

AIDS prevention in South Africa

A perspective from other African countries

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AIDS in South Africa

Heterosexual transmission of HIV in South Africa's general population is well documented.¹⁻³ In a recent national survey of antenatal women in South Africa, 0,76% were HIV-positive.³ Although these figures are lower than those for central and east African countries,⁵ it is instructive to note that HIV was first diagnosed in Zimbabwe in 1983,⁶ yet by 1990, 16,5% of antenatal women and 40,6% of sexually transmitted disease (STD) patients tested in multisite sentinel surveillance were HIV-positive.⁷

South Africa has the advantage of facing AIDS later than east and central Africa and the disadvantage of being isolated, albeit diminishingly so, from the information and experiences of other African countries. This paper offers one perspective of prevailing themes in AIDS prevention elsewhere in Africa.

AIDS prevention elsewhere in Africa

It is argued that the following lessons from AIDS prevention in central and east Africa are germane to South Africa: (i) discontinuity between medical and other approaches has inhibited concentrated emphasis on critical points for intervention, including targeted interventions, prevention of other STD, reduction of age variation in partner selection, and conceivably promotion of male circumcision; (ii) reduction in the number of partners is a long-term rather than a short-term goal and should not be the primary proximal focus; (iii) the truism that education is our only weapon against AIDS prevention is facile and diverts attention from other important approaches, including policy revision, socio-economic reform, STD control, condom promotion and perhaps male circumcision; (iv) improved health service management is imperative; and (v) AIDS prevention necessitates the participation, indeed, partnership, of communities.

Discontinuity between medical and other approaches

Heterosexual HIV transmission is more efficient in eastern and southern Africa than in Europe,⁸ and within Africa shows considerable variability (HIV spreads, for example, faster in Ivory Coast, Malawi, Tanzania, Uganda, Zambia and Zimbabwe than in Cameroon, Congo, Gabon, Nigeria and Zaire).⁸⁻¹⁰ Epidemiological interpretations of variability in HIV transmission have focused on several factors, including: (i) sexual networking patterns; (ii) variation in age preference in partner selection; (iii) other STD; and (iv) male circumcision.

Sexual networking patterns

To sustain an HIV epidemic, each HIV-positive person

must infect at least one other person.¹¹ Without facilitating factors, the likelihood of infection per sexual episode with a positive person is low, roughly between 0,01% and 1%.¹² To produce a new infection, a positive person would have to have either 100 - 10 000 different partners or have sex with one partner 100 - 10 000 times. To explain differences between sub-Saharan Africa and the West by crude rates of partner change, rates in the former would have to be 10 - 1 000-fold greater than in the latter — which is untenable.¹¹

Abandoning crude rates of partner change, however, heterogeneity and patterns of sexual networking affect HIV dissemination.^{8,11,13} Epidemiologists distinguish two broad sexual patterns. In one, comparable numbers of men and women have a small, fluid set of concurrent or successive partners. In the other, large groups have sex with small groups, who have been described, initially with reference to gonorrhoea, as 'high-frequency transmitter core groups'.¹⁴ These vulnerable groups (as they are called here), who have large numbers of rapidly changing partners, are susceptible to STD, including HIV. Once infected, they efficiently transmit infection to their large number of partners, whose other sexual partners are then exposed to infection. Quite simply, the likelihood of exposure to an infected person is markedly higher in this pattern. In Pumwani suburb, Nairobi, Kenya, one vulnerable group, low-income prostitutes, have approximately 1 000 - 1 200 partners annually. Their susceptibility and infectivity enhanced by concurrent STD, they rapidly contract HIV infection, which they may then transmit to several partners a year.¹¹

For many reasons, including a legacy in which blacks (particularly women) in central, east and southern Africa were regarded as temporary interlopers in 'white' cities,¹⁵⁻¹⁶ rapid urbanisation, migrant labour, poverty, sexual inequality, unrest and historical neglect of STD prevention,¹³⁻¹⁸ sub-Saharan Africa has many vulnerable groups, including prostitutes, their clients, persons with STD, truckers, the military, migrant labourers, and other very mobile or transient groups. Just as vulnerable groups contribute disproportionately to HIV dissemination, so mathematical and empirical evidence demonstrates the efficacy of interventions targeting such groups. When the effects over 10 years of preventing 100 cases of STD among vulnerable groups and 100 cases among other groups are compared,¹⁹ models estimate that the former averts 8,5 - 55,5 times as many STDs as the latter (depending on the STD, selectivity and rate of partner change).

Ngugi *et al.*²⁰ compared condom use among Kenyan prostitutes who received individual counselling at clinics (group 1), group counselling at community meetings (group 2), or neither (group 3). Before the programme started, 10%, 9% and 7% of groups 1, 2 and 3, respectively, had used condoms. After activities started, 80%, 70% and 58% of groups 1, 2 and 3 reported some condom use. Rates of genital ulcer disease (GUD) and gonorrhoea were reduced and HIV infection was prevented or delayed. Tuliza *et al.*²¹ presented evidence of the impact of a clinic-based STD control and condom promotion programme among prostitutes in Kinshasa, Zaire. Over 22 months, the percentage reporting regular condom use with clients increased from 4% to 55% and annual HIV incidence declined from 18% to 2,2%.

Targeted interventions may also be cost-effective. On

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the basis of estimates of numbers of HIV-positive prostitutes, number of sexual contacts, partners' susceptibility, HIV transmissibility, degree of condom use and HIV reproductive rates, Moses *et al.*²² calculate that an intervention among about 1 000 sex workers in low-income Pumwani prevents between 6 000 and 10 000 new HIV infections per year, at a cost of US\$8 - 12 per HIV infection averted.

Interventions targeting prostitutes have been initiated in selected sites in the West²³⁻²⁸ and in Africa.²⁹⁻³³ A few projects in Africa have targeted vulnerable males, such as clients of prostitutes, the military, truckers and fishermen.^{23,35-39}

Land alienation, migrant labour, dormitory towns with environments inimical to family and community life, paucity of recreational choice, inferior education, unemployment and neglect of STD control have created many vulnerable groups in South Africa.⁴⁰⁻⁴⁴ An excess of males in cities may provide a proxy measure of prostitution and HIV susceptibility. Over and Piot¹⁹ report an association between an excess of urban males aged 20 - 39 years and urban HIV seroprevalence; South Africa's urban male/female ratio in the 20 - 39-year age range was recently 118:100.¹⁶

Targeted interventions are urgently needed in South Africa and much may be learned from other African countries, where the timing and scope of such interventions has been inadequate.⁴⁵

Mathematical models demonstrate that early interventions have proportionately far greater impact on HIV dissemination than comparable interventions introduced later in an epidemic.⁴⁵ Indeed, they suggest that, in areas with an HIV prevalence of under 5% in the general adult population (into which category South Africa still falls), effective interventions among men and women engaged in commercial sex may prevent widespread HIV dissemination in the general population.⁴⁵

Despite the need for immediate action, a review⁴⁵ of AIDSTECH-supported AIDS programmes noted that targeted interventions took up to 2 years to initiate and that obtaining bureaucratic approval, usually from national AIDS committees, frequently accounted for 90% of the time between project conception and implementation. In one east African country with a very high HIV seropositivity rate among prostitutes, it took 18 months to secure approval for an intervention among prostitutes and clients.

Concerning scope, the review⁴⁵ identified targeted interventions in 14 cities in seven African countries, reaching about 24 000 prostitutes. Yet there are over 100 cities in Africa with populations above 100 000, each requiring targeted interventions.

If South Africa is to initiate urgent, comprehensive targeted interventions, policy commitment and reform are essential. Legalisation of prostitution is a priority, for effective nationwide intervention among prostitutes can scarcely begin while prostitution remains unlawful. The public health benefits of legalising and, better still, supporting the organisation and representation of prostitutes are apparent in several Western countries.⁴⁶⁻⁵¹ In Australia, where many prostitutes belong to collective organisations, which play an advocacy role, especially on policy issues, organise training meetings, produce their own educational literature and videos, manage offices to assist and educate members and vet the condom policies of brothels, HIV transmission in commercial sex independent of intravenous drug use is extremely rare. Policy reform on prostitution is not just government's responsibility: a recent COSATU AIDS meeting dismissed a suggestion to incorporate prostitutes in the union movement without serious debate and the intra- and extraparliamentary opposition have no visible stance on this issue.

If the South African government, trade unions, extra-

parliamentary parties, advocacy groups and non-government organisations would urgently support the legalisation and organisation of prostitutes and co-ordinate interventions among prostitutes, clients, truckers, the military and other mobile or single groups, in all towns over perhaps 50 000 inhabitants, widespread HIV dissemination could still be averted.

Age preference in partner selection

The critical role of age preference in partner choice has been persuasively elucidated in mathematical models⁵²⁻⁵⁵ but largely neglected in prevention programmes. If an individual's first partner is also having sex for the first time, if that individual's next partner is having sex for the second time after a sexual debut with a virgin, and so on, heterosexual transmission of HIV would not occur. Alternatively, a fixed age difference would prevent heterosexual transmission of HIV.⁵³ These are ideal patterns, but they illustrate the opportunity for HIV transmission where men display variable age preference in partner selection, but usually select female partners 10 - 20 years younger. This pattern predominates in Africa, where HIV prevalence peaks at a younger age among women.⁵⁶

The point is, simply reducing variation in age difference between sex partners would, *in the absence of reduced numbers of partners*, markedly reduce HIV transmission.⁵⁵ Encouraging younger women to abstain from older partners must be a major thrust of programmes. Campaigns targeting 'sugar daddies' in limousines, which have appeared in several African countries, are inadequate because they only address an exotic, conspicuous layer of a widespread phenomenon. The antecedents of variation in age difference between sexual partners are partly economic, younger women forming attachments to older men for financial support, and no effective response can be limited to the provision of information or advice. Socio-economic programmes are needed to increase the proportion of females who complete high school, undertake post-secondary education or training, have jobs and receive equal pay.

Other STD

Other STD also plays a major role in potentiating HIV transmission. Ulcerative STD may increase susceptibility by damaging the genital epithelium and infectivity by causing viral shedding. Inflammatory STD may increase susceptibility by attracting CD4-positive target cells and infectivity by drawing HIV-infected monocytes. The link between concurrent STD and HIV transmission has been demonstrated in numerous cross-sectional studies, which are, however, methodologically weak,^{57,58} and in prospective designs.⁵⁹⁻⁶¹ HIV in turn facilitates other STD,^{62,63} completing a cycle of reciprocal amplification.¹¹ HIV infectivity peaks shortly after infection and when immune deficiency develops, the latter period being longer and more important.⁶⁴ HIV-positive persons with gonorrhoea may progress to symptomatic illness earlier, thus becoming more infectious to their partners — another interaction between STD and HIV infectivity.¹¹

The potential importance of STD reduction is illustrated by a recent simulation in a hypothetical African city with 1% HIV prevalence in 1990: without any reduction in other STD, prevalence would exceed 16% by 2015; a 10% decline would result in 12% seroprevalence by 2015; a 20% diminution would reduce HIV infection to below 1% by 2015.⁶⁵

There is little doubt that Africa's HIV epidemic is in considerable part the legacy of neglected STD control.^{66,67} AIDS programmes have continued to neglect other STD.^{68,69} Preoccupation with symptomatic men and inability to reach others, particularly women, is the

principal gap in STD/AIDS prevention.⁶⁹ For example, in 1989, the Bulawayo City Council, Zimbabwe's best administered municipality, treated 64 933 men and only 15 643 women (a ratio of 4,15:1) for STD,⁷⁰ a disparity common in Africa.⁶⁹ Without innovative, effective approaches, particularly among women, the resources likely to be diverted to STD prevention in Africa will be wasted. The emphasis on women is *not* accusatory, but merely a recognition that women experience fewer STD symptoms, are inured to discomfort as part of reproductive physiology, and are reluctant to visit STD centres.⁷¹

STD had become widespread in many parts of South Africa by the mid-20th century⁷²⁻⁷⁴ and they remain endemic,⁷⁵⁻⁷⁷ accentuating the need for urgent action.

Within traditional medical spheres, it is clearly important to improve: (i) diagnosis (a recent South African study reported clinical diagnostic accuracy of 22% for genital herpes, 27% for lymphogranuloma venereum, 55% for primary syphilis and 80% for chancroid;⁷⁸ (ii) treatment efficacy;⁷⁹ (iii) compliance management, either by instituting single-dose regimens or by strengthening follow-up; (iv) service providers' demeanour toward patients, particularly women; (v) STD prevention counselling at STD centres; and (vi) partner referral. An expanded infrastructure is also needed to: (i) avoid turning STD patients away; (ii) keep clinics open at hours convenient to vulnerable groups; and (iii) strengthen integration with family planning and antenatal programmes, which provide important access to women.

However, much must be done outside traditional medical spheres. Promotion of STD knowledge, suspicion regarding symptoms, genital self-examination and health-seeking behaviour among women, using newspapers, magazines, television, radio, schools, the community, church and political organisations, the workplace (South Africa has more women in employment than other African countries) and community outreach, is important. Self-administered behavioural or symptom checklists may help bring women to health centres. Epidemiological treatment for vulnerable persons, particularly for GUD, should be considered. Satellite or mobile clinics could provide treatment in informal settlements. Since transient persons are vulnerable to STD, mobile services could be offered on streets, shelters, bus and train stations. To make treatment more accessible, a controversial proposal for the selling of antibiotics, especially through the informal sector, is being considered in some African and Latin American countries.⁸⁰ Above all, as with HIV prevention, communities must be mobilised as participants, indeed partners, in STD control.⁸⁶

Circumcision

An association between an intact male foreskin and HIV seropositivity is biologically plausible.⁸¹ The preputial sac could retain vaginal fluids and provide a nurturant milieu for HIV. The larger foreskin surface, lined by vulnerable mucosal cells, may be more prone to epithelial damage. Inflammatory conditions associated with an intact foreskin may increase susceptibility by drawing CD4-positive lymphocyte target cells.⁸²

Absence of circumcision has been associated with susceptibility to many STDs, including gonorrhoea,⁸³ syphilis,⁸⁴ chancroid⁸⁵ and genital herpes.⁸⁵ It may thus potentiate HIV infection by increasing other STD. It has been identified as a risk factor for HIV in several clinical studies.^{89, 90-99} In one prospective study, the risk of seroconversion after sex with a prostitute in Nairobi, Kenya, was 8 times higher among uncircumcised men. Two ecological studies found strong associations between the geographical dispersion of circumcision and HIV seroprevalence in Africa,^{90, 91} although possible confounding factors, including date of introduction of HIV

to societies and behavioural characteristics of groups performing circumcision, were not examined.

Circumcision is currently our only irreversible intervention; any protective effect would operate continuously, and it cannot be forgotten or rejected.

Most African groups circumcise from ages 6 to 13 years.⁹¹ The argument that circumcision is too slow a strategy is spurious, as any protective effects will begin within 5 to 10 years. Moreover, just as syphilis remains a major health problem many years after it became curable, so endeavours to prevent HIV infection will endure beyond the discovery of a vaccine or cure.⁹² It is particularly apposite to consider male circumcision in South Africa, where, far from being an alien practice, it is culturally prescribed for all major groups except the Zulu.^{93, 94} However, partly because of urbanisation it is no longer consistently practised by many groups, especially the Sotho and Tswana. It is surely easier to revive familiar, culturally sanctioned practices than to impose exotic ones.

The case for male circumcision is not conclusively proven. None the less we must act on the best hypotheses to hand, and when data supporting its role are weighed beside evidence against the effectiveness of AIDS education in Africa, it is hard to argue that any other hypothesis we have is better.⁹⁵

Emphasis on critical intervention points

Discontinuity between medical and other orientations has inhibited concentrated emphasis on critical points for effective intervention. Epidemiological research — elucidating the role of sexual networking between different activity and age classes, other STD and male circumcision — has provided windows of opportunity for intervention, and while social scientists were and are right to deprecate the potentially censorious notions and phrases invoked, they were slow to focus on critical intervention implications. AIDS education has been vague, diffuse, and largely innocent of epidemiological insight. Such unfocused education may be less effective than comprehensive, targeted interventions stressing STD control, condom promotion and outreach to vulnerable groups. Few AIDS education programmes in Africa have emphasised STD knowledge, symptom suspicion, treatment-seeking behaviour or STD care or have comprehensive strategies for intensive condom promotion and distribution. How many education programmes have begun with the fundamental question — how can we eradicate STD, or as much STD as possible, among specific groups and their partners?

Biomedical personnel, for their part, while identifying critical points for intervention, have been slow to recognise how far this recognition enlarges the involvement of other disciplines, for they alone cannot mount or effectively manage integrated community-level interventions among vulnerable groups, initiate social and economic reform to help young women abstain from older partners, elevate STD control to community-wide partnerships with innovative outreach, especially among women, comprehensively promote and distribute condoms, or encourage communities to introduce or revive circumcision. AIDS prevention must become both more and less medical, by building on epidemiological insights but transforming them into rigorously managed, comprehensive community programmes.

Partner reduction as a long-term goal

Many African AIDS programmes began with exclusive or primary emphasis on reducing the number of sexual partners,⁹⁶ potentially the most effective response to AIDS.⁶⁵ Yet behavioural and STD/HIV data oppose the short-term efficacy of this approach. If the West, with its

economic and educational advantages, has observed little behaviour change outside certain cohorts of homosexual men,⁹⁷ rapid change is still less likely in Africa, assailed by poverty, drought, illiteracy, coincident epidemics, sexual inequality and unrest. The persistence of risk practices can be illustrated in many ways. In Ivory Coast, for example, in the capital of which, Abidjan, AIDS is the leading cause of adult death,⁹⁸ 53% of men in a 1989 survey reported casual/commercial sex in the past 12 months.⁹⁹ The number of STD cases treated in Zimbabwe doubled from roughly 500 000 in 1986 to over a million in 1989.¹⁰⁰ In 1988, Zimbabwe reported an 18% HIV prevalence among STD patients.¹⁰¹ In some Zimbabwean towns, 60% of STD patients are HIV-positive.⁷ HIV seroprevalence among random samples of antenatal women in Nairobi, Kenya, increased from 2.6% in 1986 to 5.5% in 1990.¹⁰² In Kampala, Uganda, 23.4% of 586 antenatal patients under age 16 were HIV-positive.¹⁰³

The case of Uganda is illustrative. It originally focused on monogamy, or 'zero grazing',¹⁰⁴ but its president, presented with spiralling HIV seroprevalence and a simulation illustrating the importance of increased condom use, changed policy in 1990 to incorporate condom promotion and distribution.¹⁰⁵ However, the attitude towards condoms in Uganda remains ambivalent and a decade of opportunity to create an infrastructure and cultural climate to support condom use has already been lost — amid surging HIV seroprevalence.

There is little reason to believe that reduction in number of partners is a more feasible short-term goal in South Africa, where centuries of adverse social engineering have created an environment inimical to family and community life.⁴⁰⁻⁴⁴ Although STDs were apparently rare or absent in South Africa before colonisation,¹⁰⁶⁻¹⁰⁸ they were endemic by the mid-20th century;⁷²⁻⁷⁷ the sea-change in sexual behaviour that evidently occurred over many years will not be reversed overnight. More fitting short-term goals, reviewed in detail elsewhere in this paper, include: (i) policy revision to permit effective response to AIDS; (ii) social and economic reform to reduce socio-economic determinants of susceptibility to HIV; (iii) STD control; and (iv) condom promotion.

Education is not our only weapon

Ironically, many AIDS commentaries present evidence that AIDS education is not working and end with resounding calls for more education. The bromide that education is our only weapon is facile and diverts attention from many other urgent priorities, briefly referred to above, that may complement education.^{109,110}

Policy reform, to equip countries to tackle AIDS, is imperative.^{111,112} In South Africa, acknowledgement that the heterosexual HIV epidemic is not due to black promiscuity but to ill-conceived social policy would have immense significance. It would help opposition groups to view casual and commercial sex not as decadence or disloyalty to traditional values, but as an inescapable effect of colonisation.⁴⁰⁻⁴⁴ Other examples from a long list of desirable policy revisions include: (i) legalisation of prostitution and homosexuality, which would enable vulnerable groups to organise and educate their members and contribute to informed policy development; (ii) laws proscribing discrimination toward HIV-positive persons, to enable them to participate effectively in AIDS prevention; (iii) recognition of informal settlements to reduce transience, promote family stability and permit provision of education and health services; (iv) discouragement of industrial development policies requiring the translocation of large male labour forces, given ecological evidence that migrant labour economies amplify STD transmission¹¹³ and case studies of the role of construction projects in spreading HIV;¹¹⁴ (v)

rationalisation of health services for optimal efficiency; and (vi) demilitarisation, since soldiers play a major role in STD epidemics.¹¹⁵⁻¹¹⁷

One policy issue, that of female inequality, merits separate comment. The role of double standards favouring male sexual licence in amplifying HIV transmission has been demonstrated mathematically.⁵²⁻⁵⁵ Female inequality is a major social cause of the HIV epidemic.¹¹⁸ Over and Piot¹⁹ present evidence of a negative association between the proportion of females enrolled in secondary education and HIV seroprevalence in Africa. Sexual inequality is expressed in many forms, including the reliance of women on older partners, or commercial sex and the inability of women in unions to insist on their partners' fidelity or even on condom use. The superior educational and employment opportunities of South African women in comparison with other African countries, offer some basis for optimism about AIDS prevention, but must be bolstered by legislation and social action to further improve the legal, educational and financial standing of women.

Two complements to education, STD control and male circumcision, have been discussed and a third, condom promotion and distribution, warrants detailed consideration. Although some argue that condoms conflict with Africa's philoprogenitive values, 'few African countries have tried to create minimum conditions for condom use',¹¹⁹ and indeed striking successes have resulted where condoms have been promoted intensively.¹²⁰ Interventions for vulnerable groups have achieved singular increases in condom use.²⁸⁻³⁴ A social marketing programme in Zaire increased condom sales from 1 million in 1986 to more than 8 million in 1990^{121,122} and another in Cameroon reached the same per capita distribution within 1 year.¹²¹ The number of condoms donated to STD/AIDS control in developing countries, primarily in Africa, rose from 5 million in 1987 to 220 million in 1990.¹²⁰

The importance of increasing condom use is illustrated by a simulation in a hypothetical African city with 1% HIV prevalence in 1990; if condom use by 1995 remained at, say, 0.4% per adult, prevalence would exceed 16% by 2015; 10% use by 1995 would result in 8% prevalence in 2015; 25% use by 1995 would reduce HIV infection to 0.6% by 2015.⁶⁵

In order to increase condom use, South Africa should enlist government, private sector and donors to: (i) ensure adequate provision of economical, high-quality condoms; (ii) increase condom standards and quality-control tests; (iii) eliminate tariffs and taxes on condoms; (iv) remove legal barriers to condom advertisements; (v) enlist advertising professionals to promote a positive image of condom use as part of a confident, fulfilling lifestyle; (vi) utilise private sector managerial, logistic and promotional expertise; (vii) provide both commercial and free condoms for different market sectors; (viii) support multifaceted condom distribution through STD, maternal and child health, family planning and other health centres, pharmacies, markets, workplaces, hotels/bars, community-based distribution programmes and community/peer educators; and (ix) promote a culture of condom acceptance, including familiarity with the physical and interpersonal skills of condom use.¹¹⁷ The success of the tobacco and alcohol industry in marketing injurious products offers a macabre but powerful promotional model (and, parenthetically, illustrates the distinction between education and promotion, for who would call cigarette advertisements smoking education?).

In much of Africa, condoms have been distributed through family planning centres, supposedly for couples to use for birth control. Without decrying condom use in stable relationships, condom use in commercial/casual relations will have more impact on HIV transmission. Social marketing programmes have the advantage

not only of attracting many consumers, but of attracting many of the 'most appropriate' consumers. Consumer intercept research in Zaire indicated that about 9 out of 10 socially marketed condoms were bought by men, the majority of whom intended to use them with commercial/casual partners.¹²⁰⁻¹²² Given the preponderance of male consumers, however, social marketing programmes must be combined with extensive community outreach and condom provision to prostitutes and other vulnerable women.

Improved health service management

Health service management is perhaps the most neglected aspect of AIDS prevention in Africa, where managerial expertise is often scarcer than medical competence and the challenge of providing an efficient, reliable service must precede theoretical niceties. South Africa has considerable managerial skills, but the fragmentation of health and other public services clearly hinders an optimally co-ordinated response to AIDS.⁴⁰

In defining the overarching goal of intervention management, it is helpful to focus on provision of a comprehensive infrastructure for AIDS prevention, including: (i) improved STD control; (ii) intensified promotion of sexual and reproductive health among women; (iii) ubiquitous condom promotion and distribution, especially in risk situations; (iv) development of community structures to modify norms; (v) instillation of AIDS themes in popular culture; (vi) PWA (person/people with AIDS) support activities to bolster risk reduction among people with HIV; and (vii) convenient access to education, counselling and testing.¹¹⁰⁻¹¹²

Participatory evaluation¹⁰⁶ has yielded possible programmatic lessons for targeted interventions, which may be summarised as follows: (i) naturalistic research, planned and conducted with the active involvement of recipient communities and interwoven where possible into dynamic, responsive, ongoing interventions, yields more salient programmatic information than knowledge-attitude-practice (KAP) survey research; (ii) strategic planning, based on mapping, geographical and social network analysis, is needed to ensure coverage; (iii) effective management of outreach activities, particularly repeated follow-up, is critical; (iv) at least one full-time outreach co-ordinator is essential, as the established duties of full-time staff seldom dwindle and responsibility for project success is too diffused for accountability; (v) peer health education can be an effective, economical method of outreach and community education; (vi) participants involved as peer educators are motivated to reduce personal risk — however, peer educator training must be intensive, practical, field-orientated and job-related, with frequent reinforcement and field supervision, and the milieu in which peer health educators work, whether health centres, workplaces or communities, must be structured to permit and reinforce expression of their training; (vii) programmes must be a partnership between implementers and participants, characterised by respectful treatment, interactive approaches, responsiveness and commitment to ensuring that funds reach communities directly; (viii) programmes must foster the development of applied intervention theory by identifying effective components and strategies to be promoted in large-scale programmes; and (ix) the success of targeted interventions lies in the provision of a comprehensive, co-ordinated approach to community outreach and mobilisation, STD control and condom promotion.¹²¹

From January 1990 to March 1991, an intervention based on these precepts in Bulawayo (population 700 000) recruited and trained 80 peer health educators to reach prostitutes and the general public, provided free anonymous STD treatment to large numbers of men

and women, distributed 1,51 million condoms, and held 2 732 public AIDS meetings, attended (including repeats) by 236 533 men and 52 974 women. By crude estimation (excluding condoms and opportunity costs), this averages US\$10,98 per meeting, 10,36 cents per attendee and 1,99 cents per condom distributed. In a post-intervention survey, 96% of prostitutes and 69% of clients had received condoms from the project. The reported rate of condom use in the last paid sex act increased from 18% to 84% among sex workers and from 40% to 59% among clients. These data suggest that with effective management, targeted interventions can reach both vulnerable groups and the larger public and support the coverage, impact and cost-effectiveness of this approach.¹²¹

AIDS prevention as a partnership with communities

Several reviews note that AIDS prevention programmes necessitate the participation, indeed partnership, of communities.^{111,112}

Social diffusion theory¹⁰⁸ provides a foundation for community mobilisation. Rogers (quoted by Bye)¹⁰⁸ defines social change as 'communication of innovative ideas or practices through certain channels over time among members of a social system.' He further argues that 'Most individuals evaluate an innovation not on the basis of scientific research . . . but on basis of subjective evaluations of near peers who have already adopted the system. These peers serve as models whose behaviour is imitated by others in the social system. Thus, imitation and social modelling are essential elements in the diffusion process.'⁷

Social diffusion theory asserts that interpersonal communication is most effective in changing behaviour. Bye¹⁰⁸ thus argues that AIDS interventions may hasten behaviour change by encouraging large numbers of vulnerable individuals to communicate with each other about AIDS.

As further evidence of the efficacy of small-group communication in modifying attitudes and behaviours, Bye¹⁰⁸ cites the seminal work of Lewin, who found small group discussions, coupled with public affirmations of commitment to behaviour change, to be a more effective agent of change than either lectures or individual counselling. Small groups have since been used to facilitate social change in numerous settings, including hospitals, the uniformed services, substance abuse programmes and, recently, STD clinics, where they were found to be 65% more effective than health education lectures in preventing reinfection among patients.¹²³

The challenge for AIDS prevention programmes is thus to help organise and manage social diffusion, by mobilising communities around the issue of AIDS, involving other community organisations, seeding peer/community health educators into as many social networks as possible and utilising all possible informal channels, including bars, street corners, workplaces, markets, community meeting places, sporting activities and bus/train stations.

Conclusion

This paper is admittedly informed by pessimism over AIDS education, but this pessimism need not extend to AIDS prevention. There is much to complement education, including: (i) policy revision to ensure total, unwavering support for AIDS prevention; (ii) socio-economic reform to ameliorate the social determinants of HIV infection; (iii) action to improve the position of women; (iv) multifaceted interventions to reduce variation in age difference between sex partners; (v) innovative, community-level STD control programmes that encompass

women and aspire to no less than the eradication of STD, especially GUD; (vi) ubiquitous condom promotion and distribution, especially to men and women involved in commercial/casual sex; (vii) an extensive infrastructure to support AIDS prevention; (viii) improved health service management; (ix) swift, comprehensive targeted interventions for vulnerable groups, co-ordinating STD control, condom promotion and community mobilisation; and (x) serious consideration of male circumcision as a protective measure.

It cannot be said often enough: we have many of the social and biological insights needed to control HIV. In many countries, the opportunity to transform this knowledge into timeous, comprehensive policy and programmes has already been lost. What is needed is total commitment, sweeping policy reform and extensive programmes, not fragmented, descriptive studies or small-scale projects innocent of epidemiological insight. As Potts *et al.*⁴⁵ note: 'In the next few years, it is unlikely that any new knowledge will emerge to change our understanding of how best to control HIV. Moreover, knowledge that has been available for 5 - 6 years is still not being fully applied to policy setting and programme design.'

This is the paramount lesson for South Africa: before all else, we must truly apply what we already know. No group dare allow the constitutional agenda to eclipse AIDS — thus adding South Africa to those countries who have lost opportunities that will never return.

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