cut out the three-fold or four-fold redundancies, compress the lit review into a short comprehensive statement, and focus on what they can actually contribute to the field.

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