

Iatrogenic HIV transmission in South Africa: Evidence, estimates and moral perspectives

To the Editor: The risks of HIV transmission to patients exceed many health professionals' expectations in South Africa. Non-vertical HIV transmission to children is more common in cases where adherence to infection control guidelines is generally poor. Given the extent and seriousness of the HIV/AIDS pandemic, the moral abhorrence of offering resource scarcity as justification for tolerating unsafe health care where appropriate oversight is clearly lacking must be brought to light. The management of HIV, so often hampered by factors that are extremely difficult, if not impossible, to control, is more straightforward where patient safety is concerned. At the very least, injection safety can be fully controlled. Every possible measure ought therefore to be taken to prevent HIV infections through syringe reuse, needle reuse, multi-dose vial reuse after reconstitution with a used syringe or unsafe procedures other than injections. The recognition of clusters of cases could prompt a search for other iatrogenic infections in patients served in the same medical settings. Patient-observed sterile treatment (POST) has been described as a practical goal for preventing unsafe procedures, and would protect patients both in and outside the clinical setting. At present, public awareness that small blood exposures carry an HIV-transmission risk is inadequate, at least in relevant professions (e.g. dentistry and barbering). Programmes to raise public awareness of parenteral transmission risks would complement provider-oriented injection-safety interventions. This review examines the epidemiological evidence that patient safety interventions are needed to combat the spread of HIV/AIDS in South Africa, and sets forward an ethical imperative to prevent iatrogenic HIV transmission entirely.

Iatrogenic HIV transmission risks in South Africa raise ethical as well as practical questions.¹ Although numerous cases of iatrogenic HIV transmission have been observed in South Africa, active searches for additional cases among patients who had attended any health care facility implicated in

one iatrogenic infection have not been attempted. Where additional cases have been sought on the basis of similar evidence but against a background of low HIV prevalence, major iatrogenic outbreaks were identified in Libya, Romania, Russia, and other countries, as shown in Table I.

In the Free State province of South Africa in 2005, Shisana and colleagues documented major lapses in infection control in public hospitals and clinics.² In maternity and paediatric wards, 15% of injections were performed with reused syringes. In the health district where the majority of infection control lapses were observed, 4.8% of HIV-positive children had HIV-negative mothers.

Injection safety and blood screening should not be the sole focus of HIV prevention in invasive health care. In the Free State, 23% of instruments coming into contact with patients in maternity and paediatric wards (such as artery forceps and IV/suture materials) were still visibly contaminated with blood when collected immediately before reuse on another patient. In public dental clinics, only 60% of critical items were sterilised before reuse although autoclaves were available, and despite health workers' knowledge that sterilisation is required.

National survey data suggested excessive HIV prevalence in children in 2005, which was initially questioned because there were few AIDS-related deaths in children at this time. But to date, misclassification of AIDS deaths and underreporting of HIV as an underlying cause of death remain the norms for all age groups in South Africa. Tuberculosis, often associated with HIV, is the leading cause of death in South African adolescents, and in South African adults, a majority of deaths from tuberculosis are in HIV positive individuals.³ Mortality from natural causes doubled in the 15 to 24-year age group over 1997 to 2005.⁴ In comparison, mortality from natural causes tripled in 30 to 39-year-olds over this

Table I: Investigated HIV outbreaks associated with major lapses in injection safety

Outbreak identified	Prevalence	Cases	Search for cases?	Procedures
Australia, 1989	0.01%	4	Yes	Reusing reconstitution syringe and contaminating one multi-dose vial used for multiple patients
Russia, 1988	0.001%	288	Yes	Reusing syringes after changing the needle
Romania, 1990	0.8%	700+	Yes	Reusing needles and syringes, transfusions
Libya, 1998	0.04%	429	Yes	Reusing needles and syringes, transfusions
Kazakhstan, 2006	0.03%	119	Yes	Reusing needles and syringes, transfusions
Kyrgyzstan, 2008	0.08%	122	Yes	Reusing catheters, needles and syringes, transfusions
Gujarat, 2008	0.1%	32	No	Reusing needles and syringes

period.⁴ Although this increase in adolescent mortality cannot be positively attributed to HIV, if even 20% of these excess deaths in young adults were attributed to HIV, a conservative estimate, this would suggest that the incidence of HIV in 5 to 14-year-old children (whose infections would be latent until age 15–24) over 1990 to 1995 was 12% of the HIV incidence among adults (calculated from the ratio of the crude increase in mortality from natural causes in the two age groups). This is consistent with the ratio of child-to-adult HIV incidence reported from the BED IgG capture enzyme immunoassay, used in 2005 to test almost 16 000 South African adults and children for recent HIV infections.¹ This assay indicated an incidence of non-vertical HIV transmission to children corresponding to 69 000 iatrogenic infections in the 2 to 14-year-old age group nationwide in 2005.

The risks of iatrogenic HIV transmission in an unsafe injection need not be weighed against the risk of infectious diseases if immunisations are refused. The auto-disable syringe is already used exclusively for all immunisation programmes in sub-Saharan Africa, except in South Africa and Namibia.

A public disclosure of injection risks emphasising the need for patients to insist on sterile health care seems appropriate in addition to the activities already undertaken. The 2005 Free State study's observations showed that many providers who recognised single-use and sterilisation guidelines did not adhere to them. The principles of non-maleficence (the moral duty to prevent harm) and beneficence (the moral duty to act to the benefit of a patient) require that every possible measure be taken to protect vulnerable patients, especially children, from unsafe health care.⁵ Patient-observed sterile treatment (POST) should be a public health priority. Unlimited funding from the President's Emergency Plan for AIDS Relief (PEPFAR) has been made available for outbreak investigations and injection safety interventions if an African Ministry of Health contacts the US Centers for Disease Control and Prevention for support in such an endeavour.

Disclosure and dissemination of findings play a pivotal role in infection prevention, and this review calls attention to the potential to transmit HIV in routine health care practices

observed in South Africa. Health care professionals, administrators and policy makers face a moral imperative to redress widespread lapses in adherence to the standard precautions, in light of the epidemiological evidence that unsafe health care plays a role in South Africa's HIV/AIDS epidemic. At minimum, WHO injection safety guidelines recommending the use of auto-disable syringes for immunisations should take effect, both for the protection of children and for the protection of public confidence in the safety of immunisations.

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^a **Reid S**, BS

^b **Dawad S**, MS

^c **Van Niekerk AA**, PhD

^a School of Community Health Sciences, University of Nevada, Las Vegas, United States of America

^b Health Economics and HIV/AIDS Research Division, University of KwaZulu-Natal, Durban, South Africa

^c Centre for Applied Ethics, Stellenbosch University, South Africa

Correspondence to: Savanna Reid,
e-mail: inkwell_11@yahoo.com

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