

As noted above, substitution of DTR injection equipment for diabetic use would lead to some mixture of increased cost and of attempts to defeat the DTR technology. An increase in costs to diabetics may be provoke resentment on their part when injection equipment is being provided free (on an exchange basis) to persons who are injecting illicit drugs. Diabetics protested and delayed implementation of syringe-exchange programs in Canada (that provide easy-to-reuse equipment), because the diabetics believed it was unfair for the government to provide free injection equipment to illicit drug users while the diabetics themselves had to pay for their injection equipment. Hence, it is likely that free difficult-to-reuse injection equipment would also have to be offered to diabetics in the United States on an exchange basis as part of any plan to use DTR equipment within a blanket system for distributing to drug injecters.

A targeted distribution approach, which would place DTR injection equipment only into very high-risk injection situations such as shooting galleries and dealer's works, would not require changing the single use but easy-to-reuse equipment currently in medical use. This strategy would thus allow time for gaining some practical experience with the distribution of DTR equipment to injecting drug users—and their reactions in the field to such equipment—without at the same time having to change the patterns of normal medical injections.

CONCLUSION

The analyses in this paper indicate that most proposals for utilizing redesigned injection equipment are unlikely to reduce the spread of HIV and may have other unintended consequences. There is no syringe yet designed and feasible to manufacture that could not be defeated by someone seeking to reuse it. Distributing enough syringes to prevent the establishment of a black market for injection equipment that can be easily reused presents significant logistical and ethical dilemmas. In addition, evidence indicates that many of the proposed redesigns would interfere with usual drug-taking practices, making most drug users unlikely to accept them. Redesigned syringes would also likely cost more than current syringes and could significantly add to medical waste problems. Some injecting drug users have, however, indicated a willingness to use redesigned injection equipment in order to reduce the transmission of HIV. Targeted distribution of

redesigned injection equipment could be used to identify those situations in which: 1) injecting drug users would be least likely to try to defeat DTR equipment; 2) the cost, supply, and safe disposal problems would be manageable; and 3) the use of DTR equipment would have the greatest impact on reducing HIV transmission among injecting drug users.

REFERENCES

1. **Buning, E.**, Municipal Health Service, Amsterdam, The Netherlands, personal communication, March 1992.
2. Case, P., Harvard AIDS Institute, Harvard University, Boston, MA, personal communication, January 1992.
3. **Casriel, C., Des Jarlais, D.C., Rodriguez, R., et al.**, "Working With Heroin Sniffers: Primary Prevention of IV Drug Use Related AIDS," *Journal of Substance Abuse Treatment* 7(1):1-10, 1990.
4. Chitwood, D.D., McCoy, C. B., **Inciardi, J.A.**, et al. "HIV Seropositivity of Needles From Shooting Galleries in South Florida," *American Journal of Public Health* 80(2):150-152, 1990.
5. **Des Jarlais, D. C., and Friedman, S.R.**, "AIDS Prevention Programs for Injecting Drug Users," *AIDS and Other Manifestations of HIV Infection, Second Edition*, G.P. Wormser (ed.) (New York, NY: Raven Press, in press).
6. **Des Jarlais, D. C., and Friedman, S.R.**, "The AIDS Epidemic and Legal Access to Sterile Equipment for Injecting Illicit Drugs," *Annals of the American Academy of Political and Social Science* 52:42-65, 1992.
7. **Des Jarlais, D. C., Friedman, S.R., Choopanya, K., et al.**, "International Epidemiology of HIV and AIDS among Injecting Drug Users," AIDS, in press.
8. **Evans, P.**, "The State of the Art of Self-Destruct Syringe Design," *Proceedings of the First International Conference on Self-Destructing (Non-Reusable) Syringes: Strategies for Blocking Transmission of HIV, Hepatitis and Other Blood-Borne Pathogens* (New York, NY: New York University Medical Center, 1991).
9. **Friedman, S.R.**, National Development and Research Institute, Inc., New York, NY, personal communication, June 1992.
10. **Friedman, S.R., and Des Jarlais, D.C.**, "HIV Among Drug Injecters: The Epidemic and the Response," *ALDS Care* 3(3):237-248, 1991.
11. **Gerberding, J.L., and Schecter, W.P.**, "Surgery and AIDS: Reducing the Risk" [editorial], *Journal of the American Medical Association* 265(12):1572-1573, 1991.

12. Hopkins, W., New York State Division of Substance Abuse Services, New York, NY, personal communication, September 1984.
13. **Marmor, M.** (cd.), *Proceedings of the First International Conference on Self-Destructing (Non-Reusable) Syringes: Strategies for Blocking Transmission of HIV, Hepatitis and Other Blood-Borne Pathogens* (New York, NY: New York University Medical Center, 1991).
14. National Commission on AIDS, *Report: The Twin Epidemics of Substance Use and HIV* (Washington, DC: U.S. Government Printing Office, 1991).
15. National Commission on AIDS, *Preventing HIV Transmission in Health Care Settings* (Washington, DC: U.S. Government Printing Office, 1992).
16. Needle, R., National Institute on Drug Abuse, **Rockville, MD**, personal communication, September 1989.
17. Office of National Drug Control Policy, Executive Office of the President, *National Drug Control Strategy: A Nation Responds to Drug Use* (Washington, DC: U.S. Government Printing Office, 1992).
18. Oliver, K.J., Friedman, S.R., Maynard, H., et al., "Impact of Needle Exchange Program on Potentially Infectious Syringes in Public Places," *Journal of AIDS* 5(5):534-535, 1992.
19. Pascal, C. B., "Intravenous Drug Abuse and AIDS Transmission: Federal and State Laws Regulating Needle Availability," *Needle Sharing Among Intravenous Drug Abusers: National and International Perspectives*, **R.J. Battjes** and **R.W. Pickens** (eds.), Research Monograph 80, U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Association, National Institute on Drug Abuse, DHHS Pub. No. (ADM) 88-1567 (**Rockville, MD**: 1988).
20. Robertson, J.R., **Bucknall**, A.B.V., Welsby, P.D., et al., "Epidemic of AIDS-Related Virus (HTLV-III/LAV) Infection Among Intravenous Drug Abusers," *British Medical Journal* 292(6519):527-529, 1986.
21. **Samuels**, M.E., **Koop**, C.E., and **Hartsock**, P.I., "Single-Use Syringes" [letter], *New England Journal of Medicine* 324(14) :996-997, 1991.
22. **Serrano, Y.**, Association for Drug Abuse, Prevention, and Treatment, New York, NY, personal communication, March 1988.
23. **Sotheran, J.**, National Drug and Research Institute, Inc., New York, NY, personal communication, February 1992.
24. **Stephenson, B.**, National Development and Research Institute, Inc., New York, NY, personal communication, June 1990 and July 1992.
25. **Stephenson, B.**, "Thoughts on Self-Destruct Syringes From a Former User," *Proceedings of the First International Conference on Self-Destructing (Non-Reusable) Syringes: Strategies for Blocking Transmission of HIV, Hepatitis and Other Blood-Borne Pathogens* (New York, NY: New York University Medical Center, 1991).
26. U.S. Congress, Office of Technology Assessment, *HIV in the Health Care Workplace, OTA-BP-H-90* (Washington, DC: U.S. Government Printing Office, November 1991).
27. **van Ameijden**, E.J.C., **van den Hock**, A., and **Coutinho**, R.A., "Risk Factors for HIV Seroconversion in Injecting Drug Users in Amsterdam, the Netherlands," abstract no. TH.C.104, paper presented at the Seventh International Conference on AIDS, Florence, Italy, July 1991.
28. **Wodak, A.**, St. Vincent's Hospital, Sydney, Australia, personal communication, March 1992.