Reviewer’s report

Title: Mortality and repeated poisoning after self-discharge during treatment for acute poisoning by substances of abuse: a prospective observational cohort study

Version: 0 Date: 07 Nov 2018

Reviewer: Lauren Birmingham

Reviewer's report:

Thank you for the opportunity to review this interesting manuscript. The topic is relevant to a global audience, and is well-done. My suggestions are primarily around making minor clarifications. I think there is an opportunity for the authors to describe how this study contributes to the literature, and is more than just an analysis that confirms the results of prior work.

Abstract:

In Results section, a sentence starts with a number (266). Please spell the number if you are starting a sentence with a number.

Background:

This section includes the information that should appear in a background section, however, the authors could do a better job summarizing themes rather than summarizing the results of specific studies. What do ALL of the studies find generally (when considered together)? What are the gaps/ limitations? How does this article satisfy the gaps left by previous studies?

Methods:

In general there should be better data definitions. How did severe mental illness get defined (specific ICD10s? the physician's opinion?)? I know this is listed as a limitation, but I am unclear of how severe mental illness was actually defined during the study.

What defines multiple presentations (2+, 3+, etc.)?

A better description of the enrollment process is necessary.
The time period to define death is not as clean as it could be. It would be better if there was a standard measure of time-to-death, such as 30-day mortality, or 3-month mortality, rather than just death at anytime during the study period. If a patient was enrolled in 1 Dec 2012 and died 1 Jan 2013, they may be different than a patient who enrolled on 1 Jan 2011 and died 31 Dec 2012. The variable time-to-death allowed by this design could potentially bias the results of the study. I think this is a limitation of the study that should be discussed in the limitations section, or the results should be re-calculated on the basis of a meaningful time-to-death measure (like 90-day mortality).

How is time of discharge defined for patients that elope (leave without telling anyone)?

What is the distribution of the different types of self-discharge (leaving without being seen, elopement, signing AMA, etc.)? How many eloped, etc.?

Results:

The tables are clean and easy to read. Results section is short an succinct and does not unnecessarily repeat information in tables/figures.

Are the differences observed in Figure 1 statistically significant? Seems like a chi-square could be utilized here.

Discussion:

I am confused by what is meant in the third line of the discussion section "short-time mortality was twice as high among self-discharging patients...". I don't see anywhere that the authors looked at a specific short vs. long-term mortality for patients (some patients had relatively short-term deaths while others likely had longer-term deaths since a standard time-to-mortality metric was not used).

The discussion section repeats a lot of what is in the results section without adding new information, so it comes off as a little repetitive. Additionally, the authors state that their results are largely in agreement with prior results... so how is the present study useful in contributing to new information/thinking? I think more work should be done to differentiate this paper in the content of what has been done already.

Good discussion of WHY people self-discharge.

Should list strengths of analysis-- not just weaknesses. Why did this study add to the literature base? How does this contribute to what is known/what we should do?
Overall: This is an interesting manuscript with a small but useful research question. There is room for improvement with respect to describing study operations/ data definitions, as well as describing how this study contributes to the current literature base.

**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

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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Acceptable

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