Reviewer’s report

Title: Pre-Hospital Treatment of Acute Poisonings in Oslo

Version: 1 Date: 8 May 2008

Reviewer: Paul Dietze

Reviewer’s report:

General comments:
This is an interesting paper that describes the characteristics of presentations to three tiers of Oslo’s Emergency Response System for managing acute poisonings. The study builds upon previous work that has generally been single-setting or single-drug focused (eg Cvetkovski & Dietze, 2008; Degenhardt, Hall, & Adelstein, 2001; Dietze et al., 2004). By taking a system-wide perspective the study highlights differences in the way in which poisoning presentations, treatment and outcomes vary by agent (typically drug), along with key correlates such as age and gender. The paper also provides some useful indications of outcomes such as transfer to higher tiers in the system and post-discharge mortality. It is important to reiterate that heroin overdoses can be treated appropriately in the pre-hospital setting without compromising patient safety.

Major compulsory revisions
The discussion of the paper does not play to the study’s strengths. The novel system-wide focus is not discussed in depth with the major focus being on opioid (apparently primarily heroin) overdoses and their management in the pre-hospital setting. While there are some important findings here, they really just replicate previous work and the discussion adds little to the existing literature. I would suggest re-orienting the discussion to consider the practice implications of the findings of the system-wide analysis, which draws into sharp focus the differences in populations presenting according to different agent types (eg what are the implications for systems of the effects of gender, given that the populations are so different according to agent type). Further, there are other system-wide issues of interest. These data are able to provide a clear indication of the proportion of opioid overdoses that arriving at hospitals that are transported by ambulance. This is an important consideration in terms of surveillance that has received little attention in previous work.

Specific suggestions for improvement:
The system-wide consideration I detailed above would enhance the paper. One other way of enhancing the paper would be to provide more detail of the different patterns of case characteristics within agent type. This would mean that the dramatic differences in population (eg injecting drug users versus suicide attempts) would not drive the major findings and discussion sections of the paper.
If the authors choose to continue the focus on opioid overdose, the paper could benefit from a more thoroughgoing review of the literature. This is evident in the opening paragraph where no citations are provided apart from the first sentence, despite the fact that there is substantial previous work bearing on the issues discussed. Moreover, some of the points made have been made elsewhere - for example our previous work has highlighted the effects of differences in practices between different jurisdictions in producing different rates of transportation (Dietze et al., 2004), the point made on page 13 (discussion). Further, some consideration of the effects of differing naloxone doses may in part explain some of the differences in transportation reported in the discussion. These issues have been considered in previous research (Cantwell, Dietze, & Flander, 2005) and should be acknowledged. Finally, if this focus on opioid overdose is maintained, then some consideration should be given to potential differences between different opioids (eg was it only longer-acting opioids that were transferred? While the difficulties in obtaining a precise description of the agent involved are acknowledged, the definitions of heroin overdose used in some of our previous work exclude longer-acting opioids where possible).

I was interested in the statement at the end of the opening paragraph about the inaccuracy of non-hospital diagnoses. Given the limitations outlined at the end of the paper, I wonder how many ambulance-level diagnoses were subsequently changed to a ‘correct’ diagnosis. This would be of interest to readers and should presumably be available from the data collected.

While the paper is generally well-written, throughout the manuscript the terms poisonings, intoxication and overdoses are variously used to describe cases. These need clarification and definition and some degree of consistency should be applied throughout the paper.

Insufficient detail is provided in relation to the analysis strategy. While it is stated that adjusted odds ratios are provided, it is not clear whether all variables listed in the tables were included in this analysis or whether any additional (or fewer) variables were included.

Minor essential revisions:
There is considerable redundancy in the presentation of the results. A careful edit of the results section making better reference to the tables would remove much of the exact duplication between numbers presented in text and in tables.

On page 13, 3rd last line of the second paragraph, ‘do’ should be ‘to’.

References
Cvetkovski, S., & Dietze, P. (2008). The incidence and characteristics of volatile substance misuse related ambulance attendances in metropolitan Melbourne,
Australia. Social Science and Medicine, 66(3), 776-783.

**Level of interest:** An article whose findings are important to those with closely related research interests

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

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

'I declare that I have no competing interests'