Reviewer's report

Title: Determinants of hospitalization for cutaneous injection-related infections among injection drug users: a cohort study

Version: 2 Date: 1 September 2009

Reviewer: JD Rich

Reviewer's report:

This is a study of 1,083 injection drug users recruited from the Vancouver supervised injection facility evaluating hospitalizations due to injection related infections. The authors found a 6 per 100 person-years incidence of hospitalization for injection related infections. They found that being HIV positive and being referred to the hospital by a nurse at the injection facility were associated with increased hospitalization; however, the length of stay was significantly short among participants referred to the hospital by a nurse at the injection facility. They conclude that nurses at the injection facility facilitate hospital utilization, as well as early intervention that prevent lengthy and expensive hospital visits for injection related infectious complications.

This is an important and well designed study. The major concern it whether those individuals referred for CIRI by the SIF nurse got early treatment for a significant infection as is postulated or whether they were managed conservatively and might have resolved the infection without hospitalization. If the latter were the case, they would likely have a shorter hospitalization. I am not sure of the best way to resolve this question, but perhaps adressing the following issues may shed some light on this issue.

Under RESULTS, the end of the first paragraph – The authors note that “virtually all patients are admitted to hospital from the Emergency Department”. Does this mean that they are admitted to the Emergency Department as opposed to being directly admitted to the hospital? Or, does this mean that all patients referred from the SIF were, in fact, hospitalized? It would be useful to know how many referrals are typically made to the hospital and for what indications. In addition, what types of treatments are available at the SIF for injection related complications? It is mentioned that they do not do incision and drainage, for example. Do they prescribe antibiotics, do they do blood cultures? Is there an understanding between the SIF nurses and the Emergency Department about whether patients should be hospitalized or not? How many patients were referred to the Emergency Department and not hospitalized? It could be that patients with known HIV were more likely to be hospitalized because the E.R. physicians are familiar with data suggesting that people with HIV do not handle bacterial infections as well, rather than them having worse infections. The fact that people with HIV are hospitalized may be, as suggested, due to increased risky injection practices, could be due to worsened infections, or could be just due to different treatment protocols that the physicians are adhering to.
It is noted that HIV positive participants had a higher rate of hospitalization. Was their length of stay any longer?

It is mentioned that the SIF nurses “play a key role in enhancing access to medical care”. It may be that emergency room physicians are more likely to take a referral seriously and to err on the side of hospitalizing someone and being more conservative in their treatment, than if someone merely walked in off the street and, thus, those who walk in off the street and become hospitalized are significantly sicker merely because they did not have a referring physician, rather than an impact of the injecting facility nursing care.

Another piece of data that might support the hypothesis that these infections are being caught earlier would be mortality from infections. Some of these might be mistakenly identified as overdose, however, if there were data on fatalities or better still, injection related infection mortality in those referred from the SIF vs. those who were not referred or not participating in the SIF, that could be supportive.

Another potentially supporting piece of data would be to look at those who went to the E.R. and were not hospitalized and perhaps even monitoring E.R. visits prior to hospitalization. For example, if someone visits the E.R. once or more times prior to the visit where they are hospitalized, you would anticipate that would be more likely in someone without a referral. But, you may want to compare the baseline frequency of E.R. visits in both groups.

Table 2 notes cocaine and speedball injection but does not look at heroin injection. Is there a reason for this? Also, in the West of the U.S., the predominant form of heroin is “black tar”. This is much more likely to form abscesses probably due to its caustic effect on veins. What is the predominant form of heroin utilized in Vancouver? Is it powder or black tar?

This may impact the generalizability of these results.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests'