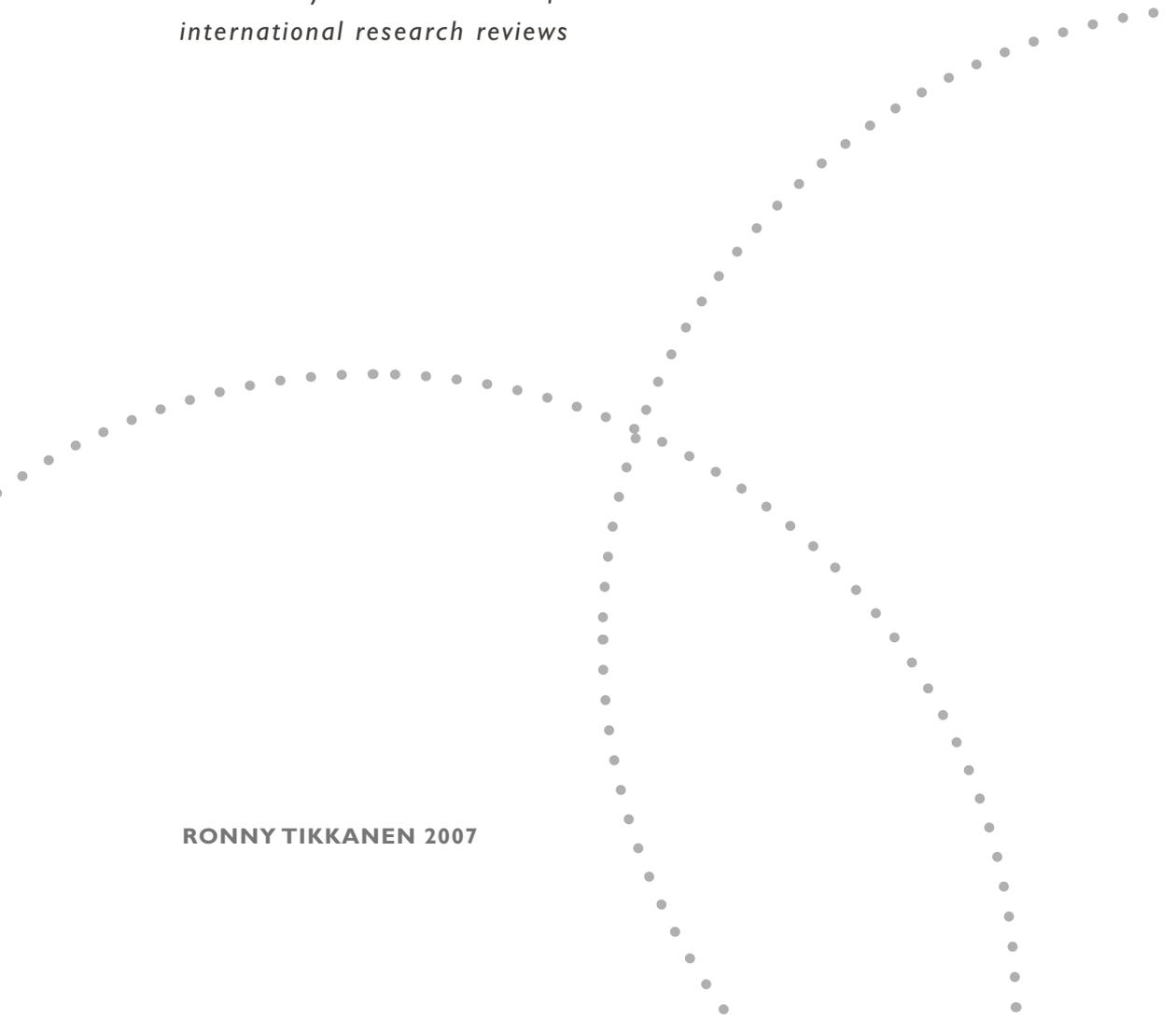


KNOWLEDGE-BASED HIV PREVENTION INTERVENTION

Targeting men who have sex with men

*A summary and discussion of six
international research reviews*

RONNY TIKKANEN 2007



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PREFACE

HIV/AIDS WAS ORIGINALLY expected to follow the course of earlier epidemics – short, intense and devastating, but soon curbed by a vaccination programme. However, the epidemic has been slow, steady and elusive despite medical progress. HIV is here to stay, and there is more of a need for effective, ongoing prevention interventions than ever before.

Swedish population studies show that neither the public in general nor young people in particular believe that HIV/AIDS is still a problem in Sweden. But the truth is that the likelihood of encountering a person with HIV infection has never been as great as it is now. Precisely because people are living with HIV instead of dying, the group is growing year by year. As in the rest of Europe the annual number of new infections has begun to increase again at a worrying rate.

Studies show that most people diagnosed with HIV take their responsibility not to infect others seriously and that treatment helps reduce the risk of transmission. Nevertheless, at least one Swede is infected every day. Because there are no obvious symptoms of primary infection, people have no way of finding out unless they choose to be tested. The prevalence of other STIs is also on the rise.

Some groups of people are more vulnerable to HIV infection than others and therefore have been targeted for special prevention efforts. Men who have sex with men (MSM) face the greatest risk of all such groups. This has been the case ever since HIV first appeared in Sweden, even though the prevalence of HIV is low in an international comparison.

An alarming finding is that young MSM do not protect themselves against HIV as much as older ones and that they lack basic knowledge of the risks involved.

This is the first Swedish report to summarise the results of international research about HIV prevention intervention for MSM. Unfortunately, such research has not been conducted on a continuous basis. But Ronny Tikkanen, holder of a PhD in Social Work from the University of Gothenburg and currently a researcher at Malmö University, has made an excellent job of highlighting the conclusions that can be drawn from the sometimes scanty material. The results reveal both what is already known and what requires additional research. The report shows that there has been virtually no research in Sweden concerning the issues surrounding intervention. However, Dr Tik-

kanen has included descriptions of interventions by NGOs and the healthcare sector on either a permanent or ad hoc basis over the past 20 years. Many of the interventions are in line with subsequent research findings described in this report. The slower progression of the epidemic during the period may be attributable to these efforts. But the trend appears to be shifting. Sustained, improved health promotion and prevention efforts for MSM are sorely needed at present.

The purpose of this report is to serve as a basis for planning and intervention efforts by non-profit organisations, county councils and local government units, as well as to structure research and educational initiatives. Our hope is that the findings will provide direction for future intervention and research.

As part of its mission to disseminate knowledge and support various sectors in combating HIV/AIDS, the National Board of Health and Welfare will arrange seminars throughout Sweden to discuss how the findings of this report can be used and implemented at the local level. Research must be presented to the larger community in a way that allows it to shape policy and practice. Dr Tikkanen will actively participate in the initiative.

This report is the first in a series of summaries concerning the state of research about HIV and other STIs. We hope that the reports will help us promote prevention interventions that are more knowledge-based and effective.

Viveca Urwitz

Head of Unit for National Coordination of HIV/STI Prevention

INTRODUCTION – PURPOSE AND STRUCTURE

THE PURPOSE OF THIS REPORT is to summarise international research reviews of effective HIV prevention intervention for men who have sex with men (MSM). Initiated by the Unit for HIV Prevention and Control of the Swedish National Board of Health and Welfare, the report includes a summary and discussion of the results of six international research reviews. The reviews examine ways of designing effective, successful HIV prevention interventions for MSM. This report also contains an overview of published research about such efforts in Sweden.¹ The conclusion of the report discusses the need for knowledge-based HIV prevention intervention in Sweden. Margareta Forsberg, holder of a PhD in Social Work from the University of Gothenburg, has been engaged in a similar project for adolescents. A report entitled *Sexuell hälsa bland ungdomar – internationella och svenska erfarenheter av förebyggande arbete (Sexual Health in Young People: International research summaries and Swedish experiences of preventive work)* (2007) presents Forsberg's findings.

Evidence-based interventions have long been an established healthcare concept. The term dates back to the 1970s (Bergmark 2005). With regard to social interventions and treatment methods (such as the substance abuse activities of the social services), the evidence-based discourse has been more pronounced over the past decade. The discourse has revealed theoretical disagreements among researchers with respect to measuring the effectiveness of various interventions. The discourse remains important as a means of focusing on the integration of research and clinical practice. The evidence-based discourse about HIV prevention intervention has been steadily growing, particularly in the present decade. This report presents several research reviews that critically examine the effectiveness of various interventions to reduce the number of people who engage in sexual risk behaviour or become infected with HIV.

1. *The Swedish National Encyclopaedia* defines intervention as “a scientific umbrella concept covering both prevention and treatment methods.” *Wikipedia*, the free encyclopedia, defines a health intervention as “an effort to promote good health behaviour such as physical exercise or to prevent bad health behaviours, e.g. promoting tobacco smoking cessation or discouraging the use of illicit drugs or excessive drinking. Health interventions may be run by a variety of organizations, including departments of health and private organizations.”

This report uses the term *knowledge-based* rather than *evidence-based*, which is narrower and more limited to specific methodologies. While including evidence-based methods, discussion of knowledge-based interventions opens the door to consideration of ways in which knowledge generated by clinical practice about the needs and behaviour of particular groups can make prevention efforts more effective and successful. Knowledge-based interventions also include theoretically grounded prevention methods, one indication of a successful approach.

This report is based primarily on the results of six international research reviews published in 1997–2005 (see Table 1). The reviews differ in a number of ways. Four of them contain meta-analyses that combine the results of various studies and calculate the total effectiveness of a specific intervention or method. Three of them contain a systematic review of successful HIV prevention interventions, describing and discussing the percentage of studies that show favourable and unfavourable results. In other words, no statistical effect size calculation was performed (see the examination of research review methodology in Bergmark 2005). Subsequent parts of this report discuss the approaches taken by the six international research reviews in greater detail.

Table 1. Research reviews

	Number of articles included in review	Publication period	Type of analysis or summary in research review
Herbst et al. (2005)	33	1989–2005	Meta-analysis
Johnson et al. (2002)	9	1989–1997	Meta-analysis
Wolitski et al. (1997)	4*	1990–1995	Systematic review
Weinhardt et al. (1999)	8*	1987–1991	Meta-analysis
Ellis et al. (2003)	12	1987–1997	Systematic review**
Rees et al. (2004)	8***	1997–2002	Meta-analysis and systematic review (narrative synthesis)

* Wolitski et al. contains 35 articles and Weinhardt et al. contains 27 articles. The table and bibliography of this report include those studies (4 and 8 articles respectively) that focus on MSM and changes in sexual risk-taking/behaviour.

** Consists of an analysis of 2 research reviews.

*** The research review also includes 10 studies focusing on the views and experiences of MSM with regard to HIV-related sexual health.

The international research reviews also differ in terms of scope, as well as the level of detail at which the results are discussed and analysed. The first four reviews are articles published in scientific journals. As a result, they are limited to 6–12 pages each. Furthermore, they discuss the content of the specific methods to a limited extent only. The other two reviews are considerably longer, while discussing and analysing the results in a more in-depth manner.

The six research reviews cover a total of 46 articles (summarised in Appendix 1). Nineteen of the articles are cross-references among the first, second, fifth and sixth reviews. The appendix briefly describes the HIV prevention interventions examined by the various articles. This provides readers with the opportunity to learn more about a particular method or study. The bibliography contains complete reference information for the articles.

The six research reviews also vary in terms of focus. The first, second, fifth and sixth are more general, while the third and fourth focus on a specific aspect (counselling and testing) of HIV prevention intervention.

SIX INTERNATIONAL RESEARCH REVIEWS OF HIV PREVENTION INTERVENTION FOR MEN WHO HAVE SEX WITH MEN

THIS SECTION OF THE REPORT presents the results of the six international research reviews of HIV prevention intervention for men who have sex with men (MSM).

A Meta-Analytic Review of HIV Behavioral Interventions for Reducing Sexual Risk Behavior of Men who have Sex with Men (Herbst et al. 2005)

This article, which contains a meta-analysis of the effectiveness of HIV prevention interventions for MSM, was written by a research team at the Centers for Disease Control and Prevention (CDC) in the United States. A systematic search of published and unpublished research results identified more than 1 000 articles and reports that in some way concerned HIV prevention intervention for MSM. A carefully considered procedure reduced the number to 33 based on a number of selection criteria.² The researchers then calculated odds ratios as a measure of effect size, i.e., the success of the various interventions.³

Because the studies used differing measures of successful prevention, the calculation of odds ratios introduced certain reliability problems. Most of the studies (24) used a reduction in the frequency of unprotected anal intercourse (UAI) as a measure of success. The great majority of those studies made no

2. The research team searched for articles in English that were available up to July 2003. 1 066 articles were excluded because they did not clearly focus on HIV prevention interventions for MSM. Six articles were subsequently excluded because they lacked sufficient information for an analysis of effect size.

3. The odds ratio represented effect size in the various studies included in the research review. An odds ratio less than 1 means a lower value for the dependent variable (such as less frequent UAI or fewer sexual partners). An odds ratio greater than 1 means a higher value for the dependent variable (such as condom use).

distinction between UAI with various types of partners and with a partner of unknown HIV status. But two studies distinguished between UAI with a partner of known or unknown HIV status and used a reduction in the frequency with a partner of unknown status as a measure of successful prevention.

Almost one third of the studies in the research review used a reduction in the number of partners as such a measure.⁴ Among other measures employed by the various studies were condom use during anal intercourse (nine studies) and a reduction in the frequency of unprotected oral intercourse (four studies). A subsequent part of this report will discuss the reliability issues that may arise when attempting to measure the success of a specific HIV prevention intervention.

Eighteen studies (randomised controlled trials) in the research review used a control group that received no intervention. Ten studies compared the results of various groups that had received the same type of intervention. Five studies lacked both a control and comparison group but were considered to meet the requirements for scientific evidence.

What results did the meta-analysis generate? The research team performed two types of analyses of the data. The first type looked at the total impact of the studies on the frequency of UAI, a reduction in the number of partners, increased condom use during anal intercourse or a reduction in the frequency of unprotected oral intercourse. The second type involved stratified analyses, i.e., determination of whether specific aspects of the interventions were effective.

The first issue is the total impact of the various interventions on the behaviour of the informants. The overall meta-analysis shows highly favourable results with regard to a reduction in the frequency of UAI. Combining the results of all studies that used this measure reveals a considerable reduction in the odds that participants would engage in UAI.⁵ The nine studies that employed condom use during anal intercourse as a measure found a significant increase in the odds that participants would use condoms during anal intercourse.⁶ The initial analysis of the ten studies that used a reduction in the number of sexual partners as a measure of effective prevention showed no statistically significant impact. The researchers identified a particular study (significant outlier) that deviated and was thereby eliminated from the analysis. Thus, the nine remaining studies found that the number of sexual partners

4. Most of the studies combine different kinds of measures.

5. The total odds ratio is 0.77 with a 95 percent confidence interval: 0.65-0.92.

6. The total odds ratio is 1.61 with a 95 percent confidence interval: 1.16-2.22.

was likely to decrease after intervention.⁷ The four studies that used a reduction in the frequency of unprotected oral intercourse as a measure of effective prevention showed no significant impact. Based on the above results, the researchers draw the conclusion that HIV prevention interventions for MSM are effective in that they reduce sexual risk behaviour.

As mentioned above, the researchers also performed a stratified analysis of specific aspects of the various interventions. The most clear-cut result of the analysis was that interventions based on a well-defined theoretical framework had a more pronounced impact (reduction in the frequency of UAI) than those that were not explicitly based on such a framework. Not only that, two theoretical frameworks (diffusion of innovation and the model of relapse prevention) were also more effective than others. Social learning theory and other frameworks showed no significant impact. A subsequent part of this report will discuss the role of theoretical models in greater detail.

Another result emphasised by the researchers is that multi-component interventions are more effective than single-component interventions. The stratified analysis also revealed that group-level methods (discussions or role playing) could be combined with others in a particularly constructive way. Furthermore, multi-session interventions, or single-session interventions that lasted for at least 4 hours, were more successful. The analysis also found that interventions became more effective in terms of reduction in the frequency of UAI the longer the time span between sessions (with a significant lower limit of 3 weeks).

The stratified analysis highlighted specific aspects of interventions for which a number of results show *no* differences. For instance, the interventions proved to be equally effective regardless of the age and educational level of participants. Moreover, the analysis demonstrated that HIV prevention interventions were just as effective after introducing combination therapies (1996) as before doing so. Given that some of the interventions were carried out prior to 1996, this is important to keep in mind.

What criticism can be levelled at the methodology employed by the U.S. research team? The article itself calls attention to and discusses most of the vulnerabilities inherent to the meta-analysis. In the first place, the weaknesses of individual studies affect the overall reliability and validity of any meta-analysis. As mentioned above, the main issue is the validity of the research, i.e., how the various studies measured successful HIV prevention intervention. Is a reduction in the frequency of UAI, which most studies used, a valid

7. The total odds ratio is 0.76 with a 95 percent confidence interval: 0.61-0.94.

measure? Both Swedish and international empirical evidence indicates that MSM adapt their practice of UAI to partner type (see research review in Tikkanen 2003). Many of today's researchers call attention to this dynamic when exploring the frequency of UAI among MSM. Current studies are much more likely to ask participants about both partner type and knowledge of HIV status when inquiring about UAI. The U.S. team also points to reliability issues, particularly with respect to statements by informants, with which research about sexual behaviour constantly wrestles. For instance, long recall times (such as 12 months) may lead to false recollection or repression (see methodological discussion in Catania et al. 1993). The Swedish MSM questionnaire study dealt with that issue by combining 12-month recall time with questions about the last time the respondent had sex with a man (see Tikkanen et al. 2006). The above discussion about validity and reliability underlines the importance of critical thinking about outcome measures when conducting future evidence-based studies.

The researchers conclude by offering a glimpse of evidence-based HIV prevention practice in the United States. In their view, passing on evidence-based research to those who work with prevention on a daily basis poses a genuine challenge. As part of this effort, the Centers for Disease Control and Prevention (CDC) has a separate website to facilitate the use of scientifically documented methods.⁸ Because Swedish actors in the field of HIV prevention are fewer and more amenable to consensus concerning a new methodological approach than their counterparts in the United States, it is significantly easier for them to disseminate information and thereby use documented methods. Furthermore, Sweden has an established collaborative effort between research and practical prevention that can be built on. But it is important to adapt methods to Swedish culture and circumstances. As the researchers point out in their concluding discussion, such adaptation is particularly needed when attempting to reach specific subgroups of MSM.

8. <http://www.effectiveinterventions.org>

HIV Prevention Research for Men who have Sex with Men: A Systematic Review and Meta-analysis (Johnson et al. 2002)

The meta-analysis published by Johnson et al. is largely reminiscent of that by the Herbst research team. The main differences are that the reports covered by Johnson et al. were published until the end of 1997 and described interventions performed in the United States only. The meta-analysis includes nine studies, all of which focused on MSM and met the criteria for scientific quality set by the research team. The nine studies used differing types of measures of successful intervention. All of the studies relied on behavioural measures (frequency of unprotected intercourse, condom use or number of partners), and all of them included UAI. The researchers coded the various studies by identifying independent (explanatory) variables. They wanted to explore whether or not the variables had any impact on the outcome of an intervention. The variables involved both the content of the intervention (such as strengthening interpersonal skills or self-esteem) and how it was carried out (such as at the individual or group level).

The overall analysis showed a 26 percent reduction in men engaging in UAI in the intervention groups compared with the control groups (95 percent confidence interval: 11-43 percent).⁹ The stratified analysis found that studies that included interpersonal skills training were particularly successful, significantly reducing the percentage of participants engaging in UAI. But the data are too limited to determine which type of intervention to strengthen interpersonal skills is most effective. An overview of the nine studies shows that the majority contained some type of interpersonal component. For instance, participants rehearsed communicating about and negotiating safer sex or discussed relationship issues in a group.

The meta-analysis revealed that community-level interventions were equally successful as small-group interventions (no criteria for what constitutes a small group are specified). Three of the nine studies included community-level interventions. Two of these interventions used popular opinion leaders. The third study employed a publicity campaign and training of peer educators. But care should be exercised not to draw hasty conclusions about similarities between community-level and small-group interventions. A reasonable assumption is that they satisfy different needs of MSM and are

9. The kinds of control groups varied among the studies that were included in the meta-analysis.

not interchangeable. A subsequent part of this report will discuss that issue in greater detail.

Thus, the meta-analysis of Johnson et al. provides some insight into the ways in which the content and format of interventions affect their effectiveness. Can particular groups of MSM be identified that changed their sexual risk behaviour more than others following intervention? The researchers found that men younger than 30 and those who had more frequent UAI were more likely to change their behaviour after HIV prevention intervention. But they advise against drawing sweeping conclusions on that basis, given that a change is always more evident among people with a highly frequent behaviour of some kind.

Similarly, the data generated a certain age bias – because UAI was more common among younger men, the impact of intervention may have been manifested more clearly in them.

Two analyses of the effects HIV testing and counselling in connection with HIV testing have on sexual risk behaviour (Wolitski et al. 1997; Weinhardt et al. 1999)

This report deals jointly with two research reviews that concentrate on HIV counselling and testing (HIV CT). Neither of the reviews focuses specifically on MSM, but they include other groups – heterosexuals and injecting drug users (IDUs). The research review of Wolitski et al. includes four reports that concentrated on MSM and changes in sexual behaviour after HIV CT. The review by Weinhardt et al. includes eight MSM references. The review by Wolitski et al., but not Weinhardt et al., contains a separate discussion about MSM. A shortcoming of both reviews is that they do not analyse the impact of counselling structure and *content*, that is to say they do not perform stratified analyses based on differing results for example between supportive counselling and advisory counselling. The lack of such analyses probably helps explain why some studies found favourable behaviour changes following HIV CT and others did not. The review by Wolitski et al. raises the issue in its concluding discussion, arguing that future studies of interventions in connection with HIV CT should analyse how the various components (counselling before and after testing, as well as the test results) affect behavioural changes. What do the results of the reviews, however contradictory, indicate?

Wolitski's research team offers a systematic review of studies that measured the impact of counselling in connection with HIV antibody testing. As a result,

the discussion centres exclusively on the findings of the various studies. In other words, the review lacks a meta-analysis with regular effect size measures. The researchers include four studies that examined changes in sexual behaviour after participants received HIV testing and were scheduled for counselling or other support services. Two of these studies (Huggins et al. 1991 and Zapka et al. 1991) found a significant reduction in sexual risk practices (the researchers do not specify how the studies measured such practices). As the researchers point out, both studies extended over a long period of time, increasing the odds that other factors influenced behaviour changes. The results of the other two studies, which reported cross-sectional data and compared those who had and had not received HIV testing, pointed in another direction. Roffman et al. (1995) found that HIV-tested MSM had more frequent intercourse using condoms, as well as engaging in more non-penetrative sex acts, than untested men. However, tested men had more partners (which is regarded by Wolitski et al. as a risk factor) and engaged in UAI to the same extent as untested men. Dawson et al. (1991) found that HIV-tested men were more likely to engage in UAI afterwards than untested men. It should be noted that almost half of the men in Dawson's study were not given the opportunity for counselling at the time of HIV testing and that methodological limitations made it difficult to determine with certainty whether they had engaged in UAI before or afterwards.

Weinhardt et al. performed a meta-analysis of studies that measured the impact of HIV CT. The review also includes studies of heterosexual women and men, as well as IDUs. Because the researchers do not discuss MSM separately, this report considers the results generated by the overall meta-analysis. The analysis of Weinhardt et al. includes 27 studies, eight of which involved MSM. The researchers use differences in a standardised mean difference index before and after HIV CT to measure effect size. The mean was calculated for three different parameters: frequency of UAI, condom use and number of sexual partners. The researchers also coded the studies based on the presence of various characteristics, such as a description of the participants and the content of counselling (how to use condoms, etc.). Although the studies were coded for the content of counselling, the meta-analysis offers no results in that respect. The results of the meta-analysis show that HIV-positive women and men, as well couples of differing HIV status (serodiscordant couples), were most likely to change their sexual behaviour after HIV CT. Thus, the researchers conclude that HIV CT is an effective secondary prevention strategy, i.e., an attempt to change behaviour in people who have tested HIV-positive. But the researchers find that HIV CT is not an effective primary

prevention strategy. They base this conclusion on results of the meta-analysis demonstrating the lack of behavioural differences between people who underwent HIV antibody testing followed by the opportunity for counselling and those who did not undergo such testing.

The meta-analysis also showed that older people changed their sexual behaviour more than younger people (no specific age range is mentioned). The researchers explain the difference in terms of greater personal maturity and the likelihood of having a stable relationship rather than the impact of HIV CT in itself. Another significant difference that emerges from the meta-analysis is that people who sought HIV CT on their own initiative changed their behaviour more than those who were offered it as part of a research programme. Weinhardt et al. conclude that people who autonomously sought HIV CT had already decided to change their behaviour.

The concluding discussion by Weinhardt et al. identifies specific methodological problems in the evidence-based research on HIV CT as a primary prevention strategy. The researchers maintain that current research reports lack information on advisory and supportive counselling in connection with HIV antibody testing. They raise the issue from the level of research methodology to a quality issue in primary prevention. In their view, 5-10 minutes of pre-test counselling and 10-30 minutes of post-test counselling may not be long enough to motivate changes in risk behaviour. The researchers therefore call for interventions in connection with HIV antibody testing that are guided by theories of behaviour change.

HIV prevention: a review of reviews assessing the effectiveness of interventions to reduce the risk of sexual transmission (Ellis et al. 2003)

This review is longer than the first four, as well as containing a more in-depth discussion and analysis of the results. The British team examines the results of research reviews with respect to effective HIV prevention intervention for MSM, commercial sex workers (CSWs), people with HIV and Africans in the United Kingdom. As in this report, the review in other words summarises what other researchers have said about effective interventions to reduce the risk of HIV transmission. The report does not contain a meta-analysis, but uses a systematic review approach in which the proportion of studies that generated favourable and unfavourable results is presented and discussed. Ellis et al. base their analysis on two research review articles (Oakley et. al

1996 and Kegeles & Hart 1998), which include reports from a total of twelve different studies (see Appendix 1 for a list). The articles used a systematic review approach in summarising the results of the analysis.

Ellis et al. present and discuss the results of their review based on three different intervention levels: individual, group and community (a more general level in the HBT community¹⁰). At these levels, the researchers draw a series of conclusions about whether the evidence is sufficient to state whether the intervention is effective or not (a similar discussion appears in one of the articles included in Forsberg 2007). The researchers identify four types of evidence: 1) sufficient review-level evidence; 2) tentative review-level evidence; 3) insufficient review-level evidence; 4) no review-level evidence. The first two types indicate that the intervention can have a significant impact on sexual risk behaviour (UAI) when the circumstances are similar and the target group has similar unmet needs. The other two types indicate that additional research is required to assess the effectiveness of the intervention. In other words, the last two types do not wholly discount the effectiveness of the interventions. In some cases, behaviour changes following intervention may be just above the level of statistical significance.

The researchers include only one study that examined an individual-level intervention (Gold & Rosenthal 1996, which is included in Kegeles & Hart 1998). The intervention involved asking men to reflect on a recent occasion when they broke their own rules on safer sex. The men were encouraged to consider various self-justifications, which the researchers regard as commonly employed when people explain their sexual risk behaviour (such as “He was attractive” or “I was intoxicated”). Gold and Rosenthal used two comparison groups – one that received no intervention and one that was shown HIV prevention material on two occasions. Two months after the intervention, all the men filled out a questionnaire on their sexual behaviour. The results showed that the group that had received the intervention reported fewer occasions on which they had failed to practise safer sex. Because only one study in the two research reviews examined an individual-level intervention, Ellis et al. cannot draw any definite conclusions about the effectiveness of such interventions. More research is thus needed. Note that the research reviews did not contain individual-level interventions that included HIV CT.

The researchers included eight group-level studies. Among the interventions described in these studies were instruction on HIV and AIDS combined with exercises focusing on the connection between cognition and behaviour

10. HBT is the Swedish abbreviation for LGBT, also GLBT, which is an acronym referring collectively to Lesbian, Gay, Bisexual, and Transgender/Transsexual people.

(Kelly et al. 1989), as well as a one-day workshop that focused on relationships and risk-taking at their various stages (Kelly et al. 1996). Ellis et al. draw three conclusions about the effectiveness of group-level interventions. The first conclusion is that the evidence is sufficient to establish that multi-component group-level interventions effectively reduce sexual risk behaviour. In other words, the design of an intervention programme should include various components that interact to achieve the total impact. For instance, instruction can be combined with a workshop that includes discussion and exercises for negotiating safer sex.

The second conclusion that the researchers draw about group-level interventions is that the evidence is sufficient to establish that interventions focusing on cognitions and allowing participants to practise various skills effectively reduce sexual risk behaviour. For instance, interventions that focus on cognitions may involve identifying and discussing how participants think about and assess risks in different situations (see Gold & Skinner's analysis of cold and hot cognitions). Skills training might involve negotiating with partners about condom use or adopting other risk-reducing practices. The third conclusion that Ellis et al. draw about group-level interventions is that there is insufficient evidence to establish whether multi-session interventions are more effective than single-session interventions. This may appear to contradict the first conclusion about group-level interventions. Ellis et al. take up the issue, arguing that multiple components – not sessions – are what make the interventions effective.

Four studies describe community-level interventions. Among such interventions are the use of popular opinion leaders or traditional outreach that involves handing out condoms and lubricants at gay bars. Ellis et al. find that there is sufficient evidence that community-level interventions that include peer educators or popular opinion leaders effectively reduce sexual risk behaviour.

Kelly et al. (1997) describe an effective community-level intervention whereby bartenders at a heavily frequented gay bar identified people who were popular and respected in the community. These people received training on how to deliver safer sex messages to their friends and acquaintances. A 12-month follow-up found that condom use increased and the frequency of UAI decreased among men who had received the intervention.

Besides drawing conclusions about the three levels of intervention, Ellis et al. offer several general evidence-based findings. One finding is that interventions for MSM are more effective if preceded by research on, and adapted to, the specific needs and circumstances of the target group. In other words,

collaboration between researchers and actors in the field of HIV prevention contributes to a successful effort.

Ellis et al present an interesting discussion on the results of their review. They argue that HIV prevention interventions for MSM must take a broader approach and be placed in a wider context of psychosocial health promotion. Dealing with the risk of HIV transmission must be linked to issues of self-esteem, relationships and homophobia.

HIV Health Promotion and Men who have Sex with Men (MSM): A systematic review of research relevant to the development and implementation of effective and appropriate interventions (Rees et al. 2004)

The sixth research review covered by this report was published by British researchers at the EPPI Centre¹¹, University of London. In addition to systematically reviewing effective HIV prevention, the review differs from those discussed above in that it also looks at the results of a systematic review of research on the views and experiences of MSM concerning HIV-related sexual health. Rees et al. also use a more refined method of measurement for effective HIV prevention. Until 2004, meta-analyses of effective HIV prevention for MSM did not generally distinguish between UAI for men of known and unknown HIV status. The researchers explore possible reduction in the incidence of UAI with someone of opposite HIV status (serodiscordant) or with someone whose HIV status is not known when speaking about the effectiveness of various interventions. Thus, their results may be considered to be of greater validity because they identify the kinds of anal intercourse that may entail a risk of HIV transmission.

The research review contains both a meta-analysis and a systematic review (narrative synthesis). The meta-analysis is based on four studies. The remaining studies, including those that explore the views and experiences of HIV-related sexual health among MSM, are subject to narrative synthesis. Because such views and experiences are somewhat beyond the purview of this report, the narrative synthesis concerning them is presented only briefly here. These studies are not included in the attached list of publications.

The meta-analysis calculates odds ratios as a measure of effect size, i.e., the success (or otherwise) of various prevention interventions. Unlike previ-

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ous meta-analytic, empirical studies, Rees et. al refine UAI as an outcome variable, distinguishing between partners of known and unknown HIV status. Because such an analysis reflects actual risk behaviour, it may be regarded as more valid.

The meta-analysis is broken down into two parts, the first of which covers the outcome variables of UAI with someone who is serodiscordant or whose HIV status is not known. The other part covers the outcome variable of UAI with casual partners. The results of the analysis show that interventions, whether at the individual or group level, containing cognitive-behavioural counselling are more effective than traditional counselling. The analysis demonstrates that the odds of having UAI with partners of different or unknown HIV status decreased by half at 6-month follow-up after cognitive-behavioural counselling.¹²

A 12-month follow-up still found differences, but not statistically significant, between the intervention and control groups.¹³ The non-significant result was due to drop-outs, as well as the need for this type of intervention to be followed up by an effort that takes advantage of the knowledge that has been generated. The other meta-analyses performed by Rees et al. show no significant differences at follow-up with regard to reduction of sexual risk behaviour. One of these meta-analyses deals with two British interventions centred on peer education, which did not show any differences in reduced risk behaviour in a follow-up. An explanation advanced by the researchers is that the interventions could not be carried out as planned because it was difficult to recruit peer educators, and those who were recruited had difficulty initiating effective interviews and discussions with the target group. A meta-analysis of interventions (whether at the individual or group level) in which participants were offered the opportunity to place sexual risk-taking behaviours in the broad context of psychological, social and physical well-being showed no significant differences with respect to the incidence of casual UAI.

The narrative synthesis of British research concerning MSM's views and experiences of HIV-related sexual health focuses on three groups that Rees et al. regard as particularly vulnerable in terms of risk behaviour: those who sell sex, those who are 25 or younger and those who are HIV-positive. The analysis includes ten studies (see Rees et al. 2004 for the bibliography). The researchers identify 33 different needs that they consider important for appropriate and effective HIV prevention intervention among the three groups. Most of the

12. The total odds ratio is 0.49 with a 95 percent confidence interval: 0.29-0.84.

13. The total odds ratio is 0.64 with a 95 percent confidence interval: 0.31-1.33.

The result is not significant at a 5 percent level.

needs are specific to one particular group. For instance, MSM who sell sex need non-judgemental health services, while those 25 and younger need interventions that affirm self and identity. Only three needs were common to more than one group: improving communication skills about HIV status, informing MSM of the markers that they might be using to determine HIV status, and placing sexual risk-taking in the broad context of psychological, social and physical well-being. The researchers classify the 33 needs according to the primary level to which they apply: group, community, service or overall planning. The researchers then perform an analysis of how the interventions described in the previous evaluations meet the various needs.

The comparative analysis reveals that the interventions described in the studies fully matched only two of the 33 needs: informing MSM of the markers that they might be using to determine HIV status and placing sexual risk-taking in the broad context of psychological, social and physical well-being. The researchers find that the interventions described in the evaluations partially met five additional needs. Three of the five needs are derived from HIV-positive MSM: taking into consideration the conflicts inherent to balancing sexual intimacy and pleasure with condom use and communication about HIV (1), helping them deal with the psychological impact of HIV diagnosis and subsequent life as a sexual being (2), and addressing the communication and strategic skills needed to deal with situations (such as disclosure and condom use) that they find difficult (3).

The various interventions partially matched two needs of young MSM: taking into consideration the complicating factors surrounding condom use and the impact of condoms on sexual pleasure (1), and supporting inclusive conceptualisations of MSM identity (2). It is worth noting that none of the interventions included in the evaluations called attention to any of the remaining needs. Rees et al. point this out, remarking that the HIV prevention interventions covered by the review did not match or call attention to any of the needs derived from the community or overall planning level or within the services offered to MSM. A conclusion that the researchers draw from that observation is that research on the HIV prevention needs of MSM is important because it gives a pointer to the types of interventions that should be offered to them.

Summary and reflections on the six international research reviews

The combined results of the six international research reviews clearly demonstrate that HIV prevention interventions can lead to behaviour change. The meta-analyses show an average 23–26% reduction in sexual risk-taking (UAI).

Stratified analyses reveal that group-level interventions are particularly effective, probably because much of sexuality is a social construct that emerges from agreements that people make about the valuation and interpretation of sexual behaviour. Furthermore, sexuality is heavily influenced by norms that are forged and maintained by social interaction. Group-level intervention is thus an excellent way for people to learn about their own sexuality. It also provides individual participants with the opportunity to see their own experiences, views and ideas through the eyes of others.

Ellis et al. find that there is insufficient evidence to conclude that individual-level interventions are effective. It should be borne in mind that this result is based on only one study that used such interventions. Consideration should instead be given to another evidence-based observation made by both Ellis et al. and Herbst et al., i.e., that multi-component interventions are more effective than single-component interventions. Because such interventions meet various types of needs, they are more likely to produce favourable behaviour changes. Individual-level interventions have a natural place as part of comprehensive programmes. MSM all have different needs. Group sessions may suffice for some of them, while others require individual counselling with a social worker or other health professional. The finding of Johnson et al. that community-level interventions are as effective as small-group interventions is relevant in this regard. Though a pleasant surprise, the finding should not lead to hasty conclusions. Community-level HIV prevention cannot take the place of group-level (or individual-level) approaches because each type of intervention meets different needs.

The research reviews disagree about what time frame is most effective. Herbst et al. argue that multi-session interventions, or single-session interventions that last for at least four hours (such as a half-day workshop), are most effective. Furthermore, extending the time between interventions (for example group sessions) leads to more successful interventions. Ellis et al. find insufficient evidence to conclude that multi-session interventions are more effective. An educated guess based on these conflicting findings is that the types of components in the intervention as a whole, rather than the number of sessions, are the decisive factor.

The various research reviews provide some guidance with regard to specific methods. Ellis et al. conclude that peer educators and popular opinion leaders are successful components of HIV prevention intervention. Johnson et al. also identify peer education as an effective approach.¹⁴ Several of the reviews suggest that interventions containing a cognitive element are effective. Particularly appealing to participants in the various studies was the opportunity to become more familiar with the way in which they viewed risk-taking and sexuality in different situations, as well as thinking and behaving in a manner that reduces risk. Incorporating some type of skills training, such as role play, into such interventions appears to further increase their effectiveness.

Several of the reviews also reveal the importance of theoretically grounded prevention methods. Herbst et al. find that diffusion theory and the model of relapse prevention are particularly successful as theoretical frameworks of intervention. The model of relapse prevention is based largely on cognitive theory (for a description of how it is used in treating substance abusers, see Saxon & Wirbing 2004). The findings of the various research reviews about cognitive methods also favour using relapse prevention as a model. However, generally regarding UAI as a kind of relapse from safer sex presents certain difficulties. Research on the sexual behaviour of MSM shows that UAI is generally not to be viewed as a departure from safer sex but rather as a symbol of intimacy and love (Henriksson 1995, Tikkanen 2003). Practitioners who use relapse prevention as a method thus need to identify situations in which men unintentionally depart from their individual approach to sexual risk behaviour. Diffusion theory differs from cognitive theory in that it examines the ways in which innovations spread among groups of people. In other words, diffusion theory operates at more of a social level, whereas cognitive theory focuses on the thinking and behaviour of individuals. Diffusion theory is thus an appropriate framework when planning interventions aimed at hard-to-reach groups. For instance, the theory advanced by Rogers (1995) stresses the importance of early innovators, who may be people with status in a community. This suggests a link between diffusion theory and the use of peer educators and popular opinion leaders. These two specific methods largely rely on high-status individuals to spread knowledge within a target group.

The most startling results appear in the two research reviews concerning HIV counselling and testing. The findings of the two reviews diverge with respect to effectiveness. Both an increase and decrease in the frequency of sexual risk behaviour was found following HIV counselling and testing. The

14. Rees et al. do not find evidence that peer education is more successful but say that the results are probably due to difficulties in carrying out the particular studies.

most surprising aspects of the studies are their methodological problems and the lack of additional evidence-based research concerning this highly important type of intervention. Counselling in connection with HIV antibody testing varies in terms of both form and content, neither of which is the subject of a stratified analysis by either Weinhardt et al. or Wolitski et al. As with other HIV prevention interventions, HIV counselling and testing should presumably be theoretically grounded in order to be effective. A reasonable conclusion would thus be that research is needed with regard to development and assessment of HIV prevention intervention in connection with antibody testing.

The meta-analysis performed by Herbst et al. finds no difference in intervention effectiveness with respect to age or educational level. This certainly does not suggest that all interventions work for every subgroup of MSM. The six international research reviews all stress the importance of adapting HIV prevention interventions to the particular needs of various MSM subgroups. Rees et al. go furthest in this discussion. They compare the needs of three selected subgroups with actual interventions and find that most of the needs are not being satisfied. It is particularly noteworthy that no needs related to the supply of health services are being met. A logical conclusion is that research on the needs of MSM is very important and can form the basis of effective HIV prevention interventions adapted to specific subgroups of MSM.

KNOWLEDGE-BASED HIV PREVENTION INTERVENTION FOR MEN WHO HAVE SEX WITH MEN IN SWEDEN

THIS SECTION OF THE REPORT presents various types of publications about Swedish HIV prevention intervention for MSM. No regular meta-analyses or individual evidence-based research have been performed in this area. As a result, a relatively broad search of the available literature was conducted. This report includes articles that either document or assess HIV prevention intervention for Swedish MSM. Choosing articles was sometimes a delicate issue. Because articles that describe the life circumstances or sexual behaviour of MSM provide vital information for HIV prevention efforts, they are crucially important in knowledge-based HIV prevention work. Given that the purpose of this report is to present and discuss evidence-based HIV prevention for MSM, the Swedish research review excludes research that does not clearly focus on HIV prevention efforts. However, some of the articles by actors in the field of HIV prevention for MSM contain a more general discussion and analysis, which is important by virtue of being grounded in experience. To make sure that no important articles were omitted, key actors in the field of Swedish HIV prevention were contacted and asked to comment on the selection.

Articles published in scientific journals

To gain an overview of articles published in scientific journals, the PubMed/Medline and Sociological Abstracts databases were searched. PubMed/Medline covers medicine, as well physical and care sciences. The database contains articles from more than 5 000 scientific journals and publication series. Sociological Abstracts covers sociology and related behavioural-science disciplines. The database contains articles from more than 1 800 scientific journals and publication series.

These two databases provide excellent coverage of the publications in which research on HIV prevention is presented. The databases were systematically searched using “Sweden” plus the following terms: “prevention” (truncated to include all of its inflections), “HIV”, “AIDS”, “Acquired Immune Deficiency Syndrome”, “homosex” (truncated to include all of its inflections) and “gay”. The search was broad in that it included titles, summaries and indexed search terms. The articles that concerned HIV prevention interventions for MSM were subsequently selected. A discussion of these articles follows.

Månsson (1990) Psychosocial aspects of HIV testing – the Swedish case. AIDS Care. Vol.2 Issue 1:5-27.

This article contains a critical discussion based on an analysis of Swedish HIV testing policy. The empirical material consists of qualitative interviews with 16 HIV-positive men in southern Sweden. The study focuses on psychosocial aspects of HIV testing: pre-test counselling, the question of anonymity after testing, waiting for and receiving the test result, and “breaking bad news”. Månsson finds a lack of psychosocial support at each step of the testing process. He argues that the Swedish approach has involved a control strategy in the sense that the goal has been for as many members of the general population as possible to undergo an HIV antibody test. Government-backed information campaigns have emphasised the duty of individual citizens to do so. People may experience notification that they are HIV-positive as betrayal because they feel that they are neglected and subjected to a series of restrictions. Månsson stresses the importance of incorporating a psychosocial perspective into Swedish HIV testing policy. One way of doing so is to actively involve social workers, counsellors, psychologists and related healthcare professionals in the political process of shaping AIDS policy and HIV prevention efforts.

Giesecke, Granath, Ramstedt Ripa, Rådö & Westrell (1991) Effectiveness of partner notification for HIV infection. The Lancet. Vol 338. issue 8775: 1096-1100; Giesecke, Ramstedt, Granath, Ripa, Rådö & Westrell (1992) Partner notification as a tool for research in HIV epidemiology: behavior change, transmission risk and incidence trends. AIDS 6(1):101-108.

These two articles describe and discuss the efficacy of partner notification (contact tracing) with regard to identifying previously undiagnosed HIV-positive people, as well as monitoring the epidemiology of HIV infection. The empirical evidence was based on 365 (91 percent) of all Swedes who

were diagnosed with HIV from 1 January 1989 to 30 June 1990. By means of partner notification, conclusions were drawn about the HIV status of their partners and information was obtained about their sexual practices (such as the frequency of penetrative anal or vaginal intercourse). The analysis in the first article shows that partner notification is effective in detecting undiagnosed HIV infection. The approach identified 53 new cases during the period of the study.

The researchers argue that partner notification is most effective when performed by specially trained counsellors, who have more psychosocial skills and time at their disposal than doctors. The end of the first article maintains that partner notification can also promote prevention among partners found to be HIV-negative by making them aware that they were at risk of infection. Based on the same empirical evidence, the second article examines whether three epidemiological issues associated with HIV can be analysed from data generated by partner notification. The issues are sexual behaviour (such as the number of partners), the risk of HIV transmission due to various sexual practices (such as receptive anal or vaginal intercourse with an HIV-positive partner) and the incidence of HIV.

The researchers find evidence that information generated by partner notification can be used to draw conclusions about the three epidemiological aspects of the HIV epidemic. However, they maintain that the method entails a bias because, like nearly all research concerning sexual behaviour, it is based on data obtained from retrospective interviews about sexual practices. To increase the reliability of the results, standardised forms were employed at the interviews conducted during the period of the study. Using a logistic regression analysis, the researchers compared the risk of HIV transmission posed by various types of sexual practices and concluded that the risk is twice as great for anal intercourse as for vaginal intercourse.

Åsander, Berglund, Persson, Ramstedt (1996) Prevention mot hiv med kontaktspårning. Uppföljning av personer med nydiagnostiserad infektion (HIV prevention with contact tracing. Monitoring people with newly diagnosed infection). Läkartidningen 93: 3907-3910.

This article presents the results of a study that included 109 patients in Stockholm who were diagnosed with HIV in 1994. The counsellors who were in contact with the patients collected information about them and their sexual behaviour. Eighty-nine of the patients were men, more than half of whom had been infected during sex with another man. The authors present background data for the patients participating in the study. The fact that 37 percent of

them had previously tested negative demonstrates the importance of early identification of people who engage in sexual risk behaviour. The article also contains an overall analysis of the contact tracing investigations conducted by the participating counsellors regarding the 109 patients. A comparison showed that the statistics generated by the investigations were more differentiated than those generated by the Swedish Institute for Infectious Disease Control (SMI). The authors conclude that a clearer picture of epidemiological development in Sweden would emerge if data were gathered from a contact tracing programme delegated to specially trained counsellors.

Danziger (1998a) HIV testing for HIV prevention: a comparative analysis of policies in Britain, Hungary and Sweden AIDS Care 10: 563-570; Danziger (1998b) HIV testing and HIV Prevention in Sweden. BMJ: 316: 293-295; Danziger (1999) The social impact of HIV testing: a comparative analysis of Britain and Sweden. Social Science & Medicine 48: 293-300.

These three articles by British researcher Renée Danziger analyse issues relating to Swedish HIV testing policy. One article compares Britain, Hungary and Sweden, while one compares Britain and Sweden. The articles provide no new information for readers who are familiar with Sweden's HIV testing and the Communicable Diseases Act. Their objective is to illuminate, primarily for people outside Sweden, the policy issues raised by HIV testing by comparing the approaches of the different countries. While Swedish and Hungarian policy stress testing as integral to the HIV prevention effort, British policy focuses chiefly on diagnosis as a voluntary measure for the sake of the individual. According to Danziger, the Swedish emphasis on testing for prevention purposes is due to a culture that values the protection of society more than individual rights and freedoms. Danziger maintains that the Communicable Diseases Act places the primary responsibility on HIV-positive people, while the British approach places an equal responsibility on those who do not test positive. She draws no conclusions about whether the Swedish attitude is more successful than others. However, she calls attention to the fact that policy issues have a social dimension, thereby having an impact on the stigma surrounding HIV testing in general and HIV-positive people in particular. The social dimension is key to effective HIV prevention. Danziger thus argues that the effectiveness of HIV counselling and testing and the implications of different approaches must also be analysed at a social level. According to her, that level may end up being neglected when effectiveness evaluations focus exclusively on changes in the risk behaviours of individuals.

Publications by the Swedish National Institute of Public Health

Swedish National Institute of Public Health lists were searched to identify publications describing or assessing HIV prevention intervention for MSM. No publications were found that measure up to the international research reviews presented above with regard to an evidence-based approach. However, a number of the publications are worth mentioning, due either to the assessments they offer or to the vital information they provide on HIV prevention intervention for Swedish MSM.

Var det värt alla pengarna? Utvärdering av hur det särskilda bidraget för HIV-förebyggande insatser använts. Folkhälsoinstitutet utvärderar (Was it worth all the money? Assessment of how the special subsidy for HIV prevention intervention was used. Swedish National Institute of Public Health assesses). 4/1995. Jarlbro.

This report presents an assessment of how the special funding for HIV prevention in 1992-1995 was used. The assessment is based on a review of approved applications, as well as the final reports submitted after the projects were over. To supplement these documents, questionnaires were collected from all HIV coordinators in the metropolitan regions. The investigator establishes that a significant percentage of the grants were used for interventions aimed at young people. These funds largely financed the activities of youth clinics or education on sex and relationships at compulsory or upper secondary level. The investigator finds that the impact of the interventions is difficult to judge due to shortcomings in both documentation and assessment (which is also true of interventions for other target groups). The investigator also points to other flaws that were common to most interventions. For instance, the various projects did not include a situation and target group analysis. The HIV prevention initiatives were thus not adapted to specific needs and sometimes focused on people with whom it was easiest to make contact, possibly excluding groups that were more difficult to reach. Jarlbro does not offer an in-depth discussion of HIV prevention initiatives targeted at MSM.

Säkrare sex. Hur budskapet formuleras. Hur det tolkas. Hur det fungerar
(Safer sex. How the message is formulated. How it is interpreted. How it works).
Folkhälsoinstitutet Rapport (Swedish National Institute of Public Health Report)
1997:41. Jarlbro & Palm.

This report contains a qualitative analysis of the safer sex messages communicated by HIV prevention efforts. The purpose of the report is to survey and describe the safer sex messages used by various actors in the field of HIV prevention, as well as how the messages are perceived by different target groups and influence their attitudes and behaviour. This discussion focuses on what the report says about the MSM target group. The authors interviewed 60 MSM of various ages. They also examined HIV prevention material compiled from the website of the Swedish Federation for Lesbian, Gay, Bisexual and Transgender Rights (RFSL). The authors conclude that the various actors in the field of HIV prevention are in basic agreement on the messages they communicate about safer sex. However, the authors point out one issue on which views clearly diverge, i.e., the message that should be communicated in terms of the risks associated with unprotected oral sex.

This difference of opinion became evident in the mid-1990s, when several of the actors (including the Noah's Ark – Red Cross Foundation, Swedish National Institute of Public Health and the Swedish National Board of Health and Welfare) published a joint ad urging condom use during oral sex. The mixed message created anxiety and suspicion among MSM. A number of the men interviewed for the report expressed such feelings. The report contains a final chapter on proposed action, which is of interest when effective HIV prevention is being discussed. The authors maintain that safer sex is a norm among MSM and that the messages of actors in the field of HIV prevention should thereby focus on situations in which the norm is disregarded. Furthermore, the messages should be communicated to the target group as close to those situations as possible. In conclusion, the authors argue that messages conveyed by Swedish National Institute of Public Health may be perceived as moralising. This makes it very important for the right person to communicate a message that recipients find credible. The authors call for a joint publication that objectively presents what is known about the risks of HIV transmission during oral sex.

Liv med HIV. Tre studier om hivsmittade och hivnegativa män (Living with HIV. Three studies of HIV-positive and HIV-negative men). Rapport Folkhälsoinstitutet (Swedish National Institute of Public Health Report) 1998:39. Wikström.

The report, a summary by the journalist Tobias Wikström, presents the results of three studies conducted by Mikael Westrell, a counsellor at PH-Center (later Psykhälsan, a psychosocial centre for MSM) in Stockholm. All of the studies based their empirical evidence on visitors to Venhälsan (Venereal Clinic for Homosexual and Bisexual Men). Referred to as Venhälsan Cohort, the first study included 166 patients who were monitored from 1983 to 1993. The purpose of the study was to identify risk factors for developing AIDS. The second study involved a questionnaire survey of more than 200 HIV-positive men at Venhälsan. The purpose of the survey, which was conducted in 1997, was to generate information to be used in improving psychosocial support services aimed at HIV-positive MSM. The third study, a retrospective case note study, examined the case notes of more than 1 000 patients at PH-Center.¹⁵ The purpose of the study was to identify and describe factors relevant to transmission of HIV.

Taken together, the three studies provide key information about MSM and HIV in general, as well as HIV-positive MSM in particular. The report is not equally specific with regard to HIV-prevention intervention. However, the part that discusses psychosocial support for people living with HIV is relevant to prevention issues. The results of the questionnaire survey show that most respondents felt that it is important for health professionals to notify people of their HIV-positive status face to face. The case note study reveals that PH-Center sometimes helped MSM with issues surrounding coming out. According to the case notes, a very large percentage of the patients (regardless of HIV status) said that they had come to PH-Center as the result of relationship problems, the most common being a sense of loneliness. The responses to the questionnaire show that the patients had great confidence in the clinic staff and that its HBT (LGBT) expertise made a positive contribution.

15. Mikael Westrell carried out the study together with Agneta Hansson.

Hivförebyggande arbete i storstadsregionerna (HIV prevention efforts in the metropolitan regions) 1998–1999. Rapport Folkhälsoinstitutet (Swedish National Institute of Public Health Report) 1999:20.

This report results from the remit the Swedish National Institute of Public Health received from the Swedish government in 1998 to survey and analyse HIV prevention efforts in the metropolitan regions. The reason for the specific interest in these regions was the desire to find out what would happen when the special support earmarked for them expired. The analysis was based on outcome data collected by the Swedish National Audit Office/Swedish National Financial Management Authority. Interviews were also conducted with local government and regional representatives, infectious disease specialists and the Director-General of SMI. The report focuses primarily on the structural level, particularly the financial aspects of HIV prevention. It reviews the HIV prevention efforts of the metropolitan regions from different points of view, one of which is MSM. The review is concise and provides no in-depth analyses with respect to effective methods of HIV prevention intervention for MSM.

Utvärdering av sentry.nu – en webbaserad informationskampanj riktad till män som har sex med män (Assessment of sentry.nu – an online information campaign for men who have sex with men). Falkheimer and Palm. FHI 2003:29.

This report contains an assessment of sentry.nu, an online information campaign for MSM. In addition to articles about HIV and other STIs, the website has informational ads in which well-known people talk about safer sex and related issues. The authors of the report assessed the website by means of a questionnaire to which almost 500 people responded. The results of the questionnaire show that visitors to the website felt that they picked up valuable facts. Generally speaking, they thought that the website was user-friendly and that the information about HIV and other STIs was useful. However, the respondents were critical of its design – primarily the popups, which they thought were aggressive and obtrusive. Falkheimer and Palm's concluding discussion suggests more clearly defined objectives for online prevention campaigns. In particular, they propose a greater emphasis on conveying knowledge, i.e., that websites contain factual information and interviews with experts, as well as edutainment. The authors also propose that the target group be more actively involved in designing the websites. Focus groups are an excellent tool in this regard.

Det händer inte mig. En utvärdering av kondomkampanjen sommaren 2003 (It can't happen to me. An assessment of the condom campaign in summer 2003). Falkheimer and Palm. FHI 2004:13; Ticket to ride – vilka följde med på färden? En utvärdering av 2004 års säkrare sex-kampanj (Ticket to ride – who came along? An assessment of the 2004 safer sex campaign). Falkheimer and Wallgren. FHI 2005:2.

These two reports by the Swedish National Institute of Public Health assess the 2003–2004 summer campaigns conducted in collaboration with the Swedish Association of Lesbian, Gay, Bisexual and Transgender Rights (RFSL) and the Swedish Association for Sexuality Education (RFSU). The campaigns had three objectives: to remind young adults to use condoms in order to prevent the transmission of HIV and other STIs, to provide information about HIV and other STIs, and to facilitate discussion of sex and relationships. The assessments were based on an online questionnaire among visitors to the websites associated with the campaigns, interviews with informants, and field studies during which the authors observed and interviewed members of the target groups. The field studies also included interviews with the campaign directors.

Because the reports do not aim to measure the impact of prevention campaigns on the behaviour of individual members of the target groups, they fall somewhat outside the purview of the current discussion. Both reports show favourable results with regard to the objective of reminding young adults to use condoms for the prevention of HIV and other STI transmission. The authors conclude that the campaigns suffered from certain problems in terms of the second objective, providing information about HIV and other STIs. Given that the campaigns did not clearly focus on MSM, the needs and demands (somewhat different from those of young heterosexuals) for information among young members of that group were not sufficiently addressed. Moreover, the websites were not interactive, so that visitors could not ask questions. The authors conclude that the third objective, facilitating discussion of sex and relationships, was not fully met.

Publications by actors in the field of HIV prevention

RFSL is the leading actor with regard to HIV prevention for Swedish MSM. The RFSL website was therefore searched to identify publications describing or assessing HIV prevention intervention for that group. Key people in all regions and metropolitan areas also received questions concerning their assessment of interventions that had been carried out. However, the inquiry

did not identify any additional publications. As in the case of other searches, no strictly empirical publications were found. However, a number of the publications are worth describing, due either to the assessments that they offer or the vital information that they provide about HIV prevention intervention for Swedish MSM. A brief overview of the publications that the search identified is presented below

Säkrare sex. En sammanställning av teorier och studier av sexuella beteenden bland män som har sex med andra män (Safer sex. A summary of theories and studies concerning sexual behaviour among men who have sex with other men). RFSL 1988.

As far back as 1988, RFSL published a summary of theories and studies concerning sexual behaviour among MSM. This report is the result of a grant provided by the Swedish National Board of Health and Welfare to “analyse and submit proposals for changing certain sexual behaviour among homosexual and bisexual men” (RFSL 1988 p. 1). Intended as a source of information to be used by HIV prevention intervention programmes for MSM during the 1990s, the report contains a thoroughgoing sociological discussion of the social constructs associated with sexuality, as well as the way in which the dichotomy of cleanliness vs. filth affects attitudes toward STIs. It also presents international research on changes in sexual behaviour in the wake of the HIV/AIDS epidemic. However, the research review lacks Swedish references. The report concludes with 28 key fundamentals for information about safer sex. Most of the fundamentals (including sexuality as a social and cultural construct and thereby amenable to being affected, sexually affirmative messages, eroticising safer sex, and openness to new methods for communicating with difficult to reach subgroups of MSM) have now been clearly incorporated into the discourse about HIV prevention. Nevertheless, the report contains some conclusions to the effect that Swedish HIV prevention efforts have still not fully implemented. The discussion about social class and HIV prevention is a case in point. According to the report, U.S. studies have shown that people from upper social groups are more likely to alter their sexual behaviour than those from lower social groups. The presumed reason is that HIV prevention interventions for MSM have been designed in a way that appeals to and reaches educated middle-class men. The report concludes that efforts to design information for MSM face a serious challenge.

Från 0 till 91 %. En studie bland homo-och bisexuella kvinnor och män i Malmö (From 0 to 91%. A study among homosexual and bisexual women and men in Malmö). Andersson. RFSL-rådgivningen Skåne 1998.

Published by RFSL-rådgivningen Skåne (RFSL counselling in southern Sweden) in 1999, this report concentrates on the results of a survey concerning the risk behaviours and safer sex strategies of homosexual and bisexual women and men. It does not focus on assessing HIV prevention interventions. However, the author discusses the relevance of the information obtained from the survey to future HIV prevention efforts. Some of the conclusions that appear in the final discussion are discussed below. The results of the survey show that safer sex is a common strategy for preventing HIV transmission. On the other hand, men neglect condom use in certain situations, primarily with steady partners. The results also show that men are most likely to neglect safer sex practices when they are at home, whether in stable or casual relationships.

The above conclusion serves as a reminder that men most often depart from safer sex strategies in the very place it is most difficult for prevention efforts to reach. The report also finds that men with poor self-esteem tend to use condoms less consistently. The author concludes that efforts aimed at strengthening the self-identity of homosexual and bisexual men are important. The author ends by stressing that health promotion has both personal and political aspects. The health problems experienced by homosexual and bisexual men are associated with the oppression of non-heterosexual members of society.

Rubberware – Ett förebyggande projekt i Malmö om säkrare sex bland män som har sex med män (Rubberware – A prevention project in Malmö for safer sex among men who have sex with men). Eriksson & Knutsson RFSL-rådgivningen Malmö 1990.

This report, containing both description and assessment, describes a project carried out in southern Sweden in the early 1990s. The purpose of the project was to develop a new method of safer sex education. The objective of the method was to set in motion a process within each individual that would change his sexual behaviour and make it safer with respect to HIV prevention. Another goal was to establish the concept of safer sex as a practical, appealing alternative to unsafe sex. The project used home parties (rubberware) based on the Tupperware model. A man or couple would invite their male friends to a simple dinner, which RFSL information providers also

attended. Sexually oriented videos were shown and discussed. Instruction on condom and lubricant use was also provided. The guests could try it out on a dildo. The idea of the parties was to take advantage of established social networks to communicate with men who are ordinarily difficult to reach with information about HIV prevention. Furthermore, the hope was that the discussion about sexuality in general and HIV in particular would continue after the RFSL representative had left.

The report also contains a short evaluation by the participants. Among the results of the evaluation were that a large percentage of the men had never received instruction concerning HIV/AIDS issues before. The survey also showed that the great majority of them learned something from the rubberware parties. More than a quarter of the respondents said that the party had influenced their subsequent sexual behaviour, although it is difficult to say exactly how. A number of the men reported having a more relaxed view of sexuality after the intervention.

Säkrare sex RFSL. 15 års sexualpolitik för maximal hivprevention bland män som har sex med män (Safer sex RFSL. 15 years of sexual policy for maximum HIV prevention among men who have sex with men). RFSL 1999.

This report, produced by RFSL, describes the evolution of its HIV prevention effort. The report provides an historical perspective concerning the reliance of effective HIV prevention on assertive sexual policy, as well as the way that an affirmative and non-judgemental message is grounded in an overall approach to sexuality and prevention. The publication presents the five principles on which RFSL's HIV prevention effort is based: supporting a secure sexual identity, affirming sexuality and desire, providing non-judgemental prevention, offering realistic messages, and sharing responsibility between HIV-positive and HIV-negative people. The final chapter of the report summarises the lessons learned in the 15 years that RFSL had been involved in HIV prevention intervention for MSM. The discussion stresses the importance of expertise about, along with knowledge concerning the role of sexuality in, male homosexual culture. According to the report, the fact that the prevention effort had historically been rooted in RFSL as a popular movement could prove instructive for other groups as well. Being a popular movement, RFSL commanded greater respect throughout society and was consequently freer to shape and influence HIV prevention initiatives for MSM – not to mention the legitimacy that it achieved among members of the target group.

Sexualiteten som metod. RFSL-rådgivningen Skåne ur ett verksamhetsteoretiskt perspektiv (Sexuality as a method. RFSL counselling in southern Sweden from a theoretical perspective). Knutagård. RFSL-rådgivningen Skåne Rapportserie 2000:1.

This report describes the HIV prevention effort of RFSL counselling in southern Sweden in general and its Komikondom campaign in particular. The author discusses the philosophical foundation of both the counselling provided by and the practical approach of the organisation. This is done through the use of specific theoretical concepts, such as imagination, creativity and zone of proximal development. The report shows how successful HIV prevention counselling uses sexuality as a method. More specifically, this involves looking at things through the eyes of the target group and including it in each phase of the effort. It also means viewing sexuality as a constructive force that can improve and strengthen the effectiveness of HIV prevention intervention when based on creative imagination.

There are several reasons why the report is relevant to a discussion about effective HIV prevention. It shows how a campaign can be made up of various components, each of which has a well-considered relationship to the whole. As reflected by the coherence of different parts of the Komikondom campaign, the report also demonstrates the importance of a scrupulously constructed theoretical and philosophical framework for HIV prevention efforts. The final discussion stresses the necessity of an appropriate theory: "Finding a theory that generates a productive framework for the intuitive effort proves very useful. The theory can structure intuition in a way that makes it manageable and amenable to improvement. Such a frame of reference is therefore vital to the design and development of HIV prevention intervention" (p. 56).

iKurator – RFSL:s kuratorer på nätet. Ett pilotprojekt från RFSL (iKurator – RFSL's online counsellors. A pilot project). Eriksson RFSL-rådgivningen Skåne 2003.

This publication is the final report of a pilot project financed by the Swedish National Institute of Public Health. The purpose of the project was to address geographic inequalities in access to RFSL's counselling services. An online counsellor service (iKurator) that allowed questioners to remain anonymous was launched in late 2002. After consent was obtained from each anonymised questioner, the questions and answers were published on the website. The questions were generally answered within 48 hours by counsellors at one of

RFSL's centres in Sweden. Most of the questions concerned relationships, homosexuality, bisexuality, sexuality in general and STIs.

The contacts established through iKurator demonstrate a major need for RFSL's counselling expertise outside the metropolitan regions on which it normally focuses. The fact that the questioners tended to distrust other support initiatives in their local communities makes a service like iKurator all the more important. The report finds that questions from people outside the metropolitan regions were more likely to reveal a sense of hopelessness and reflect an inadequate social network among homosexuals. The conclusion drawn in the report is that iKurator has major development potential by virtue of the ease with which technical innovations can be employed to improve the service. Furthermore, iKurator can be used to conduct quick surveys concerning the needs of the target group.

Hiv/STI, förebyggande arbete tillsammans med video- och bastuklubbar, samlade erfarenheter (HIV/STIs, prevention intervention in collaboration with video clubs and gay saunas, cumulative experience). RFSL 2006.

The purpose of this publication is to present the cumulative experience of HIV prevention interventions in Scandinavia during the 1990s and early 2000s. The publication is aimed particularly at local actors in the field of HIV prevention who want to establish collaboration with owners of video clubs and public sex venues (PSVs such as video clubs and gay saunas/health clubs). An historical retrospective is combined with practical advice on establishing collaboration that promotes HIV prevention. The report presents the fundamentals of RFSL's HIV prevention efforts, as well as the specific tools that may be used to provide video clubs and sauna clubs with information, condoms and lubricants. An attachment contains the draft of a collaborative agreement between parlour/club owners and actors in the field of HIV prevention.

Säkrare sex i sexfrekventa kommersiella lokaler – för män som har sex med män (Safer sex in public sex venues – for men who have sex with men). Knutagård and Eriksson. RFSL-rådgivningen Skåne Rapportserie 2006:1.

This report, which results from cooperation between the RFSL advisory service in southern Sweden and Region Skåne, presents the results of an ethnographic study of public sex venues (PSV) in southern Sweden, Copenhagen and Stockholm. The purpose of the study is to identify the opportunities that such premises offer for safer sex in the form of condoms, lubricants and

information. The report also discusses the prospects for improving prevention efforts at such venues. The systematic ethnographic analysis reveals differences between Denmark and Sweden, the most significant of which is that condoms and lubricants are readily available in Denmark. Danish venues are also more suited for sexual interaction (availability of bunks, etc.).

The authors conclude that the Swedish law prohibiting gay saunas proved counterproductive in terms of the prospects for promoting prevention at PSVs. Although the law was repealed in July 2004, its impact is still reverberating. According to the report, “The law interrupted the development of methods and collaboration for 17 years. We cannot immediately resume the interventions and proceed from the level where Sweden was before 1997, or adopt strategies designed by neighbouring countries over a long period of time. Collaboration and development of intervention methods need to start from square one” (p. 25). The authors also argue that such collaboration must involve everyone, including visitors, owners and staff. They maintain that the development of effective prevention efforts at such premises must be broken down into various interim objectives, the first of which is to ensure that condoms, lubricants and information are available. The next step is to promote dialogue and the dissemination of information by taking advantage of the potential for creative innovation offered by both sexuality and such venues.

Summary and reflections on the Swedish research review

Identifying and reading publications about Swedish HIV prevention intervention for MSM was an enlightening process. The publications reveal the evolution of such efforts over a period of more than two decades. It should be added that there have been many more innovative projects for MSM than are described in this report. The problem is that those projects have not been documented and assessed, a shortcoming which will be dealt with in the concluding discussion that looks ahead and proposes new initiatives.

A review of what scientific journals have published about Swedish HIV prevention intervention for MSM yields relatively little. The publications that are available focus on either HIV antibody testing or contact tracing. Such publications stress the psychosocial aspects of prevention intervention. Researchers emphasise the importance of using the expertise of social workers in the healthcare system for prevention efforts in connection with HIV testing (or contact tracing that includes such testing). This observation can be related to the previous discussion about the role of counselling. Social wor-

kers have the skills to enable them to work at the individual, group and structural level alike. As a result, they are integral to the development and implementation of innovative prevention methods linked to HIV testing.

The scientific publications about Swedish HIV prevention efforts are striking for their lack of any description of the collaboration between research and prevention in practice. No articles in scientific journals monitor or measure the impact of HIV prevention interventions in Sweden.

Nevertheless, both the Swedish National Institute of Public Health and RFSL offer documentation and some assessment of HIV prevention interventions. Such documentation, which is very important, should be expanded to include collaboration between researchers and actors in the field of HIV prevention. The impact of initiatives that have already been carried out should be measured. This would allow the presentation of the results of Swedish HIV prevention in an international scientific context.

Swedish HIV prevention efforts are creative and capture the currents of the time. RFSL serves as an excellent illustration in this respect. A perusal of the interventions described in international research reviews reveals that RFSL's initiatives have maintained the same high level of quality and should consequently appear in international scientific studies concerning impact on sexual risk behaviour. Publications by RFSL counselling in southern Sweden also show that a theoretical perspective benefits prevention interventions by forging an overall context within which the relationship and interaction of their various components may be explained. This is fully consistent with what the international research reviews say about the importance of constructing a theoretical framework and designing multi-component interventions.

CONCLUDING SUMMARY

THIS SECTION SUMS UP THE FINDINGS of this report and relates the results of the six international research reviews to Swedish circumstances.

The results of the international research reviews may be summarised as follows:

- Group-level interventions are particularly effective.
- Multi-component interventions are more effective than single-component interventions.
- Multi-session interventions, or single-session interventions that last for at least four hours (such as a half-day workshop), are most effective. Furthermore, extending the time between group sessions and the like leads to more successful interventions.
- The inclusion of peer educators and popular opinion leaders is a successful component of HIV prevention intervention.
- Interventions containing a cognitive element generate favourable results.
- Skills training, such as role play, lead to more effective interventions.
- A theoretical framework, especially diffusion of innovation and model of relapse prevention, contributes to more effective interventions.
- The effectiveness of HIV counselling and testing is unclear. The results are contradictory. Additional research and methodological development are needed.
- Research on the needs of men who have sex with men (MSM) is very important and can form the basis of effective HIV prevention interventions adapted to specific subgroups of MSM.

The above conclusions are drawn from international research concerning effective HIV prevention. Whether they are applicable to Swedish circumstances should be explored and discussed. The value of ongoing research cannot be overemphasised. Research is needed on the needs and behaviour patterns of MSM, as well as the impact of specific interventions on sexual risk-taking.

The results of the latest survey of sexual behaviour and needs among Swedish MSM reveal an extensive need for HIV prevention interventions, particularly among those who are young (Tikkanen et al. 2006). In terms of

the need for knowledge about HIV, other STIs and safer sex, the differences are greatest between the youngest men and others. Fifty percent of the youngest respondents say that they have insufficient information about HIV and other STIs. HIV prevention interventions consequently have a large knowledge gap to fill. The responses to the questionnaire also reveal the necessity for MSM to learn more about communicating with their sexual partners concerning their HIV status. Men younger than 26 have the greatest need. Forty percent of them say that they know too little about how to ask their partner about his HIV status. Such communication needs may be linked to the results of the international research reviews in terms of skills training and group-level interventions. A group-level intervention is an effective means of teaching people how to communicate about their HIV status. Along with skills training, such interventions can also supply some of the information about relationships, heteronormativity and coming out issues that the respondents to the questionnaire say they lack (see Tikkanen et al. 2006 for the exact statistics on these needs).

The 2006 questionnaire for MSM also asks the respondents what kinds of interventions they would like to have or they want to remain available. An analysis revealed four underlying, interrelated factors: access to information about health services specifically designed for MSM, access to counselling and psychosocial services, access to condoms and lubricants at places where MSM meet, and home delivery of condoms and lubricants. The first two factors are relevant to a discussion of the results of the six international research reviews. With regard to the first factor, the analysis found that there is a greater demand for online than traditional hardcopy information. Moreover, some of the men who prefer online information would rather communicate with an expert on the Internet as well. This is an indication that a group of MSM needs online information and counselling. In other words, the Internet would appear to be a key channel for the development of successful prevention methods. It is noteworthy that the six international research reviews include no specific discussion about effective online interventions considering the popularity of the Internet among MSM. However, the Swedish research review identified one online intervention (iKurator). Similar interventions should be designed and assessed.

The 2006 questionnaire for MSM also revealed a widespread need for a health clinic addressing the needs of homosexual and bisexual men. More than half of the respondents said that they would like to have access to such a service. With that in mind, HIV testing provides an opportunity for successful intervention. An analysis of the responses to the question about what services

were offered in connection with the most recent HIV test identified two underlying, interrelated factors: counselling and additional STI testing or hepatitis vaccination.¹⁶ A variance analysis shows that special MSM clinics are best at offering such supplemental services. Health centres and other hospitals are poorest in this regard.

A cautious conclusion from the above observations is that HIV testing services vary according to where they are offered. This is particularly hard on MSM in non-metropolitan regions where special MSM clinics are not available. New opportunities are therefore needed to take advantage of HIV testing to offer various kinds of interventions, as well as to disseminate information to health centres and hospitals where such testing is available. Special MSM clinics can play a key role as models in this regard. Furthermore, HIV prevention interventions that can be provided in connection with testing should be subject to assessment and methodological development.

The respondents to the MSM questionnaire expressed less of a need for access to group-level counselling and psychosocial interventions. Just over ten percent stated that they would like the opportunity to participate in group discussions about sexuality and health. Approximately the same percentage would consider attending group training. Though apparently low, these figures point to a genuine interest among some men. Participating in a discussion group may be an alien concept for some people and initially feel unfamiliar. Such attitudes may shift over time depending on the success of previous interventions and how favourable experiences are communicated by others.

A diffusion model (see Rogers 1995) is suitable in this connection, i.e., focusing initial interventions on “*early innovators*” so that they can become spokesmen for the new methods. As a result, more men will ultimately cross the threshold to participating in group sessions.

The general impression conveyed by the review is that Swedish HIV prevention is innovative and captures the currents of the time. The Swedish effort consequently needs to be more visible in international research. Swedish intervention will thereby not only gain status and recognition but become more rooted in the scientific approach. For instance, assessments will begin to include outcome measurements. But the formulation of such measurements is a difficult question. Simply determining the frequency of UAI without placing it in context is a blunt tool for assessing successful intervention. Gauging effectiveness on a quantitative basis only is too limiting.

16. The results of the analysis are preliminary and unpublished.

The systematic reviews described in this report yield just as much information. Nevertheless, meta-analyses lend credence to evidence-based conclusions. To be suitable for inclusion in meta-analyses, Swedish studies must be reported in a particular way. The recommendation of this report is that those who publish Swedish research on HIV prevention intervention take account of these requirements.

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APPENDIX I. ARTICLES INCLUDED IN THE SIX INTERNATIONAL RESEARCH REVIEWS

Intervention described in article	Herbst	Johnson	Wolitski	Weinhart	Ellis	Rees
Amirkhanian et al. (2003) Social Network Leader Training Program: Training of social leaders to inform about and discuss HIV and safer sex with others in their social network.	X					
Choi et al. (1996) API LivingWell Project: training and group discussions about HIV, safer sex and ethnic identity among Asian MSM.	X	X			X	
Coates et al. (1989) Various types of group-level stress management exercises.	X	X				
Coates et al. (1987) HIV counselling and testing.				X		
Dawson et al. (1991) HIV counselling and testing			X			
Dilley et al. (2002) Counselling that focused on the relationship between behaviour and cognition. The participants also kept sex diaries that they reflected about.	X					X
Doll et al. (1990) HIV counselling and testing.				X		

Intervention described in article	Herbst	Johnson	Wolitski	Weinhardt	Ellis	Rees
Elford et al. (2001) The 4 gym project: peer educators were recruited to deliver HIV risk reduction messages to MSM gym members.	X					X
Flowers et al. (2002) Gay Men's Task Force: peer education, special medical services for MSM, and information over a telephone hotline.	X					X
Fox et al. (1987) HIV counselling and testing.				X		
Gold and Rosenthal (1995) The participants kept sex diaries of occasions on which they broke their own rules on safer sex.	X				X	
Gold and Rosenthal (1998) The participants kept sex diaries of occasions on which they broke their own rules on safer sex.	X					X
Goldbaum et al. (1999) AIDS Community Demonstration Project: outreach and distribution of condoms.	X					

Intervention described in article	Herbst	Johnson	Wolitski	Weinhardt	Ellis	Rees
Honnen and Kleinke (1990) Posters and information at bars about condoms and how many people had been infected with HIV.					X	
Huggins et al. (1991) HIV counselling and testing.			X	X		
Imrie et al. (2001) A one-day workshop focusing on the relationship between cognition and sexual behaviour.	X					X
Kegeles et al. (2002) Outreach, including information about safer sex, group-level peer education for young gay men, plus a publicity campaign.	X					
Kegeles et al. (1996) Mpowerment Project: outreach, including information about safer sex, group-level peer education for young gay men, a special meeting place for young gay men (community centre) and a publicity campaign.	X	X			X	
Kelly et al. (1989) Instruction about HIV and AIDS combined with exercises that focused on the relationship between cognition and behaviour.	X	X			X	

Intervention described in article	Herbst	Johnson	Wolitski	Weinhart	Ellis	Rees
Kelly et al. (1991) Popular opinion leaders were used in a campaign at bars and clubs.	X	X			X	
Kelly et al. (1993) Milwaukee AIDS Project; group sessions that focused on cognition and behaviour, as well as participation in a social support group.	X					
Kelly et al. (1996) One-day workshop focusing on relationships and sexual risk behaviour at their various stages.					X	
Kelly et al. (1997) Popular opinion leaders were trained in talking with men about safer sex at bars and clubs.	X	X			X	
Miller (1995) Keep It Up: workshop to prevent men from breaking their own rules on safer sex (relapse).	X	X				
Miller et al. (1998) Hustler Bar Project: popular opinion leaders were informed about risk management strategies in bars frequented by men who sell sex to other men.	X					

Intervention described in article	Herbst	Johnson	Wolitski	Weinhart	Ellis	Rees
Ostrow et al. (1989)			X			
Peterson et al. (1996)	X	X			X	
Picciano et al. (2001)	X					X
Remafedi (1994)	X					
Roffman et al. (1995)			X			
Roffman et al. (1997)	X					

Intervention described in article	Herbst	Johnson	Wolitski	Weinhart	Ellis	Rees
Roffman et al. (1998) Group-level intervention, including three sessions focusing on cognition and behaviour, as well as practical exercises in negotiating safer sex.	X					
Rosser (1990) Counselling after the participant had watched a video with a safer sex message.	X					
Rosser (1991) Grim Reaper Public AIDS Campaign: fear-based public education campaign (including television and cinema ads).	X					
Rosser et al. (2002) Two-day seminar on sexual health and communicating about sexuality.	X					X
Sampaio et al. (2002) Projeto Contato: Brazilian project that included group discussions about risk reduction strategies and techniques, as well as practical exercises.	X					
Schechter et al. (1988) HIV counselling and testing.					X	

Intervention described in article	Herbst	Johnson	Wolitski	Weinhart	Ellis	Rees
Shepherd et al. (1997) HAPEER Project: peer education.						X
Shoptaw et al. (2005) Risk-reduction intervention group with former methamphetamine users.	X					
Stall et al. (1999) Support group for former drug users focusing on the relationship between drugs and sexual risk behaviour.	X					
Toro-Alfonso et al. (2002) Stop AIDS Project: small group meetings and workshops focused on intimacy, relationships, drug abuse, sex behaviour and HIV/STDs.	X					
Tudiver et al. (1992) Talking Sex Project: serial session group that discussed and practiced risk reduction strategies and establishing relationships.	X				X	
Valdiserri et al. (1989) AIDS Prevention Project: risk reduction interventions through lectures, information about safer sex and rehearsing ways of lowering the risk of HIV transmission.	X	X			X	

Intervention described in article	Herbst	Johnson	Wolitski	Weinhardt	Ellis	Rees
van Griensven et al. (1989) HIV counselling and testing.				X		
Zapka et al. (1991) HIV counselling and testing.			X	X		
Zimmerman et al. (1997) Training of peer educators for community outreach that included providing information about HIV and safer sex, as well as empowerment.	X					

