Author's response to reviews

Title: The Association of Psychiatric Comorbidity and Use of the Emergency Department among Persons with Substance Use Disorders: An Observational Cohort Study

Authors:

Geoffrey M Curran (currangeoffreym@uams.edu)
Greer Sullivan (sullivangreer@uams.edu)
Keith Williams (williamsdavidk@uams.edu)
Xiaotong Han (Xiaotonghan@uams.edu)
Elise Allee (alleemarye@uams.edu)
Kathryn J Kotrla (kotrla@medicine.tamhsc.edu)

Version: 2 Date: 6 October 2008

Author's response to reviews: see over
October 6th, 2008

Ashleigh Manning, Assistant Editor
BMC-series Journals
BioMed Central Ltd.
Middlesex House
34-42 Cleveland Street
London
W1T4LB
UK

Dear Dr. Manning,

My colleagues and I very much appreciate the opportunity to revise and resubmit our manuscript, “The association of psychiatric comorbidity and the use of the emergency department among persons with substance use disorders: An observational cohort study.” As well, we appreciate the extension of time in order to complete the revisions. Unfortunately, our statistical programmer and co-author was out of the country for longer than expected while attending to a health problem. We chose to wait for her return in order to test the recommended interactions and perform other analyses as requested by the reviewers.

We believe that the manuscript is greatly improved as a result of changes we made in response to the comments from the reviews and your staff. In the attached document, we address the comments from the reviewers. We first restate the comments from the reviews in italics then provide a response.

Again, we greatly appreciate the opportunity to resubmit the manuscript.

Sincerely,

Geoffrey M. Curran, PhD
Associate Professor
Department of Psychiatry
University of Arkansas for Medical Sciences
Little Rock, AR
Reviewer 1

1. The authors have been candid and appropriate in acknowledging research limitations. However, affecting generalizability, their study is not population-based. To back up the statement on Page 4 that “the hospital handles most of the city’s trauma and virtually all acutely ill indigent patients” it would be informative for readers to indicate how many other hospitals serve the city/county and estimate their collective patient share.

The hospital in question is one of two large hospitals owned and operated by the county government. It is the largest, (650 beds, compared to 330 beds) and has the only level-1 trauma center. Approximately 60% of county hospital ED patients were seen at the hospital in question. It has the only psychiatric ED in the county system. We have added this information to the text.

2. Class variation could introduce selection bias and confounding—related to the extent to which the non-indigent receive care in other area EDs and the differential likelihood that patients will be referred from the study ED (or taken directly) to the psychiatric ED. Data on insurance status could serve as a proxy for class in the absence of personal income, education, and occupation data.

We agree with the reviewer that class variation could introduce selection bias. However, we do not have access to data on insurance status or any of the other common indicators of social class—education, income, and occupation. If we had access to these variables, we certainly would have used them in the analyses.

3. Please estimate how many patients visited the ED in the study period as distinct from number of visits. Then the percentage of users with a primary substance use disorder can be calculated. The likely low prevalence will warrant a comment.

Indeed, the prevalence of substance use disorders was low. Of all persons with at last one visit to the ED during the span of the study (n = 203,114), 3.7% (n = 7,571) were assigned a primary diagnosis of a substance use disorder as defined by ICD-9 codes in at least one visit. This rate is now presented in the paper. (To restate here, we excluded 706 of those patients before our analyses to focus on the most common substance use disorder diagnoses.)

4. Are there any interactions between psychiatric comorbidity and race, gender, and age, respectively?

In the original analyses we did not test interactions. However, in preparation for this resubmission we tested the above recommended interactions using a p value of .01, as we did for the original analyses due to our large sample size (however, we did not say that in the methods section… we do now). None of the interactions was significant. While we do not present these data in the revised manuscript, we now note that the interactions were tested with none achieving statistical significance.
Reviewer 2

1. The authors should determine the types of comorbidities presenting.

In the current analysis we chose to “lump” the psychiatric comorbidities together as a common predictor variable while varying the substance use disorder diagnosis. Specifically, we wanted to answer the question: how does the impact of a psychiatric comorbidity vary by type of substance use disorder among persons with primary substance use disorders? In our previous manuscript with the same dataset, we focused on a different sample of patients with a primary psychiatric disorder and looked at the impact of a “lumped-by-diagnosis” substance use comorbidity on patients with varying psychiatric disorders (depression, schizophrenia, etc.). In each case, by varying the primary diagnoses and lumping the secondary diagnoses we felt that we were presenting the most interesting and parsimonious look at services use outcomes in the ED. We hesitate to begin to also vary the psychiatric comorbidities in the current manuscript because we don’t feel that we would learn very much more (especially given our previous paper), and we are concerned about testing too many models in this set of analyses. However, if the editor wishes us to reconsider looking at this, we are certainly open to more discussion.

2. The authors should describe the reasons for patients presenting to EDs.

We are not exactly sure what to do with this recommendation due to the complexity of the dataset on this issue. In the dataset we have up to three “chief complaints” for each visit. These are 100 categories of complaints, e.g., “puncture wound”, “fever”, “psychiatric problems”, etc. Patients with multiple visits have multiple complaints over time. We’re not sure how we could effectively (and briefly) convey the information regarding chief complaints. Further, we are not sure if it would provide enough new information as the diagnoses we use to classify patients are based on the primary diagnosis assigned to each visit. One would assume that in most cases the primary diagnosis is linked to the presenting complaints. Any suggestions from the editors on this would be helpful.

3. Given the large sample size, the authors should undertake further analysis by gender.

In preparation for this resubmission and in response to another reviewer we tested for interaction between gender and psychiatric comorbidity on their association with each category of visits. None were statistically significant. While these additional data are not presented in the current version of the manuscript, we do note that these interactions were tested and found to be non-significant.

4. It would also be relevant to examine the data to determine what types/combinations of comorbidity use most resources.
Unfortunately, we have no data, other than services use measured by visits, to indicate resource allocation. We have added to the limitation section that we had no access to cost or other useful indicators of resource allocation other than visits.

5. **While the authors explain their previous work in the supplementary document and how it differs from the current work, the text would benefit from differentiating the studies in the introduction otherwise it is unclear they are different studies.**

In the introduction of the manuscript we now present greater detail on the prior study, specifically indicating that while the basic methodology is the same, the samples are different as are the comorbidities examined.

6. **[The abstract] would benefit from description of how psychiatric disorder was diagnosed, and how determined/defined “comorbid” (summary of what is described in methods section).**

We have added these descriptions to the abstract.

7. **[The background first sentence] would benefit from an explanation/contextualization for the non-US reader why EDs are the “de facto public health care for vulnerable populations.”**

We apologize for the US-centric point of view expressed in this sentence. After much thought, we decided to delete the sentence. The point that we were trying to express about the for profit/not-for-profit mixture in the US healthcare system is not central to the current paper, and the description we provide of the hospital itself in the methods section we think is all that is really necessary to contextualize the research.

8. **Typo on Page 9 line 5 last word… “this” should be “the”**

This typographical error has been corrected.

9. **Table 1, add years to mean age; add numbers as well as % to tables.**

The table has been amended.

**Editorial Staff**

1) **Research…must be in compliance with the Helsinki Declaration. A statement to this effect must appear in the methods section indicating the name of the body which gave approval.**

We now list the IRB that approved the research.
2) We also recommend you add more detail to the background section of the abstract to put your work in context.

We have amended the abstract as suggested.