0303-8408/94/S10047-14 $ 1.50 + 0.20/0

Soz Präventivmed 1994; 37 Suppl 1: S47–S60

Michael Pollak; Wolfgang Dür, Austria; Michel Vincineau, Belgium; Michel Perreault, Canada; Richard Prusa, Czecoslovakia; Jan Fouchard, Denmark; Michael Bochow, Germany; Olli Stalström, Finland; Rainer Herrn, Germany; Peter Davies, Great Britain; Gregory Vallianatos, Greece; Charles Kerrigan, Ireland; Francesco Allegrini, Italy; Hartmut Sasse, Italy; Rob Tielman, Netherlands; Annick Prieur, Norway; Oscar Guasch Andreu, Spain; Benny Henriksson, Sweden; Jean Blaise Masur, Switzerland

*Centre national de la recherche scientifique, Paris**

Evaluating AIDS prevention for men having sex with men: The West European experience

Summary

This article presents the major results of a Concerted Action of the European Community on "Assessing AIDS-prevention" concerning the male homo- and bisexual population. It discusses the methodologies and results of research projects undertaken in this area in the 1980's.

The concentrated diffusion of HIV infection in a few marginalized groups creates specific problems for prevention, health information, education and evaluation. From the beginning, prevention has had to face the difficult shaping of its messages: How to rapidly alert the most exposed groups and to bring about behaviour changes without simultaneously inciting an unjustified reactions of panic. How to formulate messages clearly addressed to fringe groups without stigmatizing them? When it comes to evaluating the prevention effort, similar problems of definition and of access have to be overcome: how to reach men having sex with men, how to delimit the population?

This article gives an overview of West European research projects and their results with the specific aim of measuring behaviour changes and the use of the HIV antibody test in the gay population. It will not be possible in such a short presentation to link these changes to attitude data or to specific intervention programs.

The first problem faced by our study is the difficulty of assessing the real size of the male population having sex with men. We have to rely on partial estimates based on self-reported behaviour. These estimates depend on the definitions of the group of men having sex with men:

Should one only include men who identify as gay? Should one include married men who occasionally have sex with men, or all those who have had at least once such experience? And what about men dreaming about other men when they engage in solitary masturbation? These problems are common to all studies on sex and sexuality. In 1948, Kinsey estimated that just under 40% of the male population under study had at least some overt sexual experience to the point of orgasm with another man. This shows the importance of bisexuality as a transient phenomenom. Most estimates and surveys concerning lifetime sexual activity arrive at a range of 3–4% of men having sex mainly with men[1]. These figures might suffer from biases: some people will never disclose their sexual preference, and there is reason to believe that this is the case of people with low sociocultural status even more than in the middle classes. In all surveys conducted on the general population, the proportion of men having sex with men is significantly lower on the bottom of the social hierarchy.

These questions cannot be discussed as exclusively technical matters. It was the scientific (medical) discourse of the 19th century that defined homosexuality as a sexual pathology, a mental disease or disorder. In so doing, it shaped discriminatory public attitudes and opinions, legislation and specific forms of exclusion. Only in the late 1960s did the liberalizing tendencies gain force. But residual inequalities under the law still exist in many countries, ranging from the age of sexual consent, indecency rules, censorship of sexually explicit material to the prohibition of gay organisations identified as promo-

* This article is based on a report for the European community, elaborated by an expert group in 1990. Have participated in the group:

tion agencies for homosexuality[2]. These historical experiences still limit disclosure of homosexual acts creating problems in evaluation of AIDS related behaviour changes. Therefore the difficulties encountered in research always point to similar problems in prevention[3].

Assessment research in western europe

In several european countries, the first cases of AIDS were diagnosed only a few months after the first description, in 1981, of the syndrome in the CDC Weekly Morbidity and Mortality Report. As in the United States, almost all cases diagnosed in the very first years of the epidemic were men in their thirties having sex with men (Table 1). Despite the lessons from the United States, where a rapid increase of cases pointed to the epidemic nature of the phenomenon, the sociopolitical recognition of AIDS as a public health priority often took many years. Almost everywhere, voluntary associations preceded public authorities in organising prevention and in building alliances with medical networks. Gay organisations played a major role in this phase. Often public authorities had difficulties finding the appropriate way of entering into communication with male homo- and bisexuals. Therefore they tried to use gay organisation as intermediaries.

The strength of preventive approaches in medical traditions also shaped the early response to the epidemic. As in STD and, some decades ago, tuberculosis prevention, there exists a clear gap between Northern and Southern Europe in AIDS prevention. The Scandinavian countries, the United Kingdom and the Netherlands were much quicker in implementing preventive strategies than the mediterranean South. Germany, France, Austria and Switzerland occupy an intermediate position (Table 2).

The AIDS epidemic also provoked a proliferation of research projects not only in the biomedical field and in epidemiology, but also in social sciences. As the most infected group, male homo- and bisexuals have become major subjects for investigation. In most European countries such research has been undertaken by independent researchers, by AIDS organisations, by gay associations and media or in close cooperation with them. Nevertheless, funding for non-medical research has often been difficult to obtain and to secure on a long term basis. Evaluation of specific prevention instruments and campaigns is exceptional.

If we see changes in HIV-incidence as the major goal of prevention, national surveillance systems are not sensitive enough to measure them precisely and even less able to measure the effects of general and/or group specific interventions. In addition to being exposed to prevention programs, people live in an environment of intense media coverage that influences their attitudes and behaviours. Diverse prevention programs start at the same periods without the possibility of proper evaluation of each particular project. In retrospect, the observed knowledge and behaviour can only be interpreted as the result of numerous formal and informal interventions and experiences, of a prevention climate basically informed by country specific policies and media reporting.

	AIDS cases March 1990	Cumulated rate per million	% of homosexual cases 1985	1990
Austria	415	55	65%	45%
Belgium	651	66	20%	35%*
Denmark	573	112	90%	77%
Finland	58	12	80%	81%
France	9718	173	60%	52%
Germany, F.R.	4653	76	75%	70%
Greece	295	30		49%
Ireland	142	41	77%	39%
Italy	6068	105	24%	15%
Luxemburg	26	65		58%
Netherlands	1189	80	81%	81%
Norway	153	36	88%	74%
Portugal	410	39	67%	46%
Spain	5295	135	26%	17%
Sweden	406	48	80%	72%
Switzerland	1255	190	62%	46%
United Kingdom	3157	55	93%	80%
Czekoslovakia	23	2		91%
Germany, D.R.	19	1		68%
Poland	35	1		66%

* These low figures can be explained by the high proportion of African cases.

Table1. *Epidemiological background data.*

The design of major research projects reflects the state of the epidemic (Table 3): before 1985 epidemiological cohort studies have been initiated with the objective of identifying different risk factors and practices, of monitoring sexual behaviour changes and their impact on HIV incidence rates among homo- and bisexual men. The cohort bias does not allow generalisations to be drawn. Clinic based cohort studies usually show higher seroprevalence and higher levels of behaviour changes than more representative approaches. In fact, cohort participants accepting to undergo the test regularly have particularly high risk consciousness and develop very high levels of safer sex compliance. Therefore, the obvious advantage of the direct observation of HIV status as a dependent variable, is counterweighted by other biases and difficulties when it comes to assessing behaviour changes and compliance to safer sex.

A little later, sociological surveys got interested in the determinants and parameters of sexual behaviour changes. Besides sexual practices and their modifications, these surveys investigate sociocultural variables, the level of AIDS knowledge, the sources of information used, social networks, acceptance of homosexuality, self esteem. In the WHO (World Health Organisation) terminology, these surveys are called KABP (Knowledge, Attitudes, Beliefs, Practices). For more precise measurement, a British research team used the sexual diary approach.

Sociologists, anthropologists, and social psychologists have approached the same questions with qualitative research methodologies. Although based on fewer case observations (mostly less than 100 by project) such research was able to better understand psychological barriers to safer sex, in particular in younger populations and in the case of men having sex with men but not identifying themselves as being gay[4]. They also shed light on the emotional stresses and losses involved in changing behaviour and in experiencing death in one's close environment.

The countries where men having sex with men are the most severely hit by the epidemic, have developed the most complete set of research projects allowing them to monitor changes and to orient their prevention policies: the Netherlands, Denmark, France, Switzerland, Germany, Italy, the United Kingdom. In most other countries KABP surveys are either under way or in preparation. In many countries, this will be the first time that homosexual behaviour and living conditions have been empirically studied.

Sampling

All research on male homo- and bisexuals has to overcome similar problems of sampling and of biases inherent in self-reported data on practices that are not accepted socially and sometimes discriminated against.

Cohort members of longitudinal purposes are usually recruited through health services, VD clinics or networks of gay doctors. In Amsterdam, the recruitment of 741 male homosexuals in 1984, who volunteered in this study, was possible because of the relationship between the Municipal Health Service and the male homosexual community during several epidemiologic and prevention studies of STDs[5]. In Denmark, a cohort of 260 gay men, members of a gay association, was composed in 1982 and has been observed since then[6]. In both cases, cohort participants were unmarried professionals with high levels of education. In addition to blood samples for determining HIV-antibody status, these studies investigate sociodemographic, psychological, life style and sexual behaviour, in order to isolate risk practices and to determine the correlations between HIV status and behaviour.

Quantitative investigations such as KABP surveys among gay men always pose the problem that since the ambit of the group cannot be known, representative sampling cannot be undertaken. As representativeness is impossible to achieve, one can try to get a sample large enough to guarantee significant statistical results and to reflect the diversity of the population under study. The problem then becomes access. In countries with a dense organisational network with high membership rates, large samples can be constituted by sending out questionnaires. Inserting a questionnaire in gay magazines is another way of accessing the gay population. These two approaches priviledge people with a certain gay self-consciousness expressed in membership in gay organisations or readership of gay media. Another way of accessing gays is to put at their disposal questionnaires in different meeting places that they are asked to send back to the research team.

In snowball sampling, the research team constitutes a network of collaborators at different localities who hand out a certain number of questionnaires to other homosexuals and ask them to do the same with other men they know. Quota sampling of male homo- and bisexuals proceeds the same way as quota sampling in the general population. Quotas are modelled according to the sociodemographic characteristics of the male population: age, profession, educational level, residence. Interviewers are then asked to find men having sex with men that fit these different quotas. All these sampling techniques have been used. The choices reflect pragmatic constraints and/ ,or hypotheses about the segments of the population reached by these different approaches. The West

European experiences of the last years allow us to better analyse the biases of different sampling procedures.

In countries where gay magazines have a limited circulation and associations are very small, distributing questionnaires in meeting places is the preferred means for recruiting large numbers of respondents. In Ireland, a sample of 265 respondents was reached in 1988, the first research sample of this kind in the country[7]. 44% of respondents were approached in bars. Therefore, the sample is representative of Dublin rather than for the whole country (79%), for the age group 20–29 (50%) and 30–39 (34%). Similar sample biases for residence and age were observed in a French survey of 1983 that used the same sampling approach[8]. In Belgium, local studies have been organised. The largest study in the gay community was done in the Flemish part of the country. 379 people were recruited and interviewed on motivations for adopting or not adopting safer sex.

In the case of wide circulation, newspaper samples succeed in reaching much larger numbers of respondents and segments of the population. In Denmark, 2100 male homo- and bisexuals answered a questionnaire enclosed in two national gay magazines in the spring of 1988. 66% of male members of a large national gay and lesbian organisation were among the respondents; regional and age distribution was satisfactory[9]. In Italy, the first large survey of gay life in 1989 resulted from a two partner cooperation, the largest gay association Arci Gay and the Instituto Superiore di Sanita. Three thousand questionnaires were distributed through diverse channels, 1340 were returned and analysed. A third of the respondents were Arci Gay members[10].

In the United Kingdom Mc Manus and Mc Evoy enclosed a questionnaire in a gay magazine and got 1267 responses in 1985 and 1339 in 1988[11]. In Germany, Micheal Bochow organised two newspaper survey for the German AIDS-Hilfe, the first one in 1987, the second one in 1988 when he also circulated the questionnaire in leather bars and saunas to better represent this specific segment of the population. He used 7 gay magazines and reached 924 respondents in 1987 and 1122 in 1988[12]. In France, Michael Pollak from the nation research center CNRS (Centre National de la Recherche Scientifique) organises a yearly survey among the readers of the gay magazine Gai Pied Hebdo. From 100 respondents in 1985, this number increased to more than 2200 in 1990. Each year the first 1200, 1500 or 2000 responses were used for statistical analysis[13,14].

In the Netherlands, the gay studies program at the University of Utrecht enclosed a questionnaire in the gay national magazine De Gay Krant and asked organisations to send it out to its members. This procedure was repeated in 1986, 1987 and 1988. Only the respondents of all these waves were used for statistical panel analysis[15]. In Switzerland, Francoise Dubois-Arber, D. Franck and Jean-Blaise Masur of the Institute of Social and Preventive Medecine used a similar approach, in 1987 and 1990, enclosing the questionnaire in four gay magazines and distributing it through gay organisations. They got 795 responses in 1987 and 720 in 1990[16].

These newspaper surveys overrepresent middle class gays with high levels of education. They hardly reach blue collar and immigrant laborers. The age distribution from 18 to 50 years is generally satisfactory. Depending on the circulation, newspaper samples sometimes over-represent the major cities and urban regions. In the case of repeated surveys (France, Netherlands, Germany, Switzerland), the stability of sample characteristics over the years allows trend observations. In France a few control questions reveal that only 30% of respondents are regular readers of the gay press, but that a majority buys it occasionally. Also, the Paris region is slightly over-

Authorities	Year of first AIDS diagnosis	first NGO's	prevention action public
Austria	1983	1983	1986
Belgium	<1981	1985	1985
Denmark	<1981	1984	1984
Finland	1982	1982	1986
France	<1981	1985	1987
Germany F.R.	1981	1983	1985
Greece	1984		1985
Ireland	1982	1986	1986
Italy	1982	1984	1989
Netherlands	1982	1982	1983
Norway	1983	1983	1985
Portugal	1983		1986
Spain	<1981	1983	1985
Sweden	1982	1981	1985
Switzerland	<1981	1984	1986
United Kingdom	<1981	1982	1986

Table 2. *Chronological landmarks.*

Country	Year	Type of study	N	Sample Methodology	Authors
Austria	1990	KABP (in progress)	270	Snowball	Dür et al
Belgium	1986	KABP	200	Snowball	Univ. of Louvain
	1990	KABP	379	Snowball	Vincke
Denmark	1982	KABP	260	Cohort	Melbye et al
	1988	KABP	2100	Gay org.	Schmidt et al
Finland	1990	KABP (in progress)	160	Snowball	Grönfors
France	1985	KABP	1000	Newspaper	Pollak et al
	1986	KABP	1200	Newspaper	Pollak et al
	1987	KABP	1200	Newspaper	Pollak et al
	1988	KABP	1500	Newspaper	Pollak et al
	1989	KABP	1500	Newspaper	Pollak et al
	1990	KABP	2200	Newspaper	Pollak et al
Germany	1987	KABP	924	Newspaper	Bochow
	1988	KABP	1122	Newspaper	Bochow
	1988	KABP	903	Snowball	Dannecker
Ireland	1988	KABP	265	Snowball	(Gay Health Action)
Italy	1989	KABP	1340	Snowball	Sasse et al
Netherlands	1984	cohort	741	Cohort	Van Griesven et al
	1986	KABP	522	Newspaper	Tielman et al
	1987	KABP	522	Newspaper	Tielman et al
	1990	KABP	522	Newspaper	Tielman et al
Norway	1986	Interviews	60	Bars, discos	Prieur
Portugal	1990	Interviews (in progress)	?		
Sweden	1990	Interviews (in progress)	?		
Switzerland	1987	KABP + int	795	Newspaper	Dubois et al
	1990	KABP + int	720	Newspaper	Masur et al
United Kingdom	1985	KABP	1267	Newspaper	Mc Manus et al
	1988	KABP	1339	Newspaper	Mc Manus et al
	1988	Sexual diary	170	Snowball	Coxon et al

No major assessment research projects specifically concerned with tay men were reported from Greece, Luxembourg and Spain. This table is not exhaustive: in particular local projects were not taken into consideration, only projects completed or in a final stag at the end of 1990 are listed.

Table 3. *Studies available in Europe.*

represented, as are small towns with no major cities nearby. The conclusion is that the readership over-represents two segments of the gay population: the most self-identifying ones living in the Paris region, the most isolated ones in the countryside. For them, occasional reading of a gay magazine seems to be the only relationship with a gay community.

Are snowball and quota samples less subject to bias? In Germany Martin Dannecker from the University of Frankfurt recruited 903 respondents with a snowball system covering the whole national territory[17], almost the same size as Michael Bochow's newspaper sample of the same year. There were no significant differences between the two samples in age, residence, education. But the newspaper survey reached slightly more homosexuals with lower socioeconomic status[18]. In France, face to face interview surveys using quota samples were conducted in 1986 and 1987. The aim of using the same questionnaire as the one enclosed in the newspaper was to measure the bias of readers of the gay press. Lower socioeconomic and educational status were obviously better represented in the quota samples of 300 respondents each. But for most questions, no statistically significant differences were found, except for the time of first behaviour changes from two to six months earlier among readers of the gay press[19].

For their sexual diary approach, project SIGMA recruited through gay newspapers. Recruitment results with ethnic groups and blue collar were disappointing. Out of a total of 273 diaries sent out, 188 were received back, of which 125 (46%) identified themselves and 63 (23%) were unidentifiable. Of these 107 (39% of the original total) said they were willing to continue to cooperate with the project, either by being interviewed or by doing further diaries[20].

After comparing these sampling methods, we can conclude:

- Accessing men having sex with men with low economic and educational status (in particular immigrants and ethnic minorities) is difficult. None of the sampling methods presented above has completely solved this problem.
- A major problem of cohort studies and the sexual diary approach is the potential loss of participants over time. But they have the advantage of being able to describe aggregate individual changes.
- As compared with snowball sampling or quota sampling, newspaper surveys have the advantage of a very short period of data collection. They are less time consuming and involve fewer costs for administration and surveillance. For longitudinal observations, this short period is important as some changes (such as condom use) are very rapid so that data collection periods of several months can bring about biases in the interpretation.

Sexual behaviour changes

From as early as 1985, all surveys show a very high degree of information and knowledge about HIV transmission. But behaviour changes took much longer to be massively implemented. Despite basic methodological difficulties and the absence of a standardised questionnaire, a comparison of self-reported behaviour in different Western European countries provides us with a coherent picture concerning changes in sexual practices and HIV-antibody testing. Today, changes in sexual behaviour based on informed choice are an integral part of the response of gay men to AIDS.

The only surveys that allow us to compare present behaviour with behavior observed before the epidemic are the ones of Martin Dannecker of 1971 and of 1987[21]. He shows that the number of sexual partners in the year before investigation has dropped substantially. For the United Kingdom a comparison between 1985 and 1988 and in France between 1985 and 1989 shows similar trends. This reduction of the number of sexual partners seems not to continue after 1988 as shown by the French yearly surveys and the German replication surveys of 1988 (Table 4). The same surveys show a drastic reduction of the frequency of anal penetration and, if maintained, an increase of condom use (Table 5). In Denmark a survey showed that condom use increased from 3% in the early 1980s to 82% (regular and irregular) in 1987[22]. In France, condom use increased from 5% in 1985 to 74% in 1990, with 49% using condoms regularly[23]. According to Martin Dannecker, only mutual masturbation and body rubbing (frottage) have been maintained at similar levels as in the early 1970s. All practices involving body fluids (anal and oral), including deep kissing, have been sharply reduced. This observation is substantiated in other research. Project SIGMA also shows that masturbation is the most frequently practised sexual act (Project SIGMA, 1990). In several countries (France, Germany) around 20% of respondents, who earlier frequented these places avoid bathhouses and saunas.

The multiple country comparison shows significant changes in bonding patterns: around 50% of male homo- and bisexual survey respondents have a steady relationship, around half of the men having such a relationship have sex exclusively with this steady partner (Germany, France, Switzerland, United Kingdom). In France the overall number of steady relationships has remained unchanged from 1985 to 1990 while the number of close couple relationships has increased from 10% to 25%. Under the impact of the risk

Number of partners the last year (%)								The last 6 months (%)		The last 3 months (%)	
	1971: D[1]	1987: D[2]	1987: D[3]	1988: D[3]	1985: UK[4]	1988: UK[4]	1989: I[5]	1985: F[5]	1990: F[6]	1987: CH[7]	1990: CH[8]
None	–	2	4	4	6	2	10	5	8	10	8
1	6	15	17	16	31	51		16	26	26	26
2–5	19	33	36	37			48	31	32	37	37
6–10	17	18	16	15				21	18	18	18
11–20	23	13	12	14	51	34		17	10		
21–50	20	12	11	10			35			8	10
51–100	9	5	3	3	9	5		10	6		
More	6	2	1	1	3	8	6				
	100	100	100	100	100	100	100	100	100	100	100
	(n = 789)	(n = 903)	(n = 924)	(n = 1122)	(n = 1256)	(n = 1300)	(n = 1340)	(n = 1000)	(n = 2000)	(n = 795)	(n = 720)

1. M. Dannecker, R. Reiche
2. M. Dannecker
3. M. Bochow
4. Mc Manus, Mc Evoy
5. Only casual partners; H. Sasse et al.
6. M. Pollak
7. F. Dubois-Arber
8. J. B. Masur

Table 4. *Number of partners: cross-national comparison.*

	Switzerland[1] 1987	Switzerland[1] 1990	Germany[2] 1988	France[3] 1988	Netherlands[4] 1990	Netherlands[4] 1988	Ireland[5] 1988	Italy[6] 1989	
								act	pass
Don't practice anal penetration (never had or abandoned)	50 %	42 %	19 %	24 %	30 %	45 %	27 %	36 %	48 %
Regular condom use for anal penetration	30 %	34 %	42 %	47 %	49 %	16 %	47 %	27 %	25 %
Practice non-protected anal penetration	20 %	23 %	39 %	29 %	21 %	39 %	26 %	37 %	27 %
	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

1. F. Dubois-Arber, J. B. Masur (figures for the last three months)
2. M. Bochow (figures for the last twelve months)
3. M. Pollak (figures for the last six months)
4. R. Tielman (figures for the last six months)
5. Gay Health Action (figures for the last twelve months)
6. H. Sass (figures for the last twelve months with casual partners)

Table 5. *Safer sex practices (1987 or 1988): a cross-national comparison.*

of infection, there is a tendency to limit sexual interaction even with the main or exclusive steady Partner.

In Italy, the 1989 survey shows 17% living in an exclusive couple relationship and 55% having stable and occasional sexual partners and 25% only occasional partners. People tend to adopt a more protective approach in casual relations than with their steady partner. In particular, gays living in an open couple relationship report much more regular condom use with casual partners, while – in the case of a known seronegative status they often don't use them with their stable partner.

One observes a few striking differences between national patterns which can, in part, be explained by differences in the official arguments used in prevention campaigns. In Germany, France, and Ireland regular condom use in anal penetration is becoming a gay habit. In Switzerland and, even more so, in the Netherlands, male homo- and bisexuals have massively given up anal penetration. Despite these impressive behaviour changes, one observes levels of unprotected anal sex of more than 20%, going up to 21% in France and 39% in the Netherlands. These figures indicate people that practice, at least sometimes, unprotected anogenital sex. Table 5 shows the amount of still unprotected sexual activities in several West European countries.

These are maximum estimates including monogamous couples and people protecting themselves with anonymous partners and taking no precautions with steady partners whose HIV status they know. The insistence on the limited safety of condoms before the development of a special anal condom in the Netherlands might have had the effect of creating an attitude of "condom scepticsm" and of maintenance of non-protection for those who could not renounce anal sex. The Danish newspaper survey of 1988 did not survey behaviour change, but 33% of respondents indicated at least one act of unprotected anal intercourse in the past year with a partner with either different or unknown HIV-status.

Clearly, the type of relationship is the most important predictor of unprotected anal sex. All surveys show that, today, unprotected anal penetration is still be found mostly in closed couple relationships. The smallest ratio of those practising unprotected anal penetration occurs with men in a steady, but not sexually exclusive, relationship. The regular use of a condom during anal intercourse by gay men with no steady relationship is relatively unaffected by the number of times they practise it and the number of partners.

Since 1989, there seems to be a slowdown of further reduction of unprotected anal sex although regularity in condom use is still progressing. Project SIGMA reports for the United Kingdom a shift away from safer sex largely due to an increase in the number of men with regular partners. The same is observed for Germany and France. Also, the more regular use of condoms allows many gay men to once again practice anal sex that they had given up in previous years.

The correlation of condom use and the type of partnership clearly shows that safer sex does not result from an individual rational choice or decision. Sex is a social activity, an interaction subject to negociation. Therefore, adoption of safer sex is a process starting with changes easy to implement before more difficult modifications. One can classify sexual behaviour changes in two broad categories: strategies of selection and strategies of protection. Selection strategies include the choice of partners (from the reduction of number of partners, the choice of a closed relationship, to selection according to "look", geographical origin, etc.), of meeting places (avoidance of saunas and backrooms, no more sex tourism, etc.). Protection strategies directly concern the sexual act: no more anal intercourse, regular use of condoms. The yearly French surveys alow us to describe the logic of sexual behaviour changes and the relationship between these two strategic patterns (Table 6).

In the early days of the epidemic, changes were almost exclusively concerned with more precautious selection of partners and places. These choices were based on personal appreciations of risk, often badly informed and incoherent such as: "avoid American tourists", "don't fuck big city gays", etc. They had very limited effect on the progression of the infection. Only in the mid 1980's when the size of the epidemic became visible to all gay people did they start to protect themselves during the sexual act, in particular with condoms. The wide-

	1985	1990
Strategies of selection	30%	10%
Mixed strategies	5%	58%
Strategies of protection	–	19%

Selection: Avoidance of certain types of partner and meeting places.
Protection: No anal intercourse, regular use of condoms.

Table 6. *Types of behaviour changes in France.*

spread use of the HIV antibody test allows basing selection strategies no longer on "guesses" but on "knowledge" of the serostatus of oneself and potential sexual partners. Therefore we observe after 1989 new changes in safer sex adoption with the importance of mixed strategies and differentiated risk taking with steady and causal partners.
We can conclude:

– on the most general level, we observe the swing in the sexual repertory from anogenital and orogenital practices to solitary and mutual masturbation,
– the reduction in the number of sexual partners, the increase of closed couple relationships,
– the widespread diffusion of condom use, becoming increasingly regular,
– the adoption of different sexual approaches to steady and to casual partners.

HIV-antibody testing

When the HIV antibody test first became available on a large scale (in most countries between 1984 and early 1985), most AIDS organisations were reluctant to advocate or openly hostile towards mass testing programs in the absence of treatment possibilities. In the Netherlands, this anti-test position was formally endorsed by the national AIDS council.
In a few countries, this position is now being softened and changed. Recognition not only of clinical symptoms, but of biological markers, permits early interventions and retroviral treatments that help to avoid or at least delay opportunistic diseases.
Social discrimination and psychological stress were other reasons for a cautious approach towards the test. Could not the discovery of a positive test result induce depression, self-isolation and indirectly, negatively affect the immune system? And how to guarantee that the results would remain secret without adverse effects on the social position of the HIV positive patient? Therefore, the creation of anonymous test sites providing individual pre- and post test counseling became a major issue. These now exist in most countries. They are run on an informal basis by gay health services, by medical associations such as Médecins du Monde in France of formally managed by the health authorities. In Finland, where the social security number of all persons testing positive is registered, an exception has been granted to the Finnish AIDS Information and Support Center which has a temporary permission to carry out completely anonymous testing in five cities. In Austria, the OAH (Austria AIDS-Hilfe) is responsible for anonymous testing offered in the capital cities of the nine Länder.
Counselling efforts are still insufficient: according to a German survey, over half ot the tests were not accompanied by counselling. In Ireland, the figure is 53%. Of the Irish gays who did benefit from counselling, only 62% were satisfied with what counselling they got.
According to the surveys discussed in this article, a very high proportion of male homo- and bisexuals have already been tested. Only in countries where AIDS organisations and public authorities held a common sceptical position towards testing, the proportion of tested gay men is significantly lower (Netherlands). In Germany and France, more than 50% of respondents had taken the test at least once before 1988, in 1990 this proportion rose to 72% in France. The Oslo municipality's AIDS center has approached all gay bars and discos one weekend, in spring of 1990. 1082 forms were distributed for finding out the frequency of testing: 76% of the 741 respondents had already been tested.
Empirical evidence suggests that the decision to take a test is heavily influenced by perceived risk behaviour, such as unprotected anal intercourse and numbers of partners. In France, where 30% of survey respondents had already taken the test in 1986, this tendency is well documented: voluntary testing started among gays with the highest level of sexual activity, including risky practices, in big urban centres and in the highly educated middle classes. As the tested population became larger, including less exposed segments of the gay population, self-reported seroprevalence rates decreased from 23% in 1986 to 19% in 1990. Self-reported seroprevalence rates were lower in Germany, with 13%, among tested male homo- and bisexuals. In the Netherlands a similar proportion was measured on a much smaller basis of tested people (17% as against 60% in Germany and France). In England and Ireland, one finds even lower seroprevalence rates of some 10%. In Italy HIV testing was reported by 48% by the respondents of the 1989 survey, 4% reported to be HIV positive, 87% HIV negative, 9% did not specify the result (Table 7). These country differences in self-reported serostatus are coherent with AIDS-surveillance statistics concerning homo- and bisexual men. Although methods with self-reported test results do not allow us to measure precisely HIV incidence, they allow us, in replication studies, to follow HIV diffusion trends. Therefore, they are an efficient early warning system.
All seroprevalence data have recruitment biases. In general, the more "specific" the recruitment of the population under observation, the higher this seroprevalence rates: particularly high in VD clinics and epidemiological cohort studies recruiting participants among people seeking care, these rates are lower in self-reported

	UK (1988)[1]	Netherlands (1987)[2]	Ireland (1988)[3]	Germany (1988)[4]	Switzerland (1990)[5]	France (1990)[6]	Italy (1989)[7]
Non tested	58%	83%	60%	43%	33%	28%	52%
Tested	42%	17%	40%	57%	67%	72%	48%
HIV+ of tested men	9%	12%	9%	13%	13% *	19%	4% *
	(n = 1339)	(n = 522)	(n = 265)	(n = 1122)	(n = 720)	(n = 2000)	(n = 1340)

1. Mc Manus, Mc Evans
2. R. Tielman, S. Polter
3. Gay Health Action
4. M. Bochow
5. J. B. Masur;* 6 % do not give the test result
6. M. Pollak
7. H. Sasse, et al.;* 9 % do not give the test result

Table 7. *Self reported test results.*

sociological surveys. Sampling differences account for these variations much more than systematic response biases linked to hiding.
Another phenomenon well documented in French surveys is the massive entry of gay men into medical surveillance. Half of the tested respondents have undergone the test more than once. Several phenomena account for this: almost all seropositives, asymptomatic or not, enter medical surveillance based on regular serological and immunological tests; some people also take the test to reassure themselves from time to time. In a minority group with unsafe sex behaviour, repeated testing is used as an instrument for managing fears of infection. This tendency of medical self surveillance takes place in a context of problematic doctor-patient relationships: in France, only half of gay people disclose their sexual orientation to their doctor. This figure has hardly changed over the last years.
Does voluntary testing matter for prevention? Studies comparing the sexual behaviour of not tested and tested seronegative and seropositive male homo- and bisexuals indicate more behaviour changes among people that tested positive, than those who tested negative. Tested people also show more changes than untested ones. Nevertheless, these differences are very difficult to interpret as van Griensven writes in a Dutch study: "Apart from serological testing and its results, many other factors might have influenced the behaviour of the men under study. Counselling for example may interact with the effect of testing itself... Because the ethical and practical considerations prohibits experimenting with the factors mentioned above, their individual contribution to the effect of testing cannot be distinguished" [24].
A French study comes to similar conclusions: "There is no clear causal relationship between testing and safer sex. Rather the same sociocultural factors are conducive to taking the test and to starting safer sex:

– a realistic assessment of one's risk exposure;
– high education and middle class background;
– social acceptance of one's homosexuality and the capacity for safer sex negociation" [25].

Concluding remarks

The analysis of men having sex with men has more general implications. As the group first hit by the epidemic, it still represents more than 50% of AIDS cases in Western Europe. Therefore they are an important observation ground for the feasibility and the maintenance of behaviour changes over longer time periods.
Many characteristics of HIV infection create specific difficulties for traditional behavioural models:

– the nature and complexity of the threat presented by AIDS is extreme and extends to one's most intimate relationships;
– extreme uncertainty characterizes the entire process from exposure through infection to diagnosis;
– the social context creates risks of stigmatization of HIV carriers and people with AIDS.

But, it is also obvious that rapid changes in human behaviour are occuring because of the threat of AIDS. Most empirical studies on factors relating to sexual behaviour change among male homo- and bisexuals began after substantial change had occurred, and thus provide greater insight into the reasons for sexual change among later, rather than early, adopters of safer sex[26]. Among the different factors discussed one finds the amount of information, attitudes and beliefs about transmission, perceived personal risk exposure, social proximity to AIDS and seropositive friends, socioeconomic status and age, types of relationships, self-identity and self-esteem (in particular with respect to one's being gay), the test and its results[26]. Information and good knowledge about the risk is a necessary precondition for perceived need for personal change and the change itself. But information in itself is not sufficient for explaining change. Social proximity with infected people induces the feeling of personal risk exposure and encourages low-risk behaviours. This is reinforced by the extent of social integration in a network of supportive groups, and by the degree to which one's social environment accepts homosexuality. The same dimension is often approached in a psychological fashion under the concept of "self-identity", "self-esteem". For legal reasons and because of sampling difficulties we lack any large research projects concerning teenage sexual behaviour of less than 17 years old. Surveys undertaken in schools most of the time limit themselves to the perception of AIDS and attitudes, but pose few questions about behaviour.

For more isolated men who have sex with men, or for young men struggling with their gay identity, the desire to experience and to fulfil a sexual need can overwhelm known dangers of unsafe sex. These situational and personality factors have been put forward in qualitative research using indepth interviewing. Even in later stages of the epidemic, men knowledgeable about the risks of unsafe sex continue this practice. For some, there is a need for intimacy, and they feel that unsafe sex is the best way to give and receive love. Another reason for continuing unsafe practices is fatalism and a sense of there being no future.

Traditional epidemiological risk factors and sociocultural variables do not seem totally adequate for the understanding of differences of patterns of change in sexual behaviour. We stress the necessity of developing analysis at three levels:

- personal predispositions;
- immediate environment (community);
- macrosocietal factors.

Adaptation of sexual behaviour to the risk of HIV infection is very rapid in the most exposed segment of the population men having sex with man, and unequally distributed according to proximity to the disease, social class, age and education. Therefore only longitudinal research, starting at an early moment of the process, such as the yearly French surveys, allows us to understand the whole cycle and group specific forms and rates of patterns of change. Finally, control of HIV transmission requires that changes in behaviour be applied consistently in time and in all types of situations. Factors which contribute to initiate behavioural change are not necessarily the same that would favour a persistent change and instability in behavioural risk reduction has often been observed. The French yearly surveys relate the amount and the speed of these changes to relatively homogeneous subgroups observed since 1985 and show three different phases in the process of change[23]:

Homosexuals living in localities of less than 20000 inhabitants, often hiding their sexual preference and whose homosexuality is not accepted by family and colleagues, feared social discrimination as such if not more than being contaminated. Lack of solidarity with a "gay group and destiny" was widespread; capacity to individual behaviour changes was limited and diffusion of condom use was slow before 1987; propensity for repressive measures was high (compulsory testing, quarantining). The feeling of being unable to protect themselves with adequate behaviour changes explains this claim as condom use became more widespread.

Blue collar gays with a low level of education felt hardly concerned by AIDS in 1985. Only after 1987 did they recognize the risk and start to change sexual behaviour. Still today, they have significantly lower levels of protection than average.

Lower middle class gays in big cities (service sector) showed the highest degree of denial. Although being well informed about the disease, they often presented the "risk group" classification as an attempt of discriminate against them. Their biographical background, including breaking up with their family because of their being gay, explains their ambivalence of reactions in the early days of the epidemic. Only in 1986 did they start to rapidly change their behaviour.

Higher middle classes, in particular intellectual professionals, were the first to adapt quickly to the risk of HIV transmission by giving up anal intercourse or by using condoms. They were also the first to know HIV carriers in their personal environment. The first voluntary associations recruited their first members and volunteers from among them.

Before 1986, scepticism prevailed among young homosexuals below age 25. They identified AIDS with a disease of their parent's generation and resented the labelling of

the "young" as a specifically exposed group. After 1986, differences appear in this age group: students follow the model of the higher middle classes, the others that of blue collars. Today the whole age group has joined the general protection level.

Longitudinal observations also point to the change of correlations among these different factors in time as the epidemic progresses.

Phase 1: before 1985–1986:

Emergence of "pioneers" practising new sexual behaviours from among those who where the first to know people affected by the disease personally. To this proximity, one has to add factors reinforcing the predispositions and capacities to change: self-esteem and the feeling of being socially accepted; confidence in medical authorities and concern with health. Although the approach of these safer sex pioneers looks like the result of an individual rational "decision", it is overdetermined by their middle class status and high educational level.

Phase 2: 1986–1988:

With the more widespread use of the test, the epidemic becomes "visible". Particularly inside concerned groups, such as the gay community, there emerges a feeling of identification with a collective risk and a new positive ethics of sexual precaution, which goes beyond people who know infected individuals personally. Rapid diffusion of behaviour changes in all middle classes is favoured by this new sexual ethic, and the identification with a gay destiny and a community. This phase was initiated and promoted by voluntary associations while the government campaign came in later, reinforcing the already engaged swing.

Phase 3: after 1988:

After a process of rapid diffusion of sexual behaviour changes, one observes its limits, which are of a macrosocial nature. The factors usually perceived as being at the origin of cumulative socioeconomic handicaps and inequalities, also limit risk adequate behaviours: low socioeconomic status and fragility (such as unemployment), lack of confidence in the future, low educational level. In these cases personal counselling is of particular importance.

Consensus will be easily reached among social scientists about some general conclusions that emerged from the literature on behavioural risk modifications, especially through health information and education, which have already been confirmed by studies on AIDS, including the surveys under review. Resulting from interactions, sexuality cannot be changed by individual decisions alone. Because sex is a powerful motive and because sexual practices are maintained by past experiences, immediacy of gratification, reinforcement by fantasies and interpersonal influence or even coercion, it can be expected that sexual activities are difficult to change through information provision alone. One can easily agree with Nelkin [27] that the common examples of direct behavioural responses to information are "all in areas in which alternative choices are available so that changes in behaviour require no significant changes in life-style". All studies among homosexual/bisexual men have confirmed that individual knowledge about AIDS risk is not statistically related with reported frequency of high-risk sexual practices for HIV infection or with observed behavioural change to lower exposure.

Research on behavioural change has repeatedly pointed out that trust and credibility in the source of information and social reinforcement by peers within the community are necessary conditions for effective intervention. Early findings of experimental social psychology on "small group decisions" have emphasized the importance of adaptation to ambiguity or change in the environment through interpersonal communication and referred to mechanisms such as group polarization and group pressure, social confirmation, norm formation and minority innovation [28].

In one of the largest American cohort studies of homosexual/bisexual men, supportive peer norms appeared to be the only factor related to longitudinal behavioural change for risk reduction of HIV sexual transmission [29].

Finally, at a macro-societal level, risk perceptions are heavily influenced by political, cultural and social factors, such as social class or community involvement. Attitudes towards risk are closely embedded in a system of beliefs, values, and ideals that constitute a culture (and subculture): thus, different cultures and social groups will emphasize certain risks and minimize others. Perceptions of risk are also closely connected to legitimating of moral principles. A judgement about risk can be a social comment, reflecting points of tension and value conflicts in a given society.

After years of "safer sex learning", one can formulate an optimistic or a pessimistic prediction for the near future:

- The optimistic prediction reads: a new level of sexual behaviour and sexual activity could be reached, one that takes into account the risks involved, one in which adequate coping strategies are integrated in such a way that further urgent need for change in sexual behaviour would be rendered superfluous.
- The pessimistic prediction reads: after a few years of important behaviour changes and regularity

in condom use, and in a climate with fewer primary prevention campaigns, increased behaviour inconsistency will result in high incidence rates after a slow down of the epidemic among men having sex with men in the late 1980s.

The first optimistic hypothesis will largely depend on continued prevention efforts in the community and in society at large. The second pessimistic hypothesis is favoured by lower investment in prevention, public guesses about a levelling off of the epidemic and lower levels of personal concern and risk awareness.

For monitoring these changes, nationally and on the European level, comparable questionnaire instruments should be developed, usable for newspaper and snowball self-administrated surveys. For accessing the male homo- and bisexual population, the channels used should be adapted to local realities. Such surveys should be replicated every two or three years.

Zusammenfassung

Evaluation der AIDS Prävention bei Männern, die mit anderen Männern sexuelle Kontakte haben: Die Erfahrungen Westeuropas

Dieser Artikel zeigt die wichtigsten Resultate einer konzertierten Aktion der europäischen Gemeinschaft im AIDS-Bereich. Es werden hier Methoden und Resultate von Forschungsprojekten diskutiert, die in diesem Gebiet in den achtziger Jahren durchgeführt wurden.

Résumé

Evaluer la prévention du sida auprès des hommes ayant des contacts sexuals avec d'autres hommes: L'expérience de l'Europe de l'Ouest

Cet article présente les principaux résultats d'une action concertée de la Communauté Européenne sur l'évaluation de la prévention du sida. Les méthodes et résultats de projets de recherche menés dans ce domaine dans les années 1980 y sont discutés.

References

1 *Fay RE, Turner ChF, Klassen AD, Gagnon JH.* Prevalence and Patterns of Same-gender Sexual Contact among Men. Science 1989; *243*:338–348.

2 ILGA, Second ILGA Pink Book. A global view of lesbian and gay liberation and oppression. Utrecht Series on gay and lesbian studies, *12*, 1988.

3 *Pollak M.* La Diffusion différentielle de l'épidémie du Sida. Une approche sociologique. Cahiers de sociologie et de démographie médicale 1988; *28*, (3), 243–262.

4 *Prieur A.* Kjaerlighet mellom menn i aidsents tid, Pax, Oslo, 1988. Prieur A, Norwegian Gay Men: Reasons for Continued Practice of Unsafe Sex. AIDS Education and Prevention, an Interdisciplinary Journal 1990; *2*, 109–115.

5 *Griensven GJP, Tielman RAP, Goudsmit J, et al.* Risk factors and prevalence of HIV antibodies in Homosexual Men in the Netherlands. Am. J. Epidemiology 1987; *125*, (6), 25–34.

6 *Melbye M.* To participants in the study by the Cancer Research Institute from 1981 conccerning Kaposis sarcoma/AIDS. PAN-bladet Landsforeningen for bosser og lesbiske, Copenhagen, 1989.

7 GHA Survey Results. Special Issue of Aids Action News August 1989, 3.

8 *Cavailhès J, Dutey P, Bach-Ignasse G, Rapport Gai.* Enquête sur les modes de vie des homosexuels, Persona, Paris, 1984.

9 *Ebbensen E.* AIDS in Denmark, Munksgaard, Copenhagen, 1988.

10 *Sasse H, Bigagli A, et al.* Studio dei comportementi sessuali di un campione della populazione omosessuale italiana in relazione all'

infezione da HIV. Rapporto, Centro Operativo AIDS, Instituto Superiore di Sanita, Arci Gay, Rome and Bologna, December 1990.
11 *Mc Manus T, Mc Evoy M.* Some Aspects of Male Homosexual Behaviour in the UK. B.J. Sexual Medicine *20*, 110–120.
12 *Bochow M.* AIDS: wie leben schwule Männer heute?, Berlin, 1988. Bochow M, AIDS und Schwule. Individuelle Strategien und kollekive Bewältigung, DAH, Berlin, 1989.
13 *Pollak M, Schiltz MA, Laurinda L.* Les homosexuels face à l'épidémie du sida. Revue d'épidémiologie et de santé publique 1986; *34*, 143 sq.
14 *Pollak M, Schiltz MA.* Six années d'enquête sur les homo- et bisexuels masculins face au sida. Livre des données, GSPM, Paris, 1990.
15 *Tielman RAP, Polter S.* Evaluation of the Dutch AIDS prevention campaign among homosexual men. Paper presented at the 4th International Conference on AIDS, Stockholm, 1988.
16 *Dubois-Arber F, Franck D.* Evaluation des campagnes de prévention contre le sida en Suisse les Homosexuals. Cahiers de recherche et de documentation, Institut universitaire de médecine social et préventive, Lausanne, 1987.
17 *Dannecker M.* Sexualwissenschaftliche Studie über das Sexualverhalten und den Lebensstil homosexueller Männer. Kohlhammer, Frankfurt, 1990.
18 *Bochow M.* Aids and gay men: individual strategies and collective coping. European Sociological Review September 1990; *6*, (2).
19 *Pollak M.* Les homosexuels et le sida. Sociologie d'une épidémie. Métailié, Paris, 1988.
20 *Coxon APM, Davies PM, Mc Manus TJ.* Longitudinal Study of the Sexual Behaviour of Homosexual Males under the Impact of AIDS. (Projeect SIGMA). A Final Report to the Department of Health, London April 1990, p. 63.
21 *Dannecker M, Reiche R.* Der gewöhnliche Homosexuelle. Fischer, Frankfurt, 1974, and Dannecker M, 1990.
22 *Bottzauw J, Hermansen K, Tauris P.* Alterations in the sexual habits of a group of homosexual persons after information about AIDS. Ungeskr. Laeger 1989; *151*, 1920–1922.
23 *Pollak M, Schiltz MA,* 1990, p. 82.
24 *van Griensven GJP, et al.* Epidemiology and prevention of HIV infection among homosexual men. Ph. D. thesis, Amsterdam 1989, p. 41–42.
25 *Pollak M, Schiltz MA.* Does voluntary testing matter? Paper presented at the 4th International Conference on AIDS, Stockholm, 1988.
26 *Cohen M, Couturier PV.* Designing AIDS prevention programs on three framework explaining sexual behaviour change in gay populations. Paper presented to the Conference on Sexually transmitted diseases, Chamonix, 1990.
27 *Nelkin D.* Aids and the social sciences: a review of useful knowledge and research needs: Review of infections Diseases 1987; *9*, (5) 980–986.
28 *Kelly JA, St Lawrence JS.* The AIDS health crisis. Psychological and social interventions, New York and London, Plenum Press, 1988.
29 *Kingsley L, Detels R, Kaslow R, et al.* Risk factors for seroconversion to human immunodeficiency virus among male homosexuals. Lancet 1987; *1*, (8529), 345–349.

Address for correspondence

Marie-Ange Schiltz
Groupe de Sociologie politique et morale
Ecole des Hautes études en Sciences sociales
Centre national de la recherche scientifique
54, Bd. Raspail
F-75006 Paris/France