

# HIV in the blood supply: nothing to fear but fear itself

Steffanie A. Strathdee, PhD; Michael V. O'Shaughnessy, PhD;  
Martin T. Schechter, MD, PhD

## Résumé

DANS CE NUMÉRO (page 375), le Dr Robert S. Remis et ses collègues estiment à environ 1 par million d'unités de sang transfusé le risque d'infection par le VIH à la suite d'une transfusion de sang au Canada au cours des années 1990. La perception du risque et son acceptation par le public ne reposent toutefois pas seulement sur les connaissances scientifiques. Elles sont liées aussi à une toile complexe de facteurs sociaux, contextuels et culturels. La plupart des Canadiens croiraient probablement à tort que le risque d'infection par le VIH à la suite d'une transfusion de sang est plus élevé qu'on l'aurait estimé il y a 10 ans, mais beaucoup de personnes sous-estiment les risques beaucoup plus élevés de transmission du VIH par voie sexuelle et parentérale. C'est peut-être la recherche du «risque zéro» par le public qui a ouvert la voie à des politiques douteuses d'analyses sanguines comme le test de dépistage de l'antigène p24. Il ne faudrait pas considérer que la faible incidence d'infection par le VIH chez les donneurs de sang indique que l'épidémie ralentit, surtout à la lumière des taux d'incidence élevés chez les populations marginalisées du Canada.

In this issue (page 375), Dr. Robert S. Remis and colleagues present data that suggest the risk of acquiring HIV in Canada in the 1990s through a transfused unit of blood is about 1 in a million overall and 1 in 400 000 in urban centres. This news should allay the fears of the public, even in the era of the Commission of Inquiry on the Blood System in Canada (the Krever inquiry). But will it? Research on risk assessment has shown that perception and acceptance of risk do not rely solely on knowledge and scientific fact, but also on a complex web of social, contextual and cultural factors.<sup>1</sup> People use different heuristics, or mental strategies, to calculate risk. For example, it is well known that the public tends to overestimate the probability of extremely hazardous health threats that are outside of their control, such as nuclear-plant accidents. On the other hand, people tend to underestimate the probability of risks that occur as a consequence of common voluntary behaviours such as smoking.<sup>2</sup> Public concern about the risk of HIV transmission through blood transfusion in Canada is an example of a situation in which the risk is perceived to be high but is in fact extremely low, indeed bordering on the nonexistent. It is an unfortunate paradox that most Canadians would probably estimate the risk of HIV transmission through blood transfusion to be higher than they would have 10 years ago.

The threat posed by HIV can bring out the best and the worst in us. People have long had a fear of HIV infection that is disproportionate to their concern about other health risks. What else could explain a news clip a few years back showing a mother removing her children from an elementary school because it had allowed an HIV-positive student to return to classes? As she whisked her car away, her 2 children could be seen sitting in the front seat without their seatbelts.

At the same time, people manage to underestimate the very real risks of sexual and parenteral transmission of HIV. In a recent study of HIV-positive women in Ontario, most of whom were heterosexually infected, 90% had not perceived themselves to be at any risk of HIV infection.<sup>3</sup> Moreover, the very concept of risk differs from one person to another.<sup>1</sup> Injection-drug users in Vancouver's downtown Eastside are living in the midst of what appear to be the highest HIV sero-



*Editorial*

*Éditorial*

**From the Faculty of  
Medicine, University of  
British Columbia, and the  
British Columbia Centre for  
Excellence in HIV/AIDS,  
Vancouver, BC.**

*Can Med Assoc J* 1997;157:391-2

‡ See related article page 375



conversion rates in North America,<sup>4</sup> yet most believe their own risk of HIV infection to be very low. One explanation for this disparity is that many injection-drug users consider immediate threats (e.g., the threat of violence from dealers or of police arrest) to be more important than the potential long-range health effects of HIV infection.<sup>5</sup> Why worry about something that will affect you 5 to 10 years from now, if you also have to worry about getting through the next 5 to 10 hours?

Remis and colleagues describe screening measures to reduce the risk of disease transmission through blood transfusion. These include exclusions based on donor characteristics and behaviours, and testing for markers of specific viruses (e.g., HIV, hepatitis C virus and HTLV-I). Whether these measures were introduced in as timely and efficient a manner as possible is currently the subject of much discussion. In any case, their present use has succeeded in dramatically lowering the prevalence of blood-borne pathogens in the Canadian blood supply. Nevertheless, the public's confidence in the blood supply has been fundamentally shaken by revelations made in the course of the Krever inquiry and by the continuing delay in the release of its final report. The Canadian public has little confidence that the blood system as it now stands can react in timely fashion to the next emerging pathogen.

The "window period" — the delay of about 25 days after infection before HIV antibodies can be detected in the blood — is the main reason why the risk of infection through blood transfusion is, as Remis and colleagues report, "extremely small but not zero." Indeed, as long as there is a window period, there will be a theoretical risk. Risk-benefit analysis should always be considered fundamental to program evaluation. On the basis of the estimates by Remis and colleagues, we may expect approximately 1.5 HIV transmissions attributable to transfusion in Canada every year. This must be weighed against the myriad of Canadians whose lives have benefited or been saved as a result of a medically necessary transfusion.

At the societal and individual level, we must ask How safe is safe enough? This is an issue not only in the prevention of HIV infection and AIDS, but in any intervention. Large disparities between actual and perceived risks provide fertile ground for irrational decision-making. It may be the public's pursuit of "zero risk" that has led to some recent and costly blood-screening policies. Following the US example, HIV-1 p24 antigen testing was introduced in Canada in March 1996 in an effort to further shorten the window period. The estimated protection afforded by p24 antigen testing was infinitesimal to begin with, and has turned out to be even lower than expected.

Isn't there something better we could be doing with several million dollars a year?

What is the role of the physician in promoting realistic attitudes about HIV risks? Physicians have a responsibility to communicate information about health risks to their patients. Patients undergoing elective surgery, for example, should be told both the benefits and the risks of the procedure, which could include the need for transfusion. Physicians also have an opportunity to encourage people at high risk for HIV, hepatitis B or C, or HTLV-I infection to exclude themselves from blood donation. Remis and colleagues make a critical point in stating that most HIV-infected donors have risk factors for HIV infection that should have excluded them from donation. Health care professionals can also encourage people at high risk of HIV infection to seek testing. In the early 1980s, several astute Vancouver physicians recommended to their homosexual patients that they stop donating blood. This single measure likely directly and indirectly saved many others from becoming infected with HIV.

We should take no solace that the low incidence rates observed by Remis and colleagues indicate some abatement of the HIV epidemic. We do not concur with their view that HIV incidence data from blood-donor programs provide a practical glimpse into the status of the epidemic. Blood donors are one of the most highly selected populations imaginable. Indeed, although results of the blood-screening program have shown a low rate of infection among donors and have remained stable, HIV infection rates in Canada have climbed during the past several years and alarming epidemics are emerging in some marginalized populations.<sup>4</sup> The blood supply may be safe, but high-risk sexual activity and needle sharing are clearly not.

## References

1. Slovic P. Perception of risk. *Science* 1987;236:280-5.
2. Aggleton P, O'Reilly K, Slutkin G, Davies P. Risking everything? Risk behavior, behavior change and AIDS. *Science* 1994;265:341-5.
3. Jackson L, Millson P, Calzavara L, Rachlis A, Rowe C, Strathdee S, et al, and the HIV Women's Study Group. HIV-positive women living in the Metropolitan Toronto area: their experiences and perceptions related to HIV testing. *Can J Public Health* 1997;88(1):18-22.
4. Strathdee SA, Patrick DM, Currie SL, Cornelisse PGA, Rekart ML, Montaner JSG, et al. Needle exchange is not enough: lessons from the Vancouver Injection Drug Use Study. *AIDS* 1997;11:F59-F65.
5. Harvey E, Strathdee SA, Patrick DM, Ofner M, Archibald CP, Eades G, et al. A qualitative investigation into an HIV outbreak among Injection Drug Users in Vancouver, British Columbia. *AIDS Care*. In press.

**Reprint requests to:** Dr. Steffanie A. Strathdee, British Columbia Centre for Excellence in HIV/AIDS, 611-1081 Burrard St., Vancouver BC V6Z 1Y6; fax 604 631-5464; steff@hivnet.ubc.ca