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Back round Materials on HIV AIDS in Africa
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Materials
The following articles are enclosed:
Bongaarts, J., Reining, P., Way, P. & Conant, F. (1989). The relationship between male circumcision and HIV infection in African populations. AIDS, 3, 373-377.
Larson, A. (1989). Social context of HIV transmission in Africa: Historical and cultural bases of East and Central Africa sex relations. Review of Infectious Diseases, 1 1, 716-731.
Moses, 8., Plummer, F.A., Ngugi, E.N., Nagelkerke, N., Anzala, A. & Ndinya-Achola, J. (1991). Controlling HIV in Africa: Effectiveness and cost of an intervention in a high- frequency ST D transmitter core group. AIDS, 5,407 -41 1.
Ngugi, E.N., Plummer, F.A., Simonsen, J.N., Cameron, D.W., Bosire M., Waiyaki, P. et a1. (1988). Prevention of Human Immunodeficiency Virus in Africa: Effectiveness of condom

promotion and health education among prostitutes, Lancet, 2, 887-890.
Piot, P & Laga, M. (1989). Genital ulcers, other sexually transmitted diseases, and the sexual transmission of HIV. British Medical Journal, 298,623-624.
Piot, P. Laga, M., Ryder, R., Perriens, J., Temmerman, M., Heyward, W., & Curran, J. (1990). The global epidemiology of HIV infection: continuity, heterogeneity, and change. J ournal of Acguired Immune Deficiency Smdrome, 3, 403-412.
Plummer, F.A., Nagelkerke, N.J.D., Moses, 8. & Ngugi, E. (1991). The role of core groups in maintaining heterosexual HIV . epidemics: A micro-simulation. Paper presented at the Seventh International Conference on AIDS, Florence, Italy, 16-21 June.
Ronald, A.R., Ndinya-Achola, J .O., Plummer, F.A., Simonsen, M.D., Cameron, D.W., Ngugi E.N. et a1. (1988). A review of HIV- 1 in

Africa. New York Academy of Medicine Bulletin, 64. 480-489.
Wilson, D., Armstrong, M. & Lavelle, S. (in press) HIV/AIDS in Africa. AIDS CARE, in press.
Wilson, D., Nyathi, B., Nhariwa, M., Lamson, N. & Weir, S. (submitted). A community-level AIDS prevention programme among sexually vulnerable groups and the general population in Bulawayo, Zimbabwe.
Wilson Carswell, J . (1988). The impact of AIDS in the developing world. British Medical Journal, 44, 181-202.
Zimbabwe Ministry of Health. (1991). HIV Sentinel Surveillance 1990 Rep rt. National AIDS Control Programme and Health Information Unit, Minisz of Health, Harare, Zimbabwe.
Introduction
The materials are organized in the following areas:

(a) Broad overview
(b) Prevalence and impact of HIV
(c) Social context of HIV in Africa
(d) Factors facilitating HIV transmission
(e) Role of other STD in HIV transmission
(f) Role of "core" groups in HIV transmission
(g) Role of circumcision in HIV transmission
(h) Prevention approaches

Broad Overview

Piot, Laga, Ryder et a1. and Ronald et a1. provide comprehensive overview, introducing many of the themes later examined in articles With

narrower focus, including the role of other STD and core groups in HIV transmission.

Prevalence and impact of HIV

Numerous prevalence studies have been conducted, but the Zimbabwean Ministry of Health,s 1990 sentinel surveillance report is perhaps most relevant to South Africa. AIDS was Virtually absent in Zimbabwe in the early 19805: by 1990, over 50% of STD patients and 18% of antenatal patients in Harare were HIV-I-. In Masvingo, which lies on Zimbabwets main road route to South Africa, the figures are even higher: nearly 60% of STD patients and over 30% of pregnant women were HIV-i-.

One view of the socio-economic costs is presented by Dr Wilson Carswell, a surgeon who worked in Kampalafs Mulago Hospital for many years, currently working for South Africats AIDS Control Programme in Pretoria (tel 3255 100).

Social context of HIV transmission in Africa

It is scarcely necessary to state that the root causes of the AIDS epidemic are social and lie in the colonial disruption of African values, migrant labour and the destruction of family and community-life, the poverty of housing and recreational life in black areas, and educational and medical neglect. However, the precise ways in which social forces underpin the AIDS epidemic is illustrated in three papers. Hunt reviews evidence linking migrant labour to AIDS dissemination. Larson examines how the character of African cities before and after independence affect HIV and J ochelson et al. of Witwatersrand Universityis Sociology of Work programme present a rich account of the role of migrant labour in the HIV epidemic in South Africa.

Factors that amplify HIV transmission

. The most urgent question to be addressed by epidemiological and social research is Why HIV is spreading at disparate rates in different places. Why is heterosexual transmission more common and efficient in developing countries? Why is HIV apparently spreading faster in some African countries, including Uganda, Tanzania, Malawi, Zambia, Zimbabwe and Cote d’Voire, than in others, including Zaire, Congo,

Gabon. Cameroon and Nigeria? For example. the HIV seroprevalence of 3.26% among STD patients in Yaounde, Cameroon is far lower than that in most eastern and southern African cities. More strikingly still. the contiguous copperbearing areas of Zambiats Northern Province and Zairets Shaba Province share a common economic base and agricultural capacity and have ethnic/linguistic similarities. Yet HIV infection in Zambiats Northem Province is seemingly markedly higher than in Zaire’s adjoining Shaba province. Wilson, Armstrong and Lavelle et a1 present a simple, brief review that highlights issues developed more thoroughly in ensuing articles. They focus on the role of (a) other STD (b) "core" groups and (0) male circumcision.

Previous research on factors that amplify HIV transmission focused largely on (a) patterns of sexual behaviour, particularly the role of "core" groups, hereafter called vulnerable groups (b) other STD, especially genital ulcer disease, and (c) absence of circumcision.

Role of other STD in HIV transmission

The importance of other STD in amplifying HIV susceptibility and

infectivity is uncontroversial. The biological mechanism is plausible. Ulcerative STD may increase susceptibility by damaging the genital epithelium and infectivity by causing Viral shedding. STD which provoke inflammation may increase susceptibility by attracting CD44- lymphocyte target cells and infectivity by drawing HIV-infected monocytes. HIV in turn facilitate other STD, completing a cycle of reciprocal amplification. The link between other STD and HIV has been demonstrated empirically in numerous cross-sectional studies and in at least two prospective ones. Piot and Laga review evidence for the role of STD and two broad papers cited earlier, Piot, Ryder. Laga et a1. and Ronald et al. also examine this issue.

An important problem to be highlighted is the failure of STD programmes to reach women. In Zimbabwe, approximately the ration of men to women at STD centres approaches 5: 1. Women experience fewer symptoms, are inured to tolerate discomfort as part of reproduction and may be treated disparagingly if they attend STD clinics. Without innovative, effective approaches to STD control among women, the . resources likely to be devoted to STD control in Africa will be wasted. Several approaches deserve consideration. These, in order of ascending

controversy, include improvements in compliance management and partner notification, promotion of greater STD awareness and treatment seeking behaviour, particularly among women, selective mass treatment of vulnerable groups of men and women and social marketing of antibiotics.

If, on the other hand. STD can be reduced. this, INDEPENDENT OF ANY CHANGES IN SEXUAL BEHAVIOUR, would greatly reduce HIV incidence.

Role of "core" groups in HIV transmission

Researchers seeking to explain why heterosexual transmission of HIV is apparently more common and efficient in Sub-Saharan Africa have focused increasingly on patterns of sexual networking, particularly the role of "core" groups, henceforth called vulnerable groups, Epidemiologists distinguish two distinct patterns of sexual networking. In one pattern, a large group have sex with a small group. In the other, approximately equal numbers of men and women have a small but fluid

set of sexual partners. either concurrently or in succession. The former pattern is likely to result in greater exposure to infected individuals and hence in faster HIV dissemination. Vulnerable groups, who have been studied in relation to gonhorrea, are at elevated risk for HIV acquisition and transmission.

In a paper presented here, Plummer et a1. simulated the role of one vulnerable group, sex workers. Their micro-simulation involved 1000 HIV- men and 1000 HIV- women and several HIV-l- prostitutes. Inputs were: 30% monogamy among couples; 40% of general population change partners once every two years and visit partners 1-4 times a year and 1 30% change partners once a year and visit prostitutes 4-7 times a year; 0.5% probability of HIV infection in one contact with an HIV-i- prostitute; female-male and male-female infection rates of 0.2 and 0.25; and HIV4- individuals die exponentially at an annual rate of 20%. Without any intervention, HIV seroprevalence reached 11% in seven years. With an intervention emphasizing condom promotion and STD control, HIV seroprevalence was interrupted. This simulation attests to the role of one vulnerable group an HIV epidemic and to the efficacy of interventions in such groups.

Empirical evidence shows that interventions among sex workers can increase condom use. Ngugi et a1. examined condom use among sex workers 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 before. After activities started, 80%, 70% and 58% of groups 1,2 and 3 reported some condom use.

Interventions among vulnerable groups may be cost-effective. Using conservative data for number of sexual contacts, partners? susceptibility, HIV transmissibility, degree of condom use and HIV reproductive rates, Moses et a1. estimate that an intervention among about 1000 sex workers in Pumwani, a low-income area in Nairobi, Kenya, prevents between 6000 and 10 000 new HIV infections per year, at a cost of 8-10 US$ per HIV infection averted.

Although several pilot programmes with sex workers have begun in Africa and elsewhere. it will be hard to expand them into nationwide programmes While sex work remains illegal and stigmatized. And conversely, countries such as Australia and the Scandinavian nations

illustrate how much can be accomplished when such groups are recognized and given resources to work with. Condom use is almost uniform among sex workers in these countries and HIV transmission independent of drug use is extremely rare. Policy reform and the legalization of sex work and would be give immense impetus to HIV prevention in South Africa. If this recommendation seems to conilict with traditional values, the point to emphasize is that a culture of commercial sex is an inescapable, and in the foreseeable future, irreversible, consequence of apartheid.

Role of circumcision in HIV transmission

The role of circumcision in HIV prevention is speculative, but potentially enormously important. An association between absence of male circumcision and HIV seropositivity is biologically plausible. The foreskin sac provides a warm, moist environment in which HIV may survive longer and offers potential portals for HIV entry. Bongaarts et a1. present ecological evidence of an association between absence of male circumcision and HIV seropositivity. Wilson et a1. cite a Ugandan study by HellmaIm et a1., in which an intact foreskin conferred a 5.9-fold

increased likelihood of seroconversion.

The reason that circumcision may be so important in South Africa is that. with the exception of the Zulu, it remains a part of traditional culture, albeit one that has decreased as a result of urbanization. It is surely more feasible to revive culturally sanctioned practices, than to try to impose culturally alien ones, for example, non-penetrative sex. While this remains speculative, when evidence for its role is weighed beside evidence against the efficacy of health education in Africa, it is hard to argue we have better hypotheses.

Prevention approaches

A prevention programme mounted by the Bulawayo City Council is described by Wilson, Nyathi, Nhariwa et a1. Its objective is to combine a targetted intervention for high risk groups with community-wide outreach to the general population. It presents an integrated approach, consisting of the following components: (a) intensive interpersonal AIDS education through the recruitment, training and support of community "peer" educators (b) widespread, reliable condom dissemination,

especially through social networks and (0) improved STD awareness, treatment seeking behaviour, diagnosis and treatment. In Bulawayo, from 1/90 to 3/91, 80 peer educators were recruited, 1,51 million condoms were distributed and 2732 AIDS meetings were held, 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 sex workers and 69% of clients had received condoms from the project. Reported condom use in the last paid sex act increased from 18-84% among sex workers and from 40-59% among clients. Participatory evaluation of this proj ect and three replications yielded the following programmatic lessons that may assist further replications: Strategic planning, based on mapping, geographic and social network analysis. is needed to ensure coverage; management, particularly of repeated follow-up, is critical; peer educator training must be practical, fleld-orientated, job-related and frequently reinforced; programmes must be a partnership between implementers and participants, characterized by respectful treatment, interactive approaches, responsivity and commitment to ensuring funds reach communities directly; and programmes must foster theory-based

intervention by identifying effective components to be promoted in large-scale programmes.

Conclusions

It is often said that "education is our only weapon against AIDS". This is not true. There are other important approaches to AIDS prevention. Policy reform is critical. Priorities include removing legal barriers to AIDS prevention, including laws that promote sexual inequality, that restrict condom promotion, or present obstacles to AIDS prevention among certain groups, including sex workers and men Who have sex With men. Mass condom promotion and distribution is important, as is eradication of other STD, particularly among women. Revival of infant circumcision may play an important role in preventing future HIV infections.

This is not to decry the importance of education, but AIDS education should be one pillar of an integrated response, involving policy reform, mass condom promotion and STD control. Within this frame, the focus . of education must be community mobilization and participation, not dry, hierarchical recital of facts.

AIDS prevention must be both more and less medical. Epidemiological research, elucidating the role of vulnerable groups, other STD and 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. Interventions to protect vulnerable groups and their partners and to eradicate STD through community intervention, are likely to have been more effective against HIV transmission than the vague, diffuse responses. largely oblivious of epidemiological insights, that occurred. Recognition of co-factors such as vulnerable groups, other STD and circumcision enlarges, rather than diminishes, the role of social science, for medical practitioners alone cannot mount community programmes to reach vulnerable groups, people With STD, especially women or persuade communities to introduce or revive circumcision.