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REPORT OF THE CONSULTATION ON
PARTNER NOTIFICATION FOR PREVENTING
HIV TRANSMISSION

GENEVA
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1. INTRODUCTION

The WHO global strategy for the prevention and control of AIDS has three objectives: (1) to prevent HIV transmission; (2) to reduce the personal and social impact of HIV infection; and (3) to unify national and international efforts against AIDS. The World Health Assembly and the United Nations General Assembly have called upon all countries to establish national AIDS prevention and control programmes in conformity with the Global AIDS Strategy.

The Global AIDS Strategy stresses that information and education, linked with the relevant health and social services and carried out in a supportive and nondiscriminatory social environment, are the key to preventing HIV infection. The Strategy calls for information and education programmes for the general population as well as for target audiences, including persons whose behaviour places them at increased risk of exposure to HIV. In addition, the Global AIDS Strategy emphasizes the need to protect the rights and dignity of HIV-infected persons.

During the past year increasing interest has been expressed by many countries in the notification of partners as a method of aiming information at those at highest risk of HIV infection, i.e., sexual partners of persons with HIV infection and partners sharing injection equipment. Partner notification is similar to "contact tracing", which can be defined as the identification, counselling, and treatment of the sexual partners of persons with sexually transmitted diseases (STD) as a component of an STD control programme. However, HIV infection differs in important ways from other STD.

To examine the role of partner notification in the prevention of HIV infection, a three-day consultation was convened in Geneva from 11 to 13 January 1989 by the WHO Global Programme on AIDS (GPA) and the Sexually Transmitted Disease Programme (VDT). A total of 27 individuals from 20 countries participated in the consultation, including experts in public health, epidemiology, and the biomedical and social aspects of AIDS and STD.

The consultation had the following objectives:

- (1) to review experience of partner notification in HIV prevention programmes, with emphasis on the different objectives, methods, and measures of efficacy employed;
- (2) to review and assess the available data on the costs and benefits of partner notification programmes, taking into account the social, legal, political, and ethical issues involved;
- (3) to reach a consensus on the potential role and value of partner notification as part of a comprehensive AIDS prevention and control programme and to develop a list of points to consider prior to establishing an HIV partner notification programme.

Additional issues that should be discussed before considering any HIV testing or screening programme have also been defined by GPA¹.

Dr J. Mann, Director, GPA, and Dr G. Torrigiani, Director, Division of Communicable Diseases, introduced the meeting and welcomed the participants. Dr N. Clumeck (Belgium) chaired the meeting, and Dr G. Rutherford (USA) acted as rapporteur.

¹Screening and testing in AIDS prevention and control programmes. WHO unpublished document WHO/SPA/INF/88.1.

The consultation was divided into three parts. Firstly, the experience of 12 countries with partner notification was reviewed and other key issues discussed. Secondly, three working groups considered specific issues regarding partner notification: objectives and principles with Dr J. Gallwey (United Kingdom) as chairman and Dr D. Bradford (Australia) as rapporteur; key variables and methods with Dr I. Blanca-Campos (Chile) as chairman and Dr M. Rekart (Canada) as rapporteur; and evaluation, research needs, and recommendations with Dr A. Ndikuyeze (Rwanda) as chairman and Dr J. Osborn (USA) as rapporteur. On the third day all the participants discussed and approved a consensus statement.

2. CONCLUSIONS AND RECOMMENDATIONS

Partner notification has been an important public health strategy in many STD control programmes for many years. With the advent of tests to detect HIV infection, partner notification became possible for the purpose of directing education to sexual and partners of HIV-infected individuals and those sharing injection equipment. Partner notification programmes have been implemented by some countries as part of comprehensive AIDS prevention and control programmes, but the role of partner notification in a prevention and control programme and its implementation remain unclear.

The participants at the consultation concluded that:

"Partner notification programmes should be considered, but within the context of a comprehensive AIDS prevention and control programme. However, partner notification raises serious medical, logistical, social, legal and ethical issues. Partner notification has potential benefits and risks, including the potential to help prevent HIV transmission and reduce the morbidity and mortality of HIV infection but also the potential to produce individual and social harm and detract from other AIDS prevention and control activities. In addition, the costs and contribution of partner notification programmes to AIDS prevention and control objectives in a given population and area may vary considerably and are difficult to document. Therefore, in the context of a comprehensive AIDS prevention and control programme, the objectives and underlying principles of partner notification, as well as a series of key variables and critical methodological issues, must be carefully and explicitly considered before deciding whether or not to implement partner notification. Partner notification programmes which fail to take these issues into consideration may be individually harmful and counterproductive to AIDS prevention and control."

The most important outcome of the consultation was the recommendation that national AIDS programmes should consider the implementation of partner notification activities within the context of a comprehensive AIDS prevention and control programme. While partner notification can be of benefit in some situations, the decision to include a partner notification programme in AIDS prevention and control activities should be made only after careful consideration of a number of questions and variable factors.

The consultation recommended that WHO should:

- (a) provide technical support to those national AIDS prevention and control programmes wishing to consider the advantages and disadvantages of undertaking partner notification programmes;
- (b) provide technical support, including training materials and guidelines, to national AIDS programmes which undertake partner notification activities;
- (c) develop uniform standards and instruments for describing, comparing and evaluating partner notification programmes;

- (d) explore the feasibility of designing and implementing controlled intervention trials to evaluate the role of partner notification to decrease HIV transmission;
- (e) facilitate exchange of information on the design, implementation, monitoring and evaluation of partner notification activities as part of comprehensive AIDS prevention and control programmes;
- (f) critically examine the experience of partner notification with comprehensive STD control programmes and its potential contribution to STD and AIDS prevention and control.

3. PARTNER NOTIFICATION FOR PREVENTING HIV INFECTION

3.1 Introduction

3.1.1 Definitions

For the purpose of the consultation, the following working definitions were adopted:

Partner notification: that public health activity in which sexual partners of individuals with HIV infection and those sharing injection equipment are notified, counselled about their exposure, and offered services. Partner notification consists of two general approaches: patient (index person) referral; and provider referral.

Patient (index person) referral: the approach by which HIV-infected persons are encouraged to notify partners of their possible exposure to HIV, without the direct involvement of health care providers. In this approach the health care provider counsels the HIV-infected person with regard to the information to be passed on to their partners and ways of doing it.

Provider referral: the approach by which health care providers or other health workers notify an HIV-infected person's partners. In this approach HIV-infected persons give their partners' names to health care providers or other health workers, who then confidentially notify the partners directly. This notification can be undertaken in the context of primary health care and may involve the index person as well as the health care provider or other health worker.

Index person: the person recognized as having HIV infection or AIDS. The index person's sexual partners and partners sharing injection equipment are those considered for partner notification.

Period of infectiousness: the period during which there is a risk of transmission, that is, the time since HIV infection.

Partner: an individual who has had sexual intercourse or shared injection equipment with an index person during the period of infectiousness.

3.1.2 Sexually transmitted disease control programmes and partner notification

Historically, partner tracing (partner notification) in STD control programmes has consisted of identification and notification of partners either by the patient or by the health care provider. It has now expanded to include counselling which is designed to change the partner's behaviour. Two types of partner tracing have been utilized. The first is formal contact tracing (defined in this report as provider referral), which is carried out entirely by trained staff and is designed to discover source contacts and

identify secondary contacts from the source rather than from the index patient. While this method is felt to have been a powerful tool in decreasing STD transmission, it has not been directly evaluated. It calls for accurate diagnosis, it raises issues of confidentiality, it costs a great deal, and it depends on a short and definable incubation period. The success of formal contact tracing has been primarily with steady sexual partners of infected individuals. On the other hand, simplified partner tracing (defined in this report as patient referral), is carried out by the index patient, who locates and ensures examination of his or her sexual partners. Partner tracing (partner notification) has two roles: individual case management by avoiding reinfection, and disease control. The use of formal contact tracing has been primarily used for syphilis and penicillinase-producing *Neisseria gonorrhoeae*.

3.1.3 Epidemiology of AIDS and HIV: global overview

As of January 1989 about 130 000 cases of AIDS had been reported to WHO. The distribution of these cases and data from seroprevalence surveys suggest three patterns of HIV infection:

Pattern I. High-incidence areas with transmission primarily by homosexual and bisexual men and intravenous drug users (Western industrialized nations)

Pattern II. High-incidence areas with transmission primarily by heterosexual men and women (sub-Saharan Africa, Caribbean area)

Pattern III. Low-incidence areas (Asia, North Africa, Middle East, Pacific, Eastern Europe)

Latin America appears to be changing from Pattern I to Pattern II.

Models have been developed by GPA to estimate current numbers of persons with AIDS and HIV infection and to estimate the numbers of persons with AIDS in 1991 (Table 1).

Table 1
Reported and estimated AIDS cases, 1988 and 1991,
and estimated HIV infections, 1988^a

Area	Reported	AIDS cases		% Reported	Estimated HIV infection millions
		Estimated (1988)	Estimated (1991)		
Africa	20 905	200 000	575 000	10.5	2.5
America	93 723	150 000	425 000	62.5	2.0
Asia	285	500	5 000	57.3	0.05
Europe	16 683	25 000	100 000	67.5	0.5
Oceania	1 180	1 500	6 000	78.7	0.03
Total	132 976	377 000	1 111 000	35.3	5.08

^a Source: WHO/GPA

3.2 Experience with partner notification in the prevention of HIV infection

3.2.1 Belgium

Belgium has no partner notification policy for HIV infection, but partner notification has been utilized at a university hospital with a large population of AIDS patients. The objective is to inform persons who may not know they are at risk of HIV infection about their exposure. The target is mainly men and women who have been exposed heterosexually and who do not use drugs intravenously. Action is voluntary and strictly confidential; patient referral is encouraged, but, if patients desire provider referral is available, using a social worker. Partners when contacted by the social worker are offered information, counselling, education regarding risk reduction, and testing.

Since 1986, out of 289 eligible patients 105 (36%) have been enrolled and 45 (43%) of these have been assessed for HIV infection. Fifty-two per cent of eligible patients refused, and 38% named sex partners outside Belgium. Of the 45 index persons, 35 were European and 10 African; 27 (60%) were married. The index persons named 92 heterosexual partners (an average of 3 to 4 partners per index patient over the past 2 to 3 years; a range of 1 to 350). Of the 92 partners, 27 were married to index persons of whom 16 (59%) were seropositive; 13 were unmarried regular sexual partners of index persons of whom 5 (38%) were seropositive; and 52 were occasional partners of index persons of whom 15 (29%) were seropositive. The utility of partner notification was demonstrated in a cluster investigation involving one man and his 17 female partners. Ten of these women, including 7 who had previously been undiagnosed, and 1 of 10 male partners of these women were found to be seropositive.

3.2.2 Botswana

Botswana has recently begun partner notification for HIV infection, the objective being to prevent further transmission of HIV. The programme stresses confidentiality and anonymity and confines the names of index persons and partners to health department personnel. The index persons in this programme are AIDS patients and HIV-infected blood donors identified through blood donor screening programmes; the provider notification approach is used, the district medical officer doing the notification and counselling. Partners from the previous three years are sought. The major problems are discrimination against HIV-infected individuals identified through the programme and the willingness of index persons to name extramarital partners for follow-up but not their spouses. No data are as yet available.

3.2.3 Canada

Historically, Canada has generally used provider referral for syphilis and gonorrhoea and patient referral for other STD. In general, provinces where HIV infection is reportable by name use provider referral, while provinces without HIV reporting by name use patient referral. The Canadian National AIDS Advisory Committee has recommended patient referral, with provider referral through health departments on request. Potential problems that are recognized are: the lack of conclusive data on the effectiveness of provider referral as compared with patient referral; political unacceptability; the weakening of ongoing counselling and testing activities; lack of therapy; and, with most testing done through physicians, their lack of counselling skills. In British Columbia positive results of HIV tests are returned to providers with a form on which patients who do not wish to notify their partners themselves can list the names of their contacts and then submit it to the provincial STD programme for follow-up. Special situations in which this approach is encouraged are where partners are women of childbearing age. Out of approximately 50 forms mailed each month, two to three are returned. This programme is accepted and has not affected counselling and testing activities adversely. During the 18 months of operation 1100 HIV-positive individuals have returned 53 forms naming 75 partners. Of these 75 partners 69 have been located and counselled. Two-thirds of the partners were male and one-third female; 25%

were homosexual men, 25% bisexual men, and 50% heterosexual men and women. Of the 70% who knew they had a risk of infection, 60% had been previously tested; 30% knew they had a risk of infection but did not suspect it; and 15% had no knowledge of their exposure.

3.2.4 Costa Rica

Two campaigns in favour of partner notification for HIV infection are being carried out in Costa Rica, one through the Ministry of Health's STD programme, the other through a university-based cohort study of homosexual and bisexual men. In the Ministry of Health programme the index persons include reported AIDS cases, STD patients, prisoners, blood donors, prostitutes found to be HIV-infected through screening programmes, and seropositive partners identified through the programme. These index persons are interviewed by a social worker who confidentially notifies and counsels the sexual partners they name, giving priority to index patients who are married or live with a partner. Approximately 40 chains of transmission have been investigated and 200 HIV-infected partners identified, who in turn have identified 1500 further contacts of whom about one-third have been investigated. The cost of these investigations has been approximately US\$ 50 per partner notified. Within the cohort study, HIV-infected homosexual and bisexual men are asked to encourage their partners to undergo anonymous counselling and testing.

3.2.5 Cuba

In Cuba partner notification is an important component of the national AIDS programme, provider referral being carried out by nurses working through the national STD control programme. Index persons are identified through national screening programmes which have identified 268 seropositive individuals out of 3 426 321 tested since 1986. Located partners of infected individuals are educated, tested and, if found to be negative, followed up quarterly for a year to rule out late seroconversion. Spouses are followed indefinitely. In three years 1317 sexual partners have been identified and 1052 (80%) examined. Of these 1052, 755 were heterosexual (594 women and 161 men) and 562 homosexual or bisexual men. Ninety-nine infected partners have been identified, including 6 women and 31 men who were partners of homosexual or bisexual men and 53 women and 9 men who were partners of heterosexuals. The average number of sexual partners of seropositive homosexual and bisexual men was 9.0 and of seropositive heterosexual men and women 3.7.

3.2.6 Japan

Partner notification is not commonly practised in Japan. A newly passed law requires a physician who diagnoses HIV infection to give the patient "necessary instructions", on healthy living and safer sex, for example. It does not require the notification of partners, but it requires the physician to report the case to the prefectural governor. In effect, a physician is expected to tell his or her patients to encourage their partners to have HIV tests. The Japanese Government is at the same time developing a network of hospitals and clinics that people are free to go to for anonymous tests. In exceptional cases, when a physician learns that a person whom he suspects of transmitting HIV infection to other people, he can notify the fact, the person's name, and other details to the prefectural governor, who then contacts the person.

3.2.7 Norway

The Oslo Board of Health has been using partner notification as part of its AIDS prevention and control programme since April 1986, with as objectives the prevention of further spread of HIV, perhaps of curing patients or making them less infectious and decreasing the risk of complications through early diagnosis and treatment. Of the 190 patients eligible to participate in this programme, 160 named a total of 225 partners. Of the 225 partners, 172 were tested and 65 found positive. Sixty-eight of the 225 partners were notified through provider referral, notification being by

registered letter; 43 of them were tested and three were positive. Of the 65 seropositive partners identified through this programme, 30 said they would not have taken the test or had not already been informed by their partners of their exposure. Of these 30 partners, who were felt to represent the real value of partner notification, 9 were homosexual or bisexual men, 17 intravenous drug users, and 4 heterosexuals. Three beneficial effects of the programme were observed: HIV-infected persons were detected who would not otherwise have been tested; direct counselling was provided to exposed but uninfected persons; and the risk of transmission was reinforced to the index person.

3.2.8 Senegal

Senegal's partner notification programme has three objectives: to stop HIV infection while its prevalence in the country is low and to identify persons responsible for HIV transmission and all partners of HIV-infected individuals. Two approaches are used: an official one based on STD experience and a simplified one. In general it is felt that the simplified approach is better, has greater flexibility, results in stigmatization less often and has greater potential effectiveness because it enlists the aid of the index person. In Dakar 15% of partners of STD patients have been traced, 2% of partners of prostitutes, and 4% of partners of blood donors. The rates among prostitutes and blood donors, it is felt, are low because of concern about confidentiality and stigmatization. The official approach costs more, patients may lose trust, and breaches of confidentiality with resulting stigmatization are possible. In general, the approach adopted in Senegal is shown in Table 2.

Table 2

Estimation of costs per HIV-seropositive contact found by means of contact tracing in Dakar, Senegal

<u>Group</u>	<u>HIV seroprevalence</u>	<u>Risk of transmission</u>	<u>Method</u>	<u>Cost</u>
Blood donors	0.6%	±	Simplified	±
Legal prostitutes	12%	+++	Simplified	+++
Illegal prostitutes	not known	++++	Official	++++
STD patients	2-3%	++	Simplified	++
AIDS/ARC patients	50%	±	Simplified	±

3.2.9 Thailand

Partner notification has been used extensively in Thailand for the control of STD. Partner notification for HIV has three objectives: to counsel the sexual partners of index persons so as to reduce HIV transmission; to facilitate medical referral of the sexual partners of index persons, if necessary; and to follow up the partners of index persons over a period of time. HIV-infected index persons are identified through HIV screening programmes and largely fall into one of four groups: intravenous drug users, male prostitutes, prisoners, and female prostitutes. Patient referral is the preferred approach to partner notification, and provider referral takes place only at the request of the index person and with his or her informed consent. Index persons, once identified, are followed up as far as possible by health department staff for the purpose of ongoing counselling and facilitated medical referral. The cost of finding an index person through serosurveillance is US\$ 390 per person, but is substantially lower when serosurveillance is clinic-based. Notification, counselling, and education of a named partner by health department staff costs approximately US\$ 15 per partner. In Bangkok index persons have named 129 partners: 29 partners of AIDS patients, 31 of ARC patients, and 69 of HIV-infected persons. Of the 129 partners, 71 were foreigners and not reachable; of the 58 Thai partners, 25 were reached and 7 were positive (5 homosexual men

and 2 heterosexual women). As compared with the 80% of partners of STD patients located, this follow-up rate is interpreted to mean that partner notification is less effective when applied to HIV prevention and control.

3.2.10 Union of Soviet Socialist Republics (USSR)

In the USSR partner notification is linked with widespread HIV screening and required by law for all HIV-infected persons. However, partners legally required to be informed are only donors and recipients of infected blood and lawful spouses, children, and mothers of infected persons. The main objectives of partner notification are to counsel HIV-infected persons so as to prevent further HIV transmission, to treat HIV-infected persons if possible, and to educate non-infected partners about limiting their exposure to infection. Two approaches are used: patient referral and confidential provider referral. In general, index persons rarely chose the patient referral method, and then only for their current sexual partners. Approximately 96% of notified partners agree to being followed up by medical specialists. The utility of partner notification in this low-prevalence nation is illustrated by data from several epidemiological investigations. For instance, a homosexual man infected 5 of his 22 sexual partners; they in turn infected four women who, in their turn, infected two infants perinatally. One of the five infected partners infected five additional persons through blood transfusion, and one of the latter infected her husband. This investigation identified 16 previously undiagnosed infected partners.

3.2.11 United Kingdom

The United Kingdom has an established system of genitourinary medicine clinics for the diagnosis, treatment, and prevention of STD. These clinics are voluntary and confidential, legal provisions ensuring the confidentiality of the records. There has been a recent trend away from the use of provider referral for STD, a greater emphasis on education and counselling, and a move toward patient referral, for reasons of cost and, more important, because it helps the index person accept responsibility for managing the infection. The primary objective of partner notification for HIV infection is to enable people at risk of infection to receive individual counselling on risk reduction or avoidance. Views differ on the importance of identifying partners who are already infected. There is an emphasis on patient referral for current partners with clinic-to-clinic variations in the stress placed on the testing of partners, although the testing of women is usually encouraged. With counselling, it is estimated that virtually all infected patients will be able to notify their current stable sexual partners and intravenous drug users will also be able to notify their partners who share injection equipment. Because of local variations in procedure, the work schedules of health advisers, and the emphasis on education and counselling, it is difficult to determine costs or attribute a declining HIV incidence specifically to partner notification within overall HIV prevention and control programme activities.

3.2.12 United States of America

Since 1986 partner notification has been advocated in the United States for the control of sexual and drug-associated transmission of HIV. While the primary emphasis is on patient referral in many states, sufficient resources are being made available to increase provider referrals, and in some states provider referral is the preferred approach to partner notification. Specifically, all 50 states counsel HIV-infected patients seen in publicly funded HIV counselling and testing centres about the importance of informing their sexual and needle-sharing partners of their exposure risk. In all 50 states provider referral is available on request, and 15 states have programmes that encourage provider referral for all patients. In San Francisco, California, provider referral activities focus on preventing perinatal transmission, hence on partners of HIV-infected heterosexuals and bisexuals. Fifty-one index persons named 135 partners, of whom 59 (44%) were interviewed and 34 (58%) of these were tested, 7 (21%) being found seropositive. In Colorado, a state that emphasizes provider referral, 504 infected

persons named 767 partners, of whom 626 (82%) were located; 546 of these (87%) had not been previously tested. Of the 546, 429 (79%) accepted testing and counselling, and 59 (14%) were found seropositive. There were similar experiences in Idaho, where a follow-up of 120 HIV-infected individuals led to the diagnosis of 23 infected partners, and in Virginia, where a follow-up of 230 HIV-infected patients from STD clinics led to the diagnosis of 44 infected partners. In South Carolina investigation of a single HIV-infected homosexual man led eventually to 12 new diagnoses of HIV infection in his partners and their partners. In New York City patient referral is emphasized, but provider referral is available on request. Of the 166 partners interviewed through this programme, 50-75% were previously aware of their exposure, 50% had already sought counselling and testing, and 50% were already practising risk reduction. Those unaware of the risk were typically women with a single exposure to a bisexual man. Of the intravenous drug-users who used the programme, almost all were under treatment. Approximately 17% of persons seeking counselling and testing said that they were referred by their partners. The cost varies from US\$ 810 per seropositive partner identified in South Carolina to US\$ 2 203 in San Francisco.

3.2.13 Yugoslavia

Yugoslavia has no formal policy, legislation, or procedures regarding partner notification for HIV infection; so far partner notification has been left to the individual seropositive person and his or her physician. This has resulted in a wide variety of approaches, from keeping it a secret to insistence on informing the partner. The ways of informing partners depend on experience, cultural background, and training. Within the country there are considerable differences in approach, ranging from counselling the seropositive individual and leaving the decision to him, to mandatory notification. In principle, partner notification should be the product of a joint strategy: it should take into consideration the psychosocial status of the seropositive individual and be voluntary and confidential; it should, if possible, be carried out by the seropositive individual himself or herself; and it would be useful if a joint consultation of physician, seropositive individual, and his or her partner was held to discuss the situation. Partner notification should be in the interest of the seropositive person, his or partners, and the public in general.

3.2.14 Summary of experience in the countries reporting

The experience in the 13 countries is summarized in Table 3 on page 15.

3.3 Legal, ethical, cultural, and political issues

Many of the issues of partner notification parallel those related to HIV antibody testing. Does partner notification confer advantages or disadvantages on the person notified? If the latter, do any proven or probable advantages to the community outweigh the disadvantages? Will provider referral lead to discrimination? Will alienation of groups at the highest risk of infection result?

The only certainty is that if discussion on these issues is postponed until a crisis occurs, political expediency will prevail over humane and rational consideration. Whichever form partner notification takes, ethical issues arise that become more important as approaches become more aggressive. The criteria for implementing a programme of partner notification must therefore rest on a careful analysis of risks and benefits to the index person, the partners, and the community. Nonetheless, the essential problem remains that partners usually exert no influence, whether or not they are identified and notified. The major political and cultural problem is that ill-informed public or political pressure may lead to inappropriate, discriminatory, punitive, or counterproductive legislative action. Moreover, selective provider notification may be politically unacceptable because it is seen to exempt certain groups and discriminate against others. The major legal issue is that legislation may be necessary to enable provider referral and the failure of the provider and possibly of the

index person to notify exposed partners may be construed as negligence. In determining strategies for partner notification, documented or probable advantage to individuals or the community resulting from prevention of transmission of HIV infection must be weighed against predictable disadvantage to individuals; every effort should be made to reduce any disadvantage to the minimum possible. Strategies should be flexible, humane, rational, appropriate to the individual and the community, and acceptable to the groups at highest risk of infection and to health care providers.

3.4 Monitoring and evaluation of partner notification programmes

The ultimate goal of partner notification programmes is to reduce HIV transmission in the community, but evaluation is difficult because partner notification is designed to be an integral part of an overall prevention and control programme. While there is evidence that partner notification has worked in defined STD outbreaks, the evidence for its utility in endemic STD is much less clear and no systematic evaluation has ever been undertaken. To answer the fundamental question whether such a programme works or not, the ideal would be a randomized trial of partner notification in which the community-wide incidence of HIV would measure the outcome. Such a trial would be extremely difficult to carry out, in relation both to matching and to measuring the outcome. Another outcome more easily measured but less exact is community-wide change in high-risk behaviour or community-wide prevalence of other STD, (e.g., gonorrhoea or syphilis). Because of this, most published studies of partner notification have focused on process outcomes, such as the numbers of patients participating, patients identified and informed, infected partners diagnosed, and uninfected partners counselled. Additional important data may be more complete risk profiles of index persons and partners, which in addition to the usual demographic information may include the partner's knowledge of his or her risk status, the partner's reproductive status, and a characterization of the relationship between the index person and the partner. A further issue is how to evaluate the effectiveness of partner notification in reaching unnamed casual partners; failure to reach this group undermines the value of partner notification. The cost of the programmes should be measured as well but will vary with population density, medical costs, seroprevalence, and the extent to which the programme is integrated with clinical services.

4. DESIGN AND IMPLEMENTATION OF PARTNER NOTIFICATION PROGRAMMES

4.1 Objectives

Partner notification can contribute to two objectives of the Global AIDS Strategy:

- (1) to prevent the transmission of HIV;
- (2) to reduce the personal and social impact of HIV infection.

Partner notification can contribute to these objectives by identifying individuals who may have been exposed to HIV infection sexually or by sharing injection equipment and by informing them of the risks to which they have been exposed so that they can be offered counselling and other services.

4.2 Principles

Partner notification as a part of a comprehensive AIDS prevention and control programmes is acceptable only if the following principles are maintained. Partner notification should:

- (1) be in accordance with the Global AIDS Strategy and national AIDS programme goals;
- (2) respect the human rights and dignity of the partner and the index person;

(3) be a balanced part of a comprehensive AIDS prevention and control programme and, in the context of primary health care, be coordinated with other public health activities such as STD, maternal and child health, family planning, and substance abuse prevention programmes;

(4) be voluntary², not coercive; Index persons and their partners should have full access to the available services, whether or not they are willing to cooperate in partner notification activities;

(5) be confidential, confidentiality including written records, locating information for partners and, in provider referral, the identity of the index person. Nevertheless, occasionally in provider referral, as when an index partner has had a single partner only, the identity of the the index persons may be able to be inferred; and

(6) be undertaken only when appropriate support services are available to the index persons and partners. The minimum requirements for such services are counselling on the implications of exposure to infection, the availability of voluntary confidential HIV testing with pre-test and post-test counselling, and appropriate health and social services. The quality of these services should be ensured and monitored regularly.

4.3 Key variables

In considering whether to undertake partner notification as part of a comprehensive AIDS prevention and control programme, a number of key local and national variable factors must be taken into account.

4.3.1 Epidemiology

The seroprevalence, seroincidence and patterns of transmission of HIV, demographic factors, and knowledge, attitudes, beliefs and practices in the relevant population.

4.3.2 Resources

Financial and personnel resources and facilities for diagnosis and management, taking into account scientific and technical developments in diagnosis, treatment, and prevention and the organization of the health and social services.

4.3.3 Local environment

Relevant legislation, cultural considerations, political realities, the social climate, and perceived and actual threats to human rights.

4.3.4 Existing AIDS prevention and control activities

These include STD control, maternal and child health, family planning, and substance abuse activities.

4.4 Methods

Taking into account the programme objectives, principles, and key variables, the following methodological issues should be explicitly considered before implementing a partner notification programme.

²When an index person refuses to notify or permit notification of a partner known to the health care provider, the provider will be required to make a decision consistent with medical ethics and the relevant law.

4.4.1 Programme issues

- (1) Will patient referral, provider referral, or a combination of the two approaches be used?

Patient referral is the natural starting-point for partner notification, but this approach may not be feasible for some index persons and partners.

- (2) Which partners and populations will be targeted?
- (3) How will partner notification relate to other AIDS prevention and control activities and other relevant public health programmes?
- (4) How will confidentiality be assured for the index person, the partners, and the records?

The only relevant piece of information related to the partners being notified is the possibility of HIV exposure.

- (5) How will health care providers participating in partner notification activities be trained and how will their quality be ensured?
- (6) Exchange of information between countries is complex and may create special problems, particularly regarding confidentiality. Will information about partners in other countries be communicated to health officials in those countries when index persons cannot or will not notify their partners?

4.4.2 Index person issues

- (1) How will the diagnosis of HIV infection be confirmed?
- (2) How will the informed consent of the index person be obtained?
- (3) How will the index person be interviewed?
- (4) How and when will the issue of partner notification be raised?
- (5) What part of the period of infectiousness will be used for determining the partners to be notified?

The part of the period of infectiousness for determining which partners should be notified should be as extensive as is practicable and useful.

- (6) How will the index persons be counselled in relation to informing their partners?

4.4.3 Partner issues

- (1) Which partners will be notified?
- (2) How will the partners be notified?
- (3) How will they be counselled?
- (4) Will they all be offered testing and, if so, how?
- (5) What clinical services will be available to persons found to be HIV-infected through partner notification programmes?

As a general principle, partners thus notified should have ready access to voluntary testing, counselling and other services.

4.5 Evaluation

The risks and benefits of partner notification and its effectiveness in decreasing the incidence of HIV infection in a community have not been clearly established. Direct measurement of the risks and benefits in a properly controlled intervention trial will rarely be feasible. Thus the contribution of partner notification to comprehensive AIDS prevention and control programmes and its true effectiveness cannot be assessed.

Indicators of trends in HIV incidence, both direct and indirect, such as behavioural change, reduction in the incidence of other STD and increase or not in the use of condoms, are nonetheless important measures of the overall effect of a comprehensive AIDS prevention and control programme, of which partner notification may be a component.

To assess the efficiency of partner notification activities and to ensure their quality, a variety of methods of measuring programmes should be monitored. They include the following measures.

4.5.1 Quantitative measures

Appropriate quantitative measures are the number of index persons, the number of partners identified, the number of partners notified and counselled and their seroprevalence, and the cost of the programme.

4.5.2 Qualitative measures

Appropriate qualitative measures are the satisfaction of participants, the compliance of participants, and the acceptability of the activities to participants. Participants include index persons, partners, and health care providers.

4.5.3 Quality assurance activities

Quality assurance activities include the assessment of counselling and support resources, the level of staff training, provisions regarding confidentiality and legal protection, and monitoring of counselling (and, as appropriate, of testing activities), and of the adequacy of follow-up.

5. RESEARCH NEEDS

The basic research question concerns the effectiveness of partner notification as a component of a comprehensive AIDS prevention and control programme. Since countries vary widely in HIV epidemiology and the availability of relevant data and resources, it would be helpful to develop and disseminate standard methods for collecting information on programme design and implementation, including objectives, key variables, methods, and evaluation. Uniform or comparable data would enable comparisons among programmes to be made on the cost and contribution of partner notification to AIDS prevention and control.

Further scientific information that might be of importance to programmes includes factors that influence HIV transmission (e.g., stage of infection, coexistence of other STD) and therapeutic modalities for early HIV infection.

At the social level, research could help to establish whether particular risk behaviour and/or particular ethnic and cultural groups provide especially favourable or unfavourable settings for partner notification. Prospective surveys of the knowledge, attitudes, beliefs, and practices of the population, index persons, and notified partners could also provide important assessment information.

As a part of the social considerations, the effect of partner notification on partner relationships and on the willingness of individuals to participate in HIV prevention and control must be carefully assessed in the local context. As a corollary, it would be useful to ascertain whether the testing of notified partners is a useful or effective component of partner notification.

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