

Vide VIDUS

Kevin Craib and colleagues¹ report that “frequent [at least once daily] speedball (combined cocaine and heroin) injection” was a predictor of HIV seroconversion for male and female Aboriginal injection drug users in the Vancouver Injection Drug User Study (VIDUS). Other predictors, all identified by Cox regression analysis, were frequent cocaine injection, frequent heroin injection and self-reported “binges of injection drug use.” No other sociodemographic or behavioural characteristics were significant risk factors.

Needle-stick transmission of HIV is well known, so it is hardly surprising that high frequency of cocaine or heroin injection is statistically associated with increased rates of HIV infection. Moreover, 124 VIDUS participants died in the first approximately 5 years of the study, the cause of death being HIV/AIDS for 28, overdose for 41 and some other cause for 55.² Thus, regardless of HIV transmission, frequent cocaine and heroin injection should be a public health concern, as well as a law enforcement issue.

The VIDUS investigators discerned previously³ that frequent speedball injection is significantly associated with a doubling of HIV seroconversion

among all men and all women who enrolled as HIV-negative VIDUS participants. Yet Craib and colleagues¹ assert that “The strong association between frequent speedball injection and HIV infection among both the Aboriginal men and women appears to be a new finding and is of grave concern.” They further state that their study “highlights the urgent need for the rapid implementation of evidence-based prevention interventions that are planned and delivered in partnership with Aboriginal AIDS service organizations and the Aboriginal community.” This VIDUS tune has an “aggressively assertive,” “presumptuous” and “overbearing” tone, which Sackett⁴ described as “the arrogance of preventive medicine.”

Craib and colleagues,¹ using Kaplan–Meier plots of seroconversions over time (from individuals’ dates of enrolment with HIV-negative status), show that cumulative HIV infection rates to 42 months after enrolment were twice as great for Aboriginal men and women as for non-Aboriginals. That is, Craib and colleagues repeat the finding of an earlier VIDUS paper,³ that Aboriginal identity is itself a risk factor for seroconversion. This factor is one that cannot be modified, and the medical literature already associates Aboriginal status with numerous health woes. Thus, it is difficult to understand

the specific benefits of focusing on speedball injection.

In addition, Craib and colleagues¹ disregard inflections and crossings of Aboriginal and non-Aboriginal time-to-event plots, which would suggest that the Cox proportional hazard regression model is not appropriate for these data.⁵ Nonetheless, this mathematical model drives all of the numeric, nongraphic risk estimations (and confidence intervals) presented by Craib and colleagues.¹ In addition, they use log-rank tests to demonstrate that some of the differences shown graphically were statistically significant, but this point might be better demonstrated by 2 × 2 tables (counts of HIV-negative VIDUS enrollees cross-tabulated by race and by HIV status at 42 months, if known).

Good intentions and computing software can produce epidemiologic research that is highly “statisticated” but that is neither perceptive nor helpful.

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Pfizer

Norvasc

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[Three of the authors respond:]

Ned Glick appears to recognize the health inequalities faced by Aboriginal people but views these inequalities as inevitable since, from his statistical viewpoint, Aboriginal ethnicity is a factor “that cannot be modified.” Not surprisingly, our Aboriginal partners in VIDUS do not want to modify their ancestry. Instead, they wish to see the social determinants of ill health improved in their communities. Although we cannot change the history of assimilationist residential school policy, we can begin to address its legacy — despair, poverty, addiction, unemployment, child prostitution and incarceration. Fortunately, these latter factors are eminently modifiable — if we have the will to confront this national shame.

Glick notes inflections and crossings in the cumulative HIV incidence curves for Aboriginal and non-Aboriginal participants. On this basis, he suggests that the Cox proportional hazard regression model is inappropriate for these data. However, in this study, Cox proportional hazard regression was not used to model the hazard ratio of Aboriginal versus non-Aboriginal participants. Rather, it was used to assess the independent effects of risk factors on time to HIV seroconversion among Aboriginal participants only. Thus, the appropriateness of the Cox model should be assessed using time-to-event data for the Aboriginal participants only. Indeed, we did assess departures from the assumption of proportional hazards using both graphic and numeric checks. For the variables of interest in these analyses, we

found no evidence of significant departures from this assumption.

Glick suggests that contingency table analysis might be useful for demonstrating the difference between Aboriginal and non-Aboriginal participants with respect to the percentage of individuals who experienced seroconversion within 42 months (if known). However, this approach assumes that each participant has been followed equally for 42 months. We believe that a more appropriate method in this situation is survival analysis, which accounts for different lengths of follow-up among the participants. Nonetheless, we did carry out the analyses Glick suggested and obtained results entirely consistent with those presented in our article.¹

Although Glick found the tone of our article “overbearing,” the language we used was pre-reviewed and approved by a number of our Aboriginal partners. Understandably, these organizations advocate the need to be assertive, as their community is experiencing prevalence rates for HIV of over 40% and for hepatitis C of over 90%, along with significantly reduced life expectancies. Perhaps if Glick were witnessing similar devastation in his own community, he might feel the need to be similarly assertive.

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Training on the wards

I find it difficult to understand what problem Kenneth Flegel and Anita Palepu¹ are trying to solve when they argue that a greater proportion of internal medicine resident training should take place in ambulatory clinics. They

cite a need to correlate the information taught with what the trainee is planning to do in the future (contextual learning), but for generations, trainees have matured as physicians in the ward setting, without any apparent difficulty in adapting to ambulatory practice once training was complete. In fact, the key to medical training at any level is to equip trainees with the ability to learn independently, if only so they can match their eventual practice with their talents and with community needs at the time of graduation.

Moreover, ward teaching has a number of advantages. During bedside rounds, trainees learn to appreciate first-hand how the unique perspectives of different health care providers can contribute to patient management. Ward teaching is also efficient, because several trainees at different levels can be taught at the same time. Furthermore, trainees at various levels teach each other. Hospital patients are usually ill, so residents become intimately acquainted with the protean manifestations of disease. This experience is invaluable in meeting one of the main challenges of outpatient medicine — differentiating the “worried well” from those with organic illness requiring priority management. In addition, hospital patients tend to be the most challenging to treat, stimulating the most thought, since memorized “care pathways” are only rarely sufficient to deal with their complicated multisystem problems. There is also an economic incentive to keeping teaching on the wards: in our current medical system, time truly is money, and residents in the hospital save time, whereas trainees in the clinic consume time. Until this issue is addressed, teachers are likely to resist the switch from inpatient to outpatient teaching.

A trainee’s educational experience seems to be determined neither by the type of patient encountered nor by the setting in which the patient is seen, but rather by the characteristics of the individual doing the teaching. Rotations in which physician-teachers transmit to their students the satisfactions of medical practice, stimulate thought and en-