National Institute for Health and Clinical Excellence

Preventing and reducing HIV transmission among men who have sex with men (MSM): interventions to increase the uptake of HIV testing

Systematic reviews of effectiveness, cost-effectiveness and qualitative evidence

FINAL REPORT

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Disclaimer

Confidentiality

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Declaration of authors' competing interests

No authors have competing interests.

Contents

1.0 Executive summary

1.1 Introduction

This report presents the findings of a systematic review of effectiveness, cost-effectiveness and qualitative evidence relating to increasing the uptake of HIV testing services among men who have sex with men (MSM). The research questions were:

1. What are the most effective and cost-effective ways of increasing the uptake of HIV testing to reduce undiagnosed infection among MSM?

- What are the differences in impact by population characteristics (age, ethnicity)?
- What are the differences due to the person delivering the intervention?
- What differences are attributable to the place/venue?
- Are there any adverse outcomes or unintended consequences?

2. What factors help or hinder the uptake of HIV testing by MSM and how can the barriers be overcome?

- What are the views of service providers?
- What are the views of people who use the service?
- What are the views of people who do not use the service but are at risk of HIV?

1.2 Methods

To locate evidence, a wide range of databases and websites indexing potentially relevant literature were searched. Key journals in the field were also searched by hand. Inclusion criteria for the review of effectiveness and cost-effectiveness were:

- Does the study include men who have sex with men (MSM), or focus on services aimed at MSM?
- Does the study relate to HIV testing?
- Was the study conducted in an OECD country?
- Was the study published in 1996 or later?
- Does the study include MSM who are HIV-negative or do not know their HIV status, and are competent to consent to an HIV test?
- Does the study relate to an intervention that aims to increase the uptake of HIV testing?
- Is the study a prospective intervention study (randomised controlled trial, non-randomised controlled trial, or one-group intervention study), or a cost-benefit or cost-effectiveness analysis, or any other type of economic evaluation?

Inclusion criteria for the review of views were:

- Does the study include men who have sex with men (MSM), or focus on services aimed at MSM?

- Does the study relate to HIV testing?
- Was the study conducted in an OECD country?
- Was the study published in 1996 or later?
- Does the study present qualitative views data regarding perceptions of or attitudes to HIV testing, or testing services?

The quality of included studies was assessed, and data were extracted, using the standard tools for NICE public health evidence reviews. Data for the effectiveness and cost-effectiveness review was synthesised narratively. Data for the review of views was synthesised using a thematic analysis method.

1.3 Findings

Twelve effectiveness studies, one cost-effectiveness study and 17 qualitative views studies were included in the review. The findings of the review are summarised in the evidence statements below. Each study is also assigned a quality rating: ++ (high quality), + (medium quality) or – (low quality).

Evidence statement 1: Effectiveness – type of test and testing protocol

There is evidence from one pseudo-randomised controlled trial with Latino men in the USA (Galvan et al. 2006 [+]) that bundling HIV tests with other tests for alcohol and drug dependence, depression and other STIs, and offering these tests in an outreach setting (bars), does not increase uptake relative to offering HIV tests alone (10.2% uptake versus 8.9%; p=0.173).

There is evidence from one RCT in the USA (Spielberg et al. 2005 [++]) that in outreach settings (bathhouses), offering either oral fluid testing or rapid serum testing and counselling increases uptake of HIV tests relative to traditional serum testing and counselling (respectively 22.8% and 21.2% uptake versus 15.8%; respectively p<0.001 and p<0.01).

There is evidence from one RCT in the USA (Spielberg et al. 2000 [++]) that high levels of adherence to home testing protocols for oral fluid and dried blood spot testing can be achieved. However, it is unclear whether one protocol is preferable to the other in terms of adherence.

None of these studies assessed longer-term outcomes.

Applicability

All of these studies were conducted in the USA. It is possible that differences in the context of community settings between the USA and the UK may limit applicability; however, there is no particular reason to think that the findings are not applicable.

Evidence statement 2: Effectiveness – peer education and recruitment

There is evidence from two non-randomised controlled trials in the UK (Elford et al. 2000 [–]; Flowers et al. 2002 [+]) that peer outreach and recruitment programmes, which involve training MSM peers to encourage HIV testing in community and outreach settings (bars or gyms), is not effective in increasing HIV testing rates among the MSM population (for Flowers et al. 2002 [+], p=0.27; for Elford et al. 2000 [–], p>0.1 at all time points). However, both of these studies have limitations in their design or reporting. The reach of these interventions (the number of MSM in the targeted population reporting some contact with or knowledge of the intervention) appears to be low.

There is evidence from one RCT in the USA (Wilton et al. 2009 [++]) that a peer-led intensive residential programme can increase HIV testing among black MSM (54.8% of intervention participants versus 43.3% of controls at 6-month follow-up; p=0.023).

Applicability

Two of these studies were conducted in the UK, and one in the USA. It is possible that there are cultural differences that limit the applicability of the findings of non-UK studies of intensive peer-led programmes.

Evidence statement 3: Effectiveness – media and web-based campaigns

There is mixed evidence regarding the effectiveness of targeted media campaigns using MSM-oriented media to promote HIV testing. Studies of these interventions were of low quality overall. One before-and-after study of an extensive, targeted media campaign in Australia, incorporating print media, radio and display advertising in a range of settings, found that it was not effective in increasing HIV testing among the MSM population (Guy et al. 2009 [–]: p=0.34 based on survey data). One other before-and-after study from the UK found an increase in HIV testing among MSM at one clinic after the implementation of a media campaign encouraging MSM to test at this clinic (from 65 to 292 tests conducted; p<0.001) (McOwan et al. 2002 [–]). However, it is unclear to what extent this finding reflects higher rates of testing in the population.

One before-and-after study from the USA found that a brief video intervention delivered via an advert on a commercial website was effective in increasing HIV testing among MSM (from 26% to 44%; p=0.03) (Chiasson et al. 2009 [+]).

Applicability

One of three studies in this group was conducted in the UK. There is no particular reason to think that there may be barriers to applicability of the non-UK findings.

Evidence statement 4: effectiveness – changes to service delivery

Findings regarding the effectiveness of changes to HIV testing services are promising but not conclusive. Two before-and-after studies, both from the Netherlands, evaluated opt-out strategies implemented in STI clinics (Dukers-Muijrers et al. 2009 [–]; Heijman et al. 2009 [+]).

Both studies found an increase in the proportion of MSM taking an HIV test after the introduction of opt-out policies. One study found this increase to be significant (Dukers-Muijrers et al. 2009 [–]), while in one it was not tested for significance (Heijman et al. 2009 [+]).

One before-and-after study, conducted in Australia, evaluated the implementation of guidelines recommending annual STI screening for MSM (Ryder et al. 2005 [–]). However, although an increase in HIV testing was observed, the difference was not tested for significance.

Applicability

None of the studies in this group was conducted in the UK. It is possible that there may be barriers to applicability due to differences in the delivery and organisation of services.

Evidence statement 5: cost-effectiveness – peer education and recruitment

One economic study was located. This study evaluated a peer recruitment intervention implemented in the USA, in which MSM peers were trained to encourage peers from their social networks to seek HIV testing (Golden et al. 2006 [–]). Effectiveness data for this analysis comes from an observational design with no comparison group. The total cost per new HIV case identified was calculated to be US$4929, and the cost per person receiving a positive result US$5377. As in the effectiveness studies on peer-based interventions, the reach of the intervention was limited.

Applicability

No economic studies were identified from the UK. There may be limitations to the applicability of data regarding costs. In addition, the potential barriers to applicability of effectiveness results for this type of intervention which are mentioned above (ES 2) also apply to the findings of economic evaluations.

Evidence statement 6: views – cues to action – symptoms

Five studies find that experiencing symptoms or persistent illness may be a reason to seek an HIV test (Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Paparini et al. 2008 [–]; Remien et al. 2009 [++]; Stoelb 2006 [–]). However, one of these studies finds that not all MSM are well-informed about the symptoms of acute HIV infection (Remien et al. 2009 [++]). A further one study finds that MSM may delay being tested even where symptoms are present (Lekas et al. 2005 [–]).

Applicability

Most of the studies in this group were not conducted in the UK. However, there is no particular reason to think that the findings are not applicable.

Evidence statement 7: views – cues to action – routine

Four studies find that routine testing is a common reason for accessing HIV testing services (Lee and Sheon 2008 [++]; Mimiaga et al. 2007 [++]; Paparini et al. 2008 [–]; Stoelb 2006 [–]). One of these studies finds that routine is by far the commonest reason cited by MSM seeking HIV testing (Lee and Sheon 2008 [++]).

Applicability

Most of the studies in this group were not conducted in the UK. It is possible that regular routine testing is more common among MSM in other countries.

Evidence statement 8: views – empowerment and responsibility

Two studies find that the desire to act responsibly and be informed about one's health is an important facilitator of testing (Lekas et al. 2005 [–]; Spielberg et al. 2001 [++]).

Applicability

Neither of the studies in this section was conducted in the UK. It is unclear whether there are any barriers to the applicability of the findings.

Evidence statement 9: views – uncertainty and denial

Four studies find that the desire to eliminate uncertainty and seek peace of mind may be a reason to get an HIV test (Flowers et al. 2003 [++]; Godin et al. 2000 [–]; Mimiaga et al. 2007 [++]; Stoelb 2006 [–]). For some participants this is clearly linked to the expectation that the result will be negative, while for others, even a positive result may be preferable to ongoing uncertainty about one's status.

Five studies find that people may avoid or delay testing for HIV because they avoid thinking about the risks and benefits, or because they frame their own situation such as to minimise the need for testing (Flowers et al. 2000 [++]; Flowers et al. 2003 [++]; Godin et al. 2000 [–]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]). One study finds that having unknown status is preferable in certain respects to having known HIV-positive status (Flowers et al. 2000 [++]).

Applicability

Several of the studies in this section come from the UK, and the findings appear to be consistent across countries.

Evidence statement 10: views – consequences of a positive test

Older MSM in one study recalled that prior to the availability of effective treatments, the perception of HIV as a "death sentence" was a barrier to testing (Lekas et al. 2005 [–]).

Participants in one study felt that the negative aspects of living with HIV and undergoing treatment, and the associated worry and stress, were a barrier to testing (Flowers et al. 2001 [++]).

Participants in three studies expressed the view that the fear of major life changes, particularly changes in sexual behaviour, could be a barrier to testing (Flowers et al. 2000 [++]; Mimiaga et al. 2007 [++]; Spielberg et al. 2000 [++]).

Applicability

Several of the studies in this section come from the UK, and the findings appear to be consistent across countries.

Evidence statement 11: views – serosorting and proof of status

Participants in two studies (Dodge et al. 2008 [++]; Prost et al. 2007 [++]) reported that the desire to use HIV test results as part of a serosorting strategy may be a motivation to test for HIV. One study (Dodge et al. 2008 [++]) finds that participants used HIV testing either as an additional measure of safety when beginning a new relationship, or to provide proof of negative status to potential partners.

Applicability

One of two studies in this group comes from the UK. It is unclear whether there are any barriers to applicability.

Evidence statement 12: views – patterns of testing within relationships

Six studies find that experiencing risky sexual events, such as unprotected intercourse with a status-unknown or HIV-positive partner, or learning that a partner or ex-partner had tested positive, could be a motivation for taking an HIV test (Dodge et al. 2008 [++]; Lee and Sheon 2008 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]; Stoelb 2006 [–]).

Three studies find that the beginning of a new relationship may be a motivation to seek an HIV test (Dodge et al. 2008 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]).

Applicability

None of the studies in this section comes from the UK. However, there is no particular reason to think that the findings are not applicable.

Evidence statement 13: views – knowledge and awareness

Three studies find that some MSM lack knowledge about testing services, testing modalities or the meaning of different test results (Mimiaga et al. 2007 [++]; Remien et al. 2009 [++]; Spielberg et al. 2001 [++]). Two of these studies find that lack of knowledge may be a barrier to testing, or increased awareness a facilitator of testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

Applicability

None of the studies in this section comes from the UK. However, there is no particular reason to think that the findings are not applicable.

Evidence statement 14: views – testing venues

Participants in one study (Spielberg et al. 2001 [++]) noted the importance of offering services accessible to all MSM in increasing uptake of HIV testing.

Participants in two studies (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]) expressed a preference for community-based services over services offered in clinical settings.

Participants in two studies (Spielberg et al. 2001 [++]; Prost et al. 2007 [++]) saw testing in social venues such as bars or clubs as inappropriate. In one of these studies (Prost et al. 2007 [++]), participants also expressed concerns about the difficulties of obtaining informed consent and providing appropriate post-testing support.

One study (Woods et al. 2008 [+]) which conducted a process evaluation of on-site testing in a sauna setting found that this intervention was generally acceptable to both service users and service providers, and was regarded positively.

Applicability

Only one of the studies in this section comes from the UK (Prost et al. 2007 [++]). Participants in this study were noticeably less positive about testing in non-traditional venues than those in other studies. Hence, there may be issues relating to the applicability of the non-UK findings.

Evidence statement 15: views – service delivery

Two studies report that confidentiality or anonymity are an important facilitator of testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]). One further study finds that participants prefer to be tested in an area that is secluded and private when tests are offered in non-clinical settings (Prost et al. 2007 [++]).

Two studies address participants' preferences for testing modalities, finding that less invasive methods such as oral testing are preferred to urethral swabs and venipuncture (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]). Participants in one study expressed mixed views regarding home specimen collection as a testing modality (Spielberg et al. 2001 [++]).

Participants in two studies said that services being available for free was a facilitator of testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]) .

Participants in two studies said that long waiting times were a barrier to testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

Participants in two studies expressed a preference for respectful and non-judgmental treatment in the testing situation, and for not being obliged to answer questions about sexual behaviour (Mimiaga et al. 2007 [++]; Worthington and Myers 2002 [++]).

Participants in one study expressed strongly positive views about counselling support, particularly if offered by HIV-positive peers (Mimiaga et al. 2007 [++]). In contrast, participants in one study saw pre-test counselling as unhelpful (Spielberg et al. 2001 [++]).

Applicability

One of three studies in this group was from the UK. Differences regarding the delivery of HIV testing services in other countries, such as cost, may have an impact on the applicability of the findings.

Evidence statement 16: views – test results

One study found that receiving positive results was made often more difficult by negative emotional reactions, or by a judgmental or impersonal approach, on the part of service providers. However, several participants in this study also identified positive aspects of service providers' delivery of test results (Hult et al. 2009 [+]).

Applicability

The one study in this group was conducted outside the UK. It is unclear if there are any barriers to applicability.

Evidence statement 17: views – peer and community norms

Two studies found that pro-testing norms or encouragement from peers can be a facilitator of testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

Applicability

Neither of the studies in this group was conducted in the UK. It is unclear if there are any barriers to applicability.

Evidence statement 18: views – stigma and discrimination

Three studies find that the fear of anti-MSM prejudice among service providers and the broader society may be a barrier to testing (Godin et al. 2000 [–]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

Participants in one study expressed a fear that being seen to take an HIV test would lead to the assumption that they engaged in risky sexual behaviour (Prost et al. 2007 [++]).

One study finds that prejudices against HIV-positive people among MSM may act as a barrier to testing (Flowers et al. 2000 [++]).

Applicability

Two studies in this group come from the UK. Findings regarding anti-MSM prejudice among service providers come only from non-UK studies, and may not be generalisable.

Evidence statement 19: population subgroups – age

Overall, few differences between older and younger MSM were found in the studies. Two studies found that older MSM's attitudes might be different because of their experience of HIV prior to the availability of effective treatments (Flowers et al. 2001 [++]; Lekas et al. 2005 [–]).

Evidence statement 20: population subgroups – ethnicity and nationality

One study focuses on African MSM living in the UK (Paparini et al. 2008 [–]). Motivations for testing in this population appear to be similar to those for other MSM.

2.0 Aims and background

2.1 Aims and research questions

The National Institute for Health and Clinical Excellence (NICE) has been asked by the Department of Health (DH) to develop guidance for sexual health services on public health interventions aimed at preventing and reducing HIV transmission among men who have sex with men (MSM). The guidance will focus on MSM in England who have been diagnosed HIV-negative or do not know their HIV status. The guidance will consider any intervention that aims to increase the uptake of HIV testing, either provider-initiated or client-initiated, by MSM.

The aim of the review is to evaluate the effectiveness and cost-effectiveness of strategies to increase the uptake of HIV testing among men who have sex with men, and the relevant barriers and facilitators of HIV testing. The evidence identified in the reviews will inform the considerations of the NICE committee in drafting recommendations for this guidance. The research questions are:

1. What are the most effective and cost-effective ways of increasing the uptake of HIV testing to reduce undiagnosed infection among MSM?

- What are the differences in impact by population characteristics (age, ethnicity)?
- What are the differences due to the person delivering the intervention?
- What differences are attributable to the place/venue?
- Are there any adverse outcomes or unintended consequences?

2. What factors help or hinder the uptake of HIV testing by MSM and how can the barriers be overcome?

- What are the views of service providers?
- What are the views of people who use the service?
- What are the views of people who do not use the service but who are at risk of HIV?

2.2 Background

It is estimated that 33,300 MSM in the UK were living with HIV as of 2008, of whom 8,950 were undiagnosed (HPA 2009. Strategies to prevent HIV in this population include education and community-based awareness-raising about the risks of HIV, and the promotion of safer sex through condom distribution, outreach work and other means. Increasing the uptake of voluntary counselling and testing (VCT) also has a potentially important role to play in reducing HIV. Of MSM attending genitourinary medicine (GUM) clinics in 2008, 3.1% were found to have an undiagnosed HIV infection (HPA 2009).

Of new HIV diagnoses among MSM in 2008, 34% had CD4 cell counts below the threshold at which treatment should normally be commenced (<350 per mm^3 within three months of diagnosis), and 20% had CD4 counts less than 200 per mm^3 (HPA 2009). Late HIV diagnosis is an important predictor of morbidity and mortality. Patients who start treatment at a more advanced stage of disease respond less well to treatment, and remain at increased risk of death for many years following treatment initiation (ART Cohort Collaboration 2007). While the figures for MSM are lower than for other groups in the population, they indicate that substantial benefit could be gained by increasing the uptake of HIV testing and hence increasing early diagnosis.

HIV testing may also have other positive impacts on behaviour, by providing an environment for advice and discussion regarding individuals' HIV status and risk behaviours, and by linking individuals to services and supportive environments. It is known that high-risk sexual behaviour may be reduced after testing, at least for HIV-positive individuals (Marks et al. 2005; Weinhardt et al. 1999), indicating that increased uptake of testing is likely to reduce such behaviours. In addition, it is estimated that the transmission rate from people unaware of their HIV status is several times the rate from people who are aware of their status, so the broader effects of increased testing on infection rates across the population are likely to be substantial (Marks et al. 2006). More broadly, actions to promote HIV testing may help to raise awareness of HIV and HIV testing services and promote pro-testing social norms among MSM beyond those who directly receive the intervention.

The potential benefits of interventions to increase HIV testing among MSM are thus manifold, including both direct benefits as a result of early detection and indirect benefits resulting from increased awareness and reduced risk behaviours.

This review has a focus on interventions to promote HIV testing among MSM. However, in interpreting our findings, the broader context of such interventions should be borne in mind. International guidelines recommend that a range of different measures should be adopted to combat the epidemic, with targeted interventions needed to address both individual risk and social vulnerability, as part of a nationally co-ordinated response based on the expressed needs and preferences of the communities affected (UNAIDS 2005; UNAIDS 2007). Among MSM in the UK, a range of factors may act as barriers either to the success of interventions, or to the translation of this success into wider benefits. As well as the influences identified by our review of views and perspectives, a number of aspects of behaviour not covered by this review may be relevant. For example, it is known that serosorting continues to be widespread among MSM (Eaton et al. 2007; Hart and Elford 2010), leaving some men at heightened risk of infection if HIV testing has not been recent and/or they are unsure of their own or their partner's serostatus. This suggests that the relation between uptake of testing and exposure to HIV risk, particularly in the longer term, is likely to be complex and unpredictable. More broadly, it should be remembered that MSM in the UK are a diverse group, and different subgroups of the MSM population may have different needs and encounter different barriers to accessing services (Hickson et al. 2009).

Since 2001, national guidelines have recommended that all attendees at genito-urinary medicine (GUM) clinics should be offered an HIV test (DH 2001; BHIVA, BASSH and BIS 2008). Current guidelines (BHIVA, BASSH and BIS 2008) state that HIV testing should be offered to MSM annually, and more frequently if symptoms indicative of seroconversion or high risk exposure are present. HIV testing can be carried out by any trained healthcare worker. Pre-test counselling, covering the benefits of testing and the delivery of test results, and directly addressing any misconceptions about HIV testing or treatment, should be given. Patients testing positive should be referred to specialist services for further counselling, and a recall process should be in place to contact individuals who do not return to receive their test results. The guidelines also recommend considering offering testing for MSM in community settings as well as in healthcare settings. The broader purpose informing the guidelines is to normalise HIV testing and integrate it into service provision, while also ensuring informed consent.

3.0 Methods

The review was conducted in accordance with the second edition of *Methods for the development of NICE public health guidance* (NICE 2009). The following sections set out the methods used for searching, screening, and subsequent stages of the review process.

3.1 Searching

3.1.1 Database searching

The following databases were searched from 1996 to December 2009:

- Applied Social Sciences Index and Abstracts
- BL Direct
- British Nursing Index
- Centre for Reviews and Dissemination (including DARE and NHS EED)
- Cochrane Database of Systematic Reviews (including the Health Technology Assessment database and CENTRAL)
- Cumulative Index to Nursing & Allied Health Literature
- Current Contents Connect
- EconLit
- EMBASE
- ERIC (Education Resources Information Centre)
- Health Management Information Consortium
- Medline
- Medline In-Process
- PsycINFO
- Scopus
- Social Policy and Practice
- Web of Science (including Social Science Citation Index, Science Citation Index, and Conference Proceedings Citation Index)

The full search strategies are set out in Appendix A. Once the searches were completed, references were imported into Reference Manager[1]; 14,042 records were successfully imported. These references were then de-duplicated. At this point the records were exported to Matrix Evidence's own database and screening tool.

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[1] Three of the resources searched, AEGIS, SIGLE and NRR, did not have export functionality and so results had to be manually scanned rather than imported into Reference Manager together with the rest of the database searches (see section 3.1.2 below).

3.1.2 Web and hand searching

The following three databases were treated as hand searches, due to the lack of export functionality. They were scanned by hand and potentially relevant studies were added manually to the database.

- AEGIS (AIDSLine and International AIDS Society abstract archives)
- SIGLE (System for Information on Grey Literature in Europe)
- NRR (National Research Register)

In addition, the following websites were searched manually:

- AIDSmap
- AIDS Portal
- AIDSinfo
- Avert
- Centre for Disease Control (Diffusion of Effective Behavioural Interventions)
- EPPI-Centre (BiblioMap)
- Global Forum on MSM and HIV
- Global Network of People living with HIV (GNP+)
- Google Scholar
- Health Technology Assessment Website
- National AIDS Trust
- NLM HIV/AIDS resources
- NICE website and former Health Development Agency
- Terrence Higgins Trust (THT)
- UNAIDS
- UK Clinical Research Network Portfolio Database
- NHS Evidence: HIV and sexually transmitted infections

The following journals were searched by hand from January 2005 to the most recent issue:

- *AIDS*
- *AIDS and Behavior*
- *AIDS Care*
- *AIDS Education and Prevention*
- *International Journal of Sexual Health*
- *Journal of Sexual Medicine*
- *Prevention*
- *Sexual Health*
- *Sexually Transmitted Infections*

3.1.3 Additional sources

Several additional sources were utilised to locate data:

- the expert advisor for the review, Peter Aggleton, suggested potentially relevant references;
- the team working on the parallel review on preventing and reducing HIV transmission among black Africans provided us with a list of potentially relevant references;
- the lists of included studies from relevant systematic reviews were scanned;
- the citation lists of all included studies were scanned;
- "forward" citation chasing was carried out on all included studies using ISI Web of Knowledge; and
- as part of the guidance development process, a call for evidence was issued by NICE (studies arising from the call for evidence are listed in Appendix E).

References arising from all these sources were screened manually.

3.2 Inclusion criteria

3.2.1 Review of effectiveness and cost-effectiveness

For the review of effectiveness and cost-effectiveness, the following inclusion criteria were applied:

- Does the study include men who have sex with men (MSM), or focus on services aimed at MSM?
- Does the study relate to HIV testing?
- Was the study conducted in an OECD country?
- Was the study published in 1996 or later?
- Does the study include MSM who are HIV-negative or do not know their HIV status, and are competent to consent to an HIV test?
- Does the study relate to an intervention that aims to increase the uptake of HIV testing?
- Is the study a prospective intervention study (randomised controlled trial, non-randomised controlled trial, or one-group before-and-after intervention study presenting outcome data both pre- and post-intervention), or a cost-benefit or cost-effectiveness analysis, or any other type of economic evaluation?

Note that in the original protocol, we stated that non-comparative one-group intervention studies would not be included unless insufficient numbers of comparative intervention studies were located. The latter was indeed the case, and non-comparative studies were included in the review.[2] The methodology criterion states, in effect, that to be included, effectiveness studies

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[2] It should be noted that the change to the criteria took place after the original screening was complete, including the manual screening of web and handsearch sources. While references from database sources were re-screened with the more inclusive criterion, those from web and handsearch sources were not. Hence, it is possible that non-comparative before-and-after studies coming from non-database sources were not included.

must *either* contain a comparison group receiving different interventions (randomised or non-randomised) *or* present outcome data for both before and after the intervention. The criterion for economic evaluations is broader, and any economic evaluation was included regardless of the nature of the effectiveness data utilised.

For the first criterion, studies which either had a sample more than 50% of whom were MSM, or which presented disaggregated outcome data on the MSM within the sample, or which focused on services aimed at MSM, were included. Studies of the general population which did not present outcome data on MSM were excluded.

Studies from non-OECD countries (low- and middle-income countries) were excluded because of the likely difficulty in generalising the findings from such studies to the UK context. Studies published before 1996 were excluded because of the lesser relevance of data collected before the introduction of effective anti-retroviral treatment for HIV.

Systematic reviews that included any of the study types listed above were also coded separately and used as a source of further primary studies. They were not included in the review in their own right.

3.2.2 Review of views and perspectives

For the review of views data, the following inclusion criteria were applied:

- Does the study include men who have sex with men (MSM), or focus on services aimed at MSM?
- Does the study relate to HIV testing?
- Was the study conducted in an OECD country?
- Was the study published in 1996 or later?
- Does the study present qualitative views data regarding perceptions of or attitudes to HIV testing, or testing services?

Note that in the original protocol, we stated that quantitative views studies (such as closed-question surveys) would be included as well as qualitative research. After the completion of screening, it was decided not to include such studies because they would contribute little to the views synthesis, and because sufficient views data were available from the included qualitative research.

3.3 Screening

All references from the database searches were uploaded into our database tool and initially screened on title and abstract against the criteria above (a copy of the actual screening checklist tool is available in Appendix B). Where no abstract was available, we first attempted to locate one through a web search; if none could be found, references were screened on title alone. Matrix's own database system, based on Microsoft Access, was used to keep a record of screening decisions, to support reconciliation for double screening, and to provide the data for calculating inter-rater reliability.

A randomly selected initial sample of 10% of records (N=434) was screened by two reviewers independently. The rate of agreement for this sample was 94.5% and the inter-rater reliability (Cohen's kappa) was κ=0.627.[3] These figures were deemed satisfactory by both NICE and Matrix, and remaining references were screened by one reviewer only.

Where abstracts met all the criteria, or if it was unclear from the study abstract whether it did, the full text was retrieved and re-screened. Full-text screening was carried out by two reviewers independently and any differences resolved by discussion. For these references, inter-rater reliability was κ=0.533.

3.4 Quality assessment and data extraction

All studies included on full text were quality-assessed and data were extracted using the appropriate standard forms in NICE's methods manual for public health reviews. A randomly chosen sample of 10% was independently coded by two reviewers; the remaining references were coded by one reviewer and fully checked by a second. Study quality was summarised using the codes ++ (high quality), + (medium quality) and – (low quality). Qualitative studies received a single quality rating. Effectiveness studies received a rating for internal validity and one for external validity; the rating for internal validity is the quality score presented in the evidence statements.

3.5 Data synthesis

3.5.1 Review of effectiveness and cost-effectiveness

The studies of effectiveness did not support meta-analysis and were synthesised narratively, as were the cost-effectiveness studies.

3.5.2 Review of views

Findings from the review of qualitative evidence were synthesised using a framework analysis methodology. The framework employed identifies four levels at which factors influencing the choice to test may operate:

- Individual level (such as knowledge, beliefs and emotions);
- Relationship level (factors relating to sexual partners and relationships);
- Testing services level (the specific contexts of testing); and
- Social level (such as social norms).

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[3] It has been argued that Cohen's kappa or similar measures may under-rate reliability where scores are highly asymmetrical, i.e. numbers for one code are much higher than for the other(s) (Feinstein and Cicchetti 1990). This is the case here, because inclusion rates were fairly low, and hence there were many more studies excluded than included. For this reason, the kappa score is relatively low, even though rates of agreement were high.

Themes for coding were initially developed from the qualitative data in an open-ended way, based on the framework, incorporating reading of the data and discussion between three researchers. Themes were then aggregated as appropriate. Qualitative data are presented under each theme within each of the four levels.

Initially, separate analyses were undertaken of the three groups mentioned in the secondary review questions (service users, people who do not use the service, and service providers). However, it was found that the concerns and views raised were broadly similar across these groups, and in addition that the reporting of studies often did not facilitate making these distinctions (particularly between service users and non-service users). Hence, the views data has not been broken up in this way in this report, although issues of particular relevance to one of the groups have been reported as such within the synthesis.

4.0 Summary of included studies

4.1 Flow of literature through the review

We located 14042 references through database searches, of which 9700 were duplicates; 4342 references were screened on title and abstract and 4137 excluded. The remaining 205 references proceeded to full text screening. Four of these could not be retrieved. Of the 201 full-text study reports retrieved, 178 were excluded and 23 included.

An additional five references were located through searching websites and handsearching journals; one from citation chasing from relevant systematic reviews; and five from forward and backward citation chasing from the included references. Thus, a total of 34 study reports were included. Of these, four were linked publications presenting data from the same research project as another included study report; linked studies were considered together for the purposes of data extraction and synthesis, and not counted separately.[4] Thus, 30 studies were included in the review.

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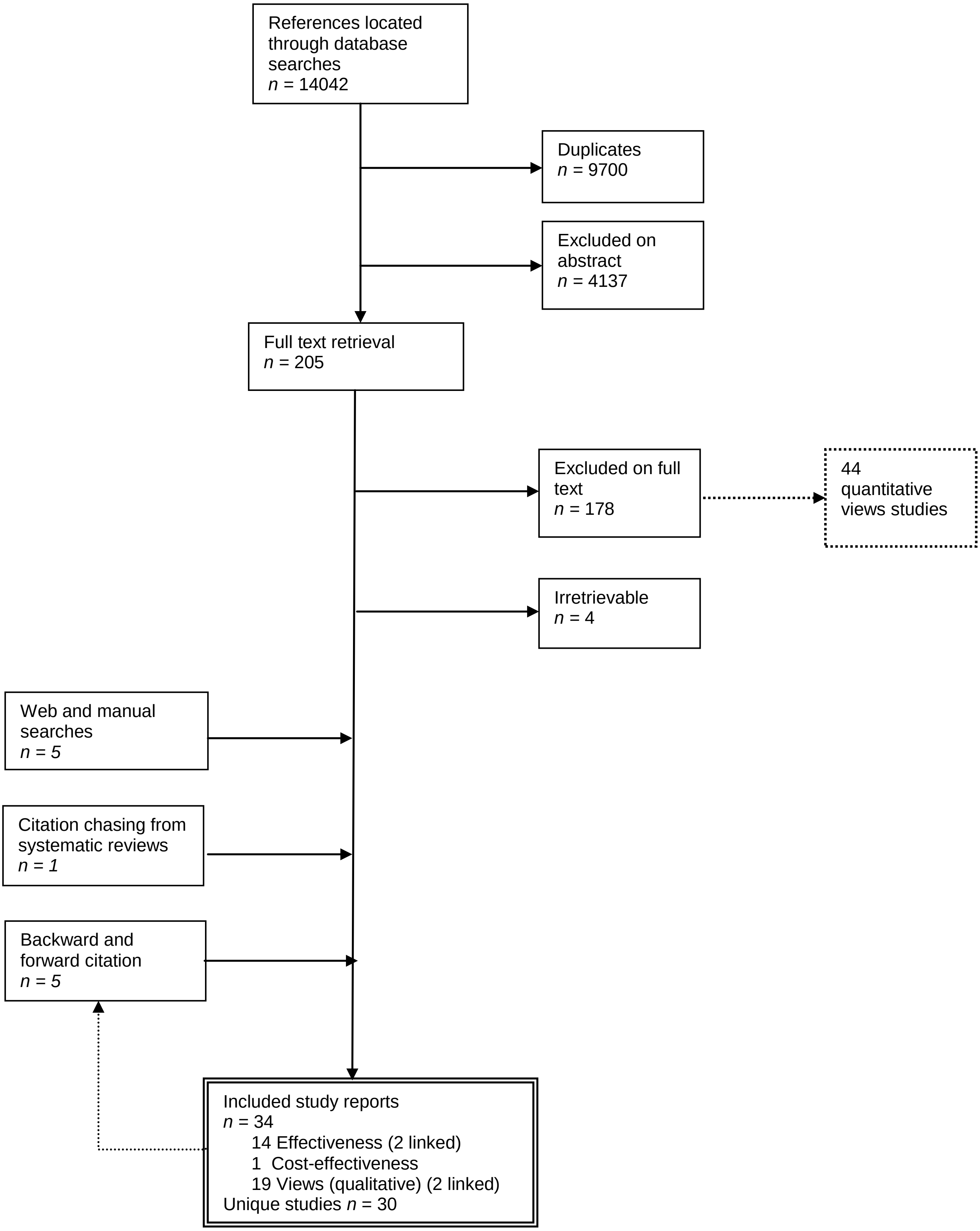
[4] Study reports were not treated as linked where the data presented in the reports was substantially distinct, even if the data came from the same research project. This is the case for three studies in this review (Flowers et al. 2000; Flowers et al. 2001; Flowers et al. 2003).

Figure 1. Flow of literature



4.2 Study characteristics

This section provides a brief overview of the characteristics of the included studies. Information on the study aims, methods, and contexts are presented in Tables 1-3 below.

Effectiveness studies (n=12)

Twelve studies were included in the effectiveness review. Of these:

- three compared different types of test or testing protocols (Galvan et al. 2006 [+]; Spielberg et al. 2000 [++]; Spielberg et al. 2005 [++]);
- three evaluated peer education or recruitment programmes, either intensive residential programmes (Wilton et al. 2009 [++]) or community-based programmes (Flowers et al. 2002 [+]; Elford et al. 2000 [–]);
- three evaluated community-based media campaigns (Guy et al. 2009 [–]; McOwan et al. 2002 [–]) or web-based educational interventions (Chiasson et al. 2009 [+]); and
- three evaluated changes to service delivery, including opting-out schemes (Dukers-Muijrers et al. 2009 [–]; Heijman et al. 2009 [+]) and clinical guidelines recommending annual screening (Ryder et al. 2005 [–]).

Five studies were conducted in the USA, three in the UK, two in Australia and two in the Netherlands. Two studies included only minority ethnic MSM, both in the USA (Galvan et al. 2006 [+]; Wilton et al. 2009 [++]), and two targeted minority ethnic MSM within the context of an intervention that aimed to reach the general MSM population (Guy et al. 2009 [–]; McOwan et al. 2002 [–]).

Cost-effectiveness studies (n=1)

One study was included in the review of cost-effectiveness (Golden et al. 2006 [–]). This study was conducted in the USA and evaluated a peer education and testing recruitment programme.

Qualitative studies (n=17)

Seventeen studies were included in the review of qualitative studies of MSM's views about HIV testing. Nine were conducted in the USA, six in the UK and two in Canada. Three studies focused on particular populations: black MSM in the USA (Dodge et al. 2008 [++]); MSM of African origin in the UK (Paparini et al. 2008 [–]); and older people (Lekas et al. 2005 [–]). Most of the studies used either individual interviews or focus groups to collect data. Two studies used discourse analysis methodologies to analyse conversations between people having an HIV test and service providers (Hult et al. 2009 [+]; Lee and Sheon 2008 [++]).

Ten studies focused exclusively on MSM, while seven also included other populations (Beardsell 1999 [+]; Hult et al. 2009 [+]; Lee and Sheon 2008 [++]; Lekas et al. 2005 [–]; Remien et al. 2009 [++]; Spielberg et al. 2001 [++]; Worthington and Myers 2002 [++]). In most cases the non-MSM populations in the latter studies included other groups at high risk of HIV, such as injecting drug users. For these studies, only data relating to MSM were extracted and used in this review.

4.2.1 Previous systematic reviews

Two systematic reviews were identified which met the inclusion criteria (Rees et al. 2004; Vidanapathirana et al. 2005). These reviews were not included in this review as such, but the lists of studies included in each was scanned for relevant citations.

Neither of these reviews had exactly the same scope as the present review. One (Vidanapathirana et al. 2005) was broader in terms of population but narrower in terms of intervention: this review covered only mass media interventions to promote HIV testing, but included all populations, not only MSM. The other review included HIV health promotion interventions for MSM in general (Rees et al. 2004); however, the primary focus was risk reduction, and effectiveness synthesis was not carried out for HIV-testing-related outcomes, only for sexual risk behaviours.

Table 1. Summary of identified study reports (effectiveness)

Study reference	Aim	Study type	Population targeted	Country
Chiasson et al. 2009	To evaluate an online HIV risk reduction intervention for MSM	Before-and-after	MSM	USA
Dukers-Muijrers et al. 2009	To evaluate the effectiveness of an opting-out approach to HIV testing	Before-and-after	General population	Netherlands
Elford et al. 2000	To evaluate a peer education intervention for HIV risk reduction	nRCT	MSM	England
Flowers et al. 2002	To evaluate the effectiveness of a bar-based, peer-led community-level intervention to promote sexual health among gay men	nRCT	MSM	Scotland
Galvan et al. 2006	To examine whether offering HIV testing with screening for other conditions would increase HIV testing among Latino men who frequent gay bars	nRCT	Latino MSM	USA
Guy et al. 2009	To evaluate the effectiveness of a social marketing campaign to increase HIV and STI testing among MSM	Before-and-after	MSM	Australia
Heijman et al. 2009	To study the effect of an opting-out strategy on the uptake of HIV testing	Before-and-after	General population	Netherlands
McOwan et al. 2002	To evaluate a multimedia HIV testing campaign	Before-and-after	MSM, particularly black and southern European	England
Ryder et al. 2004	To conduct a clinical audit of adherence to and impact of new STI testing guidelines	Before-and-after	MSM	Australia
Spielberg et al. 2000	To assess the feasibility and acceptability of bimonthly home oral fluid and dried blood spot collection for HIV testing among high-risk individuals	RCT	People at risk of HIV	USA
Spielberg et al. 2004	To compare the effectiveness of four strategies of HIV testing and counselling at a needle exchange and two bathhouses to determine effectiveness	RCT	People at risk of HIV	USA
Wilton et al. 2009	To evaluate the effectiveness of an HIV/STI prevention intervention for black MSM	RCT	Black MSM	USA

Table 2. Summary of identified study reports (economic evaluations)

Study reference	Aim	Method	Targeted population	Country
Golden et al. 2006	To evaluate the effectiveness and cost-effectiveness of a health department-based peer referral programme for identifying previously undiagnosed cases of HIV among MSM	Cost-benefit analysis (using non-comparative observational data for effectiveness)	MSM	USA

Table 3. Summary of identified study reports (views studies)

Study reference	Aim	Method and population	Population	Country
Beardsell 1999	To study the relationship between HIV testing and behaviour change	Interviews	People taking an HIV test	England
Dodge et al. 2008	To study black MSM's perceptions of sexual risk, their risk behaviours, and factors influencing disclosure of bisexuality	Interviews	Black MSM	USA
Flowers et al. 2000	To understand how HIV testing impacts on HIV risk management and on the social construction of gay communities	Interviews and focus groups	MSM	Scotland
Flowers et al. 2001	To understand the impact of new treatments upon gay men's HIV testing behaviour and related beliefs	Interviews and focus groups	MSM	Scotland
Flowers et al. 2003	To understand gay men's perceptions of the costs and benefits of HIV testing	Interviews and focus groups	MSM	Scotland
Godin et al. 2000	To understand the beliefs associated with seeking medical advice promptly when symptoms of HIV infection are suspected among HIV-negative gay men	Focus groups	MSM	Canada
Hult et al. 2009	To describe the experience of testing positive for HIV	Interviews	People taking an HIV test	USA
Lee and Sheon 2008	To understand how the reasons for testing are constructed through interaction in actual HIV test sessions	Audio recordings of HIV test counselling sessions	People taking an HIV test	USA
Lekas et al. 2005	To identify the factors associated with HIV testing among older adults	Interviews	Older people	USA

Study reference	Aim	Method and population	Population	Country
Mimiaga et al. 2007	To identify the barriers and facilitators related to HIV and STD testing among at-risk Boston MSM	Interviews	MSM	USA
Paparini et al. 2008	To explore the experiences of a group of black African men who define themselves as gay and are living with HIV in the UK	Interviews	African MSM	England
Prost et al. 2007	To assess the feasibility and acceptability of offering rapid HIV testing to MSM in gay social venues	Interviews and focus groups	MSM and service providers	England
Remien et al. 2009	To explore the understandings of acute HIV infection (AHI) among individuals diagnosed with acute/early HIV infection in six cities in the USA	Interviews	People diagnosed with AHI	USA
Spielberg et al. 2001	To examine the determinants of, and preferences regarding, HIV testing	Interviews and focus groups	People at risk of HIV	USA
Stoelb 2006	To explore HIV-positive MSM's choices to get tested for HIV	Interviews	MSM	USA
Woods et al. 2008	To conduct a process evaluation of a programme of HIV testing in a club setting	Interviews	MSM and service providers	USA
Worthington and Myers 2002	To explore the factors underlying HIV testing anxiety	Interviews	People at risk of HIV	Canada

4.3 Quality of the studies

The results of quality assessment are presented in Tables 4-6.

Of the effectiveness studies, for internal validity, three were judged to be of high quality [++], four of medium quality [+] and five of low quality [–]. For external validity, none were judged to be of high quality, seven medium and five low. Areas in which many studies received low scores included the representativeness of populations, allocation and blinding, and data analysis.

The one economic study included in the review was rated as having "potentially serious limitations" [–]. This was primarily as a result of the low validity of the underlying effectiveness data, and of the fact that only cost analysis and not cost-effectiveness analysis was undertaken.

Of the qualitative studies, 10 were judged to be of high quality, three medium and four low. Areas in which many studies received low scores included the description of the role of the researcher, data analysis, and ethics.

Table 4. Quality of the included studies (effectiveness)

	Population			Method of allocation to intervention/comparison								Outcomes									Analysis					Summary	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**
Chiasson et al. 2009	-	-	+	NA	+	NA	NA	+	NA	NA	++	+	+	+	+	+	NA	NA	+	NA	NA	NR	NA	+	+	**+**	**-**
Dukers-Muijrers et al. 2009	+	-	NA	NA	++	NA	NA	+	NA	NA	+	+	+	++	+	+	NA	NA	++	NA	NA	NR	-	-	-	**-**	**-**
Elford et al. 2001	+	-	-	-	-	-	-	-	+	NR	+	++	++	+	+	+	NA	++	++	NR	-	++	+	++	+	**-**	**-**
Flowers et al. 2002	+	+	++	+	++	NA	NR	+	+	NR	NA	++	++	+	++	++	NA	++	++	+	NA	++	++	+	++	**+**	**+**
Galvan et al. 2006	++	-	-	+	++	NR	NR	++	+	NR	++	+	+	++	++	++	NA	++	+	NR	+	NR	+	+	+	**+**	**+**
Guy et al. 2009	++	+	++	NA	++	NA	NA	NR	NA	NA	NA	+	+	+	++	++	NA	NA	++	NA	NA	NR	+	+	+	**-**	**+**
Heijman et al. 2009	+	-	NA	NA	++	NA	NA	+	NA	NA	++	+	+	++	++	++	NA	NA	++	NA	NA	NR	+	+	++	**+**	**+**
McOwan et al. 2002	+	-	NA	NA	+	NA	NA	NA	-	NR	NA	++	++	++	++	++	NA	NA	+	NA	NA	NR	+	-	+	**-**	**-**
Ryder et al. 2005	-	-	++	NA	-	NA	NA	-	NA	NA	NA	+	+	++	++	++	NA	NA	-	NA	NA	NR	NA	+	NR	**-**	**-**
Spielberg et al. 2000	+	+	++	++	++	NR	-	++	++	NR	++	+	+	++	++	++	NA	++	++	+	+	NR	+	+	+	**++**	**+**
Spielberg et al. 2005	+	+	+	++	+	++	+	++	++	NR	++	+	+	++	++	++	NA	++	++	NR	++	++	+	++	+	**++**	**+**
Wilton et al. 2009	++	+	++	++	++	++	NA	++	++	NR	++	-	-	+	++	++	NA	++	++	++	++	NR	+	++	+	**++**	**+**

Key to questions:

1. Is the source population or source area well described?
2. Is the eligible population or area representative of the source population or area?
3. Do the selected participants or areas represent the eligible population?

4. How was confounding minimised?
5. Were interventions (and comparisons) well described and appropriate?
6. Was the allocation concealed?
7. Were participants and/or investigators blind to exposure and comparison?
8. Was the exposure to the intervention and comparison adequate?
9. Was contamination acceptably low?
10. Were other interventions similar in both groups?
11. Were all participants accounted for at study conclusion?
12. Did the setting reflect usual UK practice?
13. Did the intervention or control comparison reflect usual UK practice?
14. Were the outcome measures reliable?
15. Were all outcome measurements complete?
16. Were all important outcomes assessed?
17. Were outcomes relevant?
18. Were there similar follow-up times in exposure and comparison groups?
19. Was follow-up time meaningful?
20. Were exposure and comparison groups similar at baseline? If not, were these adjusted?
21. Was Intention to Treat (ITT) analysis conducted?
22. Was the study sufficiently powered to detect an intervention effect (if one exists)?
23. Were the estimates of effect size given or calculable?
24. Were the analytical methods appropriate?
25. Was the precision of intervention effects given or calculable? Were they meaningful?
26. Are the study results internally valid? (i.e. unbiased)
27. Are the study results generalisable to the source population? (i.e. externally valid)

Key to answers 1-25:
++ The study has been designed/conducted in such a way as to minimise the risk of bias
+ Either the answer to the checklist question is not clear from the way the study is reported, or the study may not have addressed all potential sources of bias
- Significant sources of bias may persist
NR The study fails to report this particular question
NA Not applicable given the study design

Key to answers 26-27:
++ All or most of the checklist criteria have been fulfilled; where they have not been, the conclusions are very unlikely to alter
+ Some of the checklist criteria have been fulfilled, where they have not, or not adequately described, the conclusions are unlikely to alter
- Few or no checklist criteria have been fulfilled and the conclusions are likely to alter

Table 5. Quality of the included studies (economic evaluations)

	Applicability (relevance to the specific topic)									**Study limitations (level of methodological quality)**											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**
Golden et al. 2006	Partly	Yes	Partly	Yes	NA	NA	No	No	Partially applicable	NA	NA	No	No	No	Yes	Partly	Yes	No	No	Unclear	Potentially serious limitations

Key to questions:

1. Is the study population appropriate for the topic being evaluated?
2. Are the interventions appropriate for the topic being evaluated?
3. Is the system in which the study was conducted sufficiently similar to the UK context?
4. Were the perspectives clearly stated?
5. Are all direct health effects on individuals included, and are all other effects included where they are material?
6. Are all future costs and outcomes discounted appropriately?
7. Is the value of health effects expressed in terms of quality adjusted life years (QALYs)?
8. Are costs and outcomes from other sectors fully and appropriately measured and valued?
9. Overall judgment (no need to continue if not applicable)
10. Does the model structure adequately reflect the nature of the topic under evaluation?
11. Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?
12. Are all important and relevant outcomes included?
13. Are the estimates of baseline outcomes from the best available source?
14. Are the estimates of relative "treatment" effects from the best available source?
15. Are all important and relevant costs included?
16. Are the estimates of resource use from the best available source?
17. Are the unit costs of resources from the best available source?
18. Is an appropriate incremental analysis presented or can it be calculated from the data?
19. Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?
20. Is there any potential conflict of interest?
21. Overall assessment

Table 6. Quality of the included studies (views studies)

	Theoretical approach		Study design	Data collection	Trustworthiness									Ethics	Overall assessment
	Is a qualitative approach appropriate?	Is the study clear in what it seeks to do?	How defensible/rigorous is the research design/methodology?	How well was the data collection carried out?	Is the role of the researcher clearly described?	Is the context clearly described?	Were the methods reliable?	Is the data analysis sufficiently rigorous?	Is the data 'rich'?	Is the analysis reliable?	Are the findings convincing?	Are the findings relevant to the aims of the study?	Conclusions	How clear and coherent is the reporting of ethics?	How well was the study conducted?
Beardsell 1999	Appropriate	Clear	Defensible	Appropriately	Unclear	Not sure	Reliable	Rigorous	Rich	Reliable	Convincing	Partially relevant	Adequate	Appropriate	+
Dodge et al. 2008	Appropriate	Clear	Defensible	Not sure/inadequately reported	Not described	Clear	Reliable	Rigorous	Rich	Reliable	Convincing	Relevant	Adequate	Appropriate	++
Flowers et al. 2000	Appropriate	Clear	Defensible	Appropriately	Unclear	Clear	Reliable	Rigorous	Rich	Reliable	Convincing	Partially relevant	Adequate	Not sure/not reported	++
Flowers et al. 2001	Appropriate	Clear	Defensible	Appropriately	Unclear	Clear	Reliable	Rigorous	Rich	Reliable	Convincing	Relevant	Adequate	Not sure/not reported	++
Flowers et al. 2003	Appropriate	Clear	Defensible	Appropriately	Unclear	Clear	Reliable	Rigorous	Rich	Reliable	Convincing	Relevant	Adequate	Not sure/not reported	++
Godin et al. 2000	Appropriate	Clear	Defensible	Appropriately	Not described	Unclear	Reliable	Unsure/not reported	Poor	Reliable	Convincing	Relevant	Adequate	Appropriate	-
Hult et al. 2009	Appropriate	Clear	Defensible	Not sure/inadequately reported	Not described	Unclear	Reliable	Rigorous	Unsure/not reported	Reliable	Convincing	Relevant	Adequate	Not sure/not reported	+
Lee and Sheon	Appropriate	Clear	Defensible	Appropriately	Unclear	Clear	Reliable	Rigorous	Rich	Reliable	Convincing	Relevant	Adequate	Appropriate	++

2008															
Lekas et al. 2005	Appropriate	Clear	Not sure	Appropriately	Not described	Unclear	Not sure	Unsure/not reported	Rich	Not sure	Convincing	Partially relevant	Adequate	Not sure/not reported	-
Mimiaga et al. 2007	Appropriate	Clear	Defensible	Appropriately	Not described	Unclear	Reliable	Rigorous	Poor	Reliable	Convincing	Relevant	Adequate	Appropriate	++
Paparini et al. 2008	Appropriate	Clear	Defensible	Appropriately	Unclear	Not sure	Not sure	Unsure/not reported	Poor	Unreliable	Not sure	Partially relevant	Not sure	Appropriate	-
Prost et al. 2007	Appropriate	Clear	Defensible	Appropriately	Unclear	Unclear	Reliable	Rigorous	Rich	Reliable	Convincing	Relevant	Adequate	Not sure/not reported	++
Remien et al. 2009	Appropriate	Clear	Not sure	Appropriately	Not described	Clear	Reliable	Rigorous	Rich	Reliable	Convincing	Relevant	Adequate	Not sure/not reported	++
Spielberg et al. 2001	Appropriate	Clear	Not sure	Appropriately	Unclear	Clear	Reliable	Rigorous	Unsure/not reported	Reliable	Convincing	Relevant	Adequate	Appropriate	++
Stoelb 2006	Not sure	Clear	Not sure	Appropriately	Not described	Unclear	Not sure	Rigorous	Poor	Unreliable	Convincing	Partially relevant	Not sure	Not sure/not reported	-
Woods et al. 2008	Appropriate	Clear	Not sure	Not sure/inadequately reported	Not described	Clear	Reliable	Unsure/not reported	Rich	Reliable	Convincing	Relevant	Adequate	Appropriate	+
Worthington and Myers 2002	Appropriate	Clear	Defensible	Appropriately	Clearly described	Not sure	Not sure	Rigorous	Rich	Reliable	Convincing	Relevant	Adequate	Appropriate	++

Key:
++ All or most of the checklist criteria have been fulfilled; where they have not been the conclusions are very unlikely to alter
+ Some of the checklist criteria have been fulfilled, where they have not, or not adequately described, the conclusions are unlikely to alter
- Few or no checklist criteria have been fulfilled and the conclusions are likely to alter

4.4 Applicability

Across all the reviews, nine out of 30 studies were conducted in the UK, and most of the rest in the USA. There may be some challenges in generalising findings from non-UK studies, particularly those from the USA. Potential barriers include the following: differences in the epidemiology of HIV and AIDS, and its impact on particular communities of MSM; the broad political and social context of health service provision; and differences in the delivery and availability of public health services of the type discussed in this review, such as the relative role of community organisations and government agencies. There may also be social or cultural differences between MSM in different countries that affect the applicability of the findings; for example, social norms relating to routine HIV testing may vary substantially between locations. Even within the UK, for example between Scotland and England, communities of MSM may differ in ways which impact on transferability.

The other main source of potential barriers to applicability is the sampling procedures used in the primary studies. Many of the studies relied on sampling in MSM-oriented venues or events, or through MSM organisations, and in many cases also found high rates of non-participation. These factors may limit the generalisability of the results to the MSM population as a whole. This issue is dealt with for individual studies where they arise in the synthesis, and discussed further in section 6.2 below.

5.0 Findings

5.1 Findings: effectiveness

5.1.1 Type of test and testing protocol

Three effectiveness studies compared different types of test or testing protocols (Galvan et al. 2006 [+]; Spielberg et al. 2000 [++]; Spielberg et al. 2005 [++]). All three were conducted in the USA. These studies sought to measure whether offering different kinds of tests impacts on the proportion of people who undergo testing and who receive their results.

Galvan et al. (2006 [+]) conducted a study comparing the uptake of HIV tests offered alone to HIV tests offered as part of a bundle of tests for other conditions (alcohol dependence, drug dependence and depression) and other STIs (syphilis, gonorrhoea and chlamydia). The tests were offered in gay bars in Los Angeles County, USA, known to be popular with Latino MSM. Participants were recruited if they were Latino, aged over 21, and reported HIV risk behaviours (either unprotected sex or needle sharing with a status-unknown or HIV-positive partner in the previous 12 months). The population in this study was fairly young (66% aged 21-30) and low- to middle-income (91% earned US$50,000 p.a. or less). Most of the participants (69%) described themselves as gay, 28% as bisexual, and the remainder as heterosexual.

The design of this study was a pseudo-randomised controlled trial, with the bundled and HIV-only testing protocols offered on alternate weeks on matched days of the week. The only outcome measure was whether participants agreed to take the HIV test (it is unclear whether all these participants also received their results). The HIV test used was the OraQuick Rapid HIV-1 Antibody Test.

This study found that 10.2% of individuals approached to take the bundled test agreed to take the HIV test, and 8.9% of participants approached to take the HIV test alone. This difference was not significant (p=0.173). Of those who were tested, 3.4% of those in the bundled test group were HIV-positive, and 5.1% of those in the HIV-only group. This difference was also not significant (p=0.596).

Logistic regression analysis found that participants who reported primarily having women as sexual partners were more likely to be tested if offered the bundled test than the HIV-only test (OR 5.46 [1.75, 17.0]). Those reporting a risk factor were non-significantly more likely to be tested with the bundled test (OR 1.44 [0.93, 2.22]). Risk factors included the following: being homeless or in temporary housing; having had sex while intoxicated in last month; having had an STD in the last 12 months; exchanging sex for food, money or shelter in last 12 months; or crack, cocaine or methamphetamine use in last 12 months. Participants at the urban site in a gay-identified area were less likely to be tested with the bundled test than those at a suburban site in a less gay-identified area (OR 0.37 [0.19, 0.74]). Of the 15 HIV-positive individuals found in total, 10 were in the suburban site, and none in the gay-identified urban site (five were in a third, intermediate site); this difference was not tested for significance.

This study used a robust design, apart from the fact that allocation was not truly random. The sampling of sites was non-random, but sampling of individuals was quasi-random within the sites (every second or third person entering the bar). Of the individuals approached, 88% declined to participate, and no data was available on these individuals: hence, it is unclear how they may differ from those who agreed to take the test. The context of recruitment (bars known to be popular with MSM) may mean that findings are not generalisable to the wider population of MSM. The study aimed only to measure uptake of testing, and the potential impact on longer-term behaviours is unclear.

Spielberg et al. (2005 [++]) conducted a similar study comparing the uptake of four testing and counselling protocols in outreach settings in the USA. The study was conducted in three sites: two bathhouses frequented by MSM, and a needle exchange (data from the needle exchange is not presented here). Criteria for inclusion were: English-speaking; 14 years or older; HIV-negative or unknown status; and not having been tested for HIV within the last three months. Of those who were approached by researchers, 21% declined to respond, and 58% did not meet the inclusion criteria, most because they had had an HIV test within the last three months. Of eligible participants at the bathhouses, 80% were estimated to be of white ethnicity, 22% in their twenties or younger, and 6% had never been tested.

The study used a randomised controlled trial design with four arms: (1) traditional serum testing with venipuncture and a return visit to receive results, with standard face-to-face counselling before testing; (2) rapid serum testing (venipuncture and testing with the Single Use Diagnostic System for HIV-1) with same-day test results and single-session counselling; (3) oral fluid testing (OraSure) with standard counselling; and (4) traditional serum testing with the choice of pre-test written materials or standard counselling. The outcomes measured were: (1) acceptance of testing; (2) completion of testing (78% of those who accepted testing completed the test); and (3) receiving the test results within one month (80% of those who completed testing received their results). Across all arms of the study, there was a significant (p<0.01) correlation between completion of testing and shorter waiting times: 88% completed testing where there was no wait, 91% with a waiting time up to 15 minutes, and 55% with a waiting time of two hours. Participants other than those in the rapid testing arm (condition 2) were offered the option of receiving results by telephone or by return visit: 93% chose to receive results by telephone.

This study found that acceptance of oral fluid testing (condition 3, 22.8%) and rapid serum testing (condition 2, 21.2%) was significantly higher than traditional testing with standard counselling (condition 1, 15.8%) (p<0.001 for oral fluid testing, p<0.01 for rapid testing). Completion of testing and receiving results were also significantly higher for both these testing protocols than for traditional testing. There were no significant differences between oral fluid testing and rapid serum testing. Acceptance of traditional testing with a choice of counselling methods (condition 4, 13.6%) was not significantly different from condition 1. Completion of testing and receiving results were also not significantly different. Of those offered a choice of counselling (condition 4), 81% chose written materials rather than face-to-face counselling. Across all the sites (including the needle exchange as well as the bathhouses), black people were less likely to accept testing than white people (OR=0.47, p<0.01).

Of a total of 437 participants completing testing at the bathhouses, 15 were HIV-positive. Two of these were in the rapid testing arm (condition 2), both of whom received their results (a further one person tested positive in the rapid test, but the confirmatory test was negative). Of the 13 who tested positive in the other arms, only four received their results.

This study was robustly designed and well-reported. However, as for Galvan et al. (2006 [+]), a high proportion (82%) of those approached declined to participate. Age and ethnicity for non-respondents were estimated, but there is limited information on how they may have differed (other than the comparison between black and white ethnicity). The context of recruitment (gay bathhouses) may mean that findings are not generalisable to the broader population of MSM. The study aimed only to measure uptake of testing, and the potential impact on longer-term behaviours is unclear.

Spielberg et al. (2000 [++]) compared two protocols for regular bimonthly testing using home specimen collection kits. Participants were recruited from a larger cohort study of HIV risk (the HIVNET Vaccine Preparedness Study) which includes injecting drug users and women at heterosexual risk, as well as MSM. MSM made up 58% of the total sample, and outcomes (although not baseline demographics) are reported separately for the distinct groups; only outcomes for MSM are reported here. Inclusion criteria were: not known to be HIV-positive at baseline; English-speaking; and able to provide informed consent. Participants were offered modest cash incentives for completing specimen collections and data collection.

The study used a randomised controllexd trial design. The two testing protocols were home oral fluid collection (OraSure) and home dried blood spot testing (ChemTrak). Participants could pick up the kits at the study centre or receive them by post. They received training from study staff in how to collect specimens for testing. The main outcome was adherence to the testing protocol over a period of six months from baseline (three bimonthly cycles of testing). Data on acceptability were also collected.

This study found that adherence to the testing protocol among MSM was 99% for the oral fluid test and 92% for the dried blood spot test. This difference was not tested for significance within the MSM subgroup alone, although across the study sample as a whole, adherence was significantly higher for the oral fluid test than for the dried blood spot test (p=0.02). The acceptability of both protocols was high and did not significantly differ between the two arms.

This study was robustly designed, but limited information can be gained regarding MSM in particular, due to incomplete reporting of results by subgroup. Compared to the two studies examined above, a relatively lower proportion of eligible people declined to participate (21%). However, since participants were already enrolled in another study (and were offered incentives), it is not clear if the relatively high rates of uptake and adherence observed in this study are generalisable to the wider MSM population.

Evidence statement 1: Effectiveness – type of test and testing protocol

There is evidence from one pseudo-randomised controlled trial with Latino men in the USA (Galvan et al. 2006 [+]) that bundling HIV tests with other tests for alcohol and drug dependence, depression and other STIs, and offering these tests in an outreach setting (bars), does not increase uptake relative to offering HIV tests alone (10.2% uptake versus 8.9%; p=0.173).

There is evidence from one RCT in the USA (Spielberg et al. 2005 [++]) that in outreach settings (bathhouses), offering either oral fluid testing or rapid serum testing and counselling increases uptake of HIV tests relative to traditional serum testing and counselling (respectively 22.8% and 21.2% uptake versus 15.8%; respectively p<0.001 and p<0.01).

There is evidence from one RCT in the USA (Spielberg et al. 2000 [++]) that high levels of adherence to home testing protocols for oral fluid and dried blood spot testing can be achieved. However, it is unclear whether one protocol is preferable to the other in terms of adherence.

None of these studies assessed longer-term outcomes.

Applicability

All of these studies were conducted in the USA. It is possible that differences in the context of community settings between the USA and the UK may limit applicability; however, there is no particular reason to think that the findings are not applicable.

5.1.2 Peer education and recruitment

Three effectiveness studies evaluated programmes using peer educators and recruiters to promote HIV testing. Two of these were based in outreach settings, both conducted in the UK, one in England and the other in Scotland (Elford et al. 2000 [–]; Flowers et al. 2002 [+]). The third was a more intensive residential programme conducted in the USA (Wilton et al. 2009 [++]).

Flowers et al. (2002 [+]) evaluated a peer outreach programme conducted as part of a broader strategy, which also involved the provision of MSM-specific sexual health services in GUM clinics and a telephone information hotline. The intervention was conducted in Glasgow in 1997-1998. The participants were mostly in their twenties and thirties (mean age 31.7 years), of higher socioeconomic status (87% social class I-III), and of a fairly high educational level (40% university degree).

The intervention involved recruiting 42 peer educators from commercial gay venues and voluntary HIV organisations. Peer educators received two days of training on communication and message delivery, including role play, and continuous support throughout the intervention period. They then distributed sexual health promotion materials (not further specified) in gay bars and engaged in focused interaction with men about sexual health issues, including hepatitis B testing and HIV risk reduction as well as HIV testing.

The study used a comparative before-and-after design with non-identical population samples at pre-test and post-test. Outcome data was drawn from a survey of clients of gay bars, with those in Glasgow providing outcome data for the intervention and those in Edinburgh serving as the comparison group. The survey was carried out in 1996, before the intervention, and early 1999, approximately seven months after the intervention finished. All men entering the bars in the specified time-frame were approached to take the survey. Outcomes included hepatitis B vaccination, HIV testing (ever), unprotected anal intercourse (UAI) in the past 12 months, and knowledge of own and partner's HIV status. Only data on HIV testing is reported here. Outcomes were analysed for the sample as a whole, and for the subgroup of the Glasgow sample who reported having had contact with a peer educator at follow-up.

This study found that HIV testing rates in Glasgow increased from 47.0% to 47.9% between 1996 and 1999, and decreased in Edinburgh from 55.1% to 52.8%. Logistic regression using location-time interaction showed no significant difference (OR 1.14 [0.90, 1.44], p=0.27). The change in the Glasgow group from 1996 to 1999 was also not significant. However, in 1999, 52.7% of the MSM in Glasgow who reported contact with a peer educator (424 of the total of 1442) reported that they had been tested for HIV. Location-time interaction for this subgroup alone, compared to the Edinburgh sample, was significant (OR 1.38 [1.04, 1.84], p=0.02). However, this result should be interpreted with caution, since it involves comparing a specific subgroup in Glasgow in 1999 with the whole population in 1996, and hence is likely to be confounded by other factors.

The design of this study does not permit strong conclusions to be drawn about intervention effectiveness. Allocation of the groups was not random and outcomes are likely to be confounded (although the groups appear to be broadly similar in terms of demographics). Different individuals were sampled at the two time points, so population changes between pre-test and post-test may also have confounded the results. Only 31% of the sample in the intervention site reported any contact with the intervention; as already noted, analyses based on this sample alone are likely to be unreliable. Finally, the outcome measured was lifetime HIV testing (rather than recent testing): it is unclear how many of those who reported having had an HIV test in 1999 had had one since the start of the intervention period.

Elford et al. (2000 [–]) evaluated a similar peer education intervention which was implemented in gyms frequented by MSM in London. Participants in this study had a median age of 33 years and were mostly of white ethnicity (89%) and high educational level (73% university-educated); 27% had never been tested for HIV.

The intervention involved recruiting peer educators among people identified by gym staff as popular opinion leaders among MSM. Peer educators were trained and were asked to talk to at least 20 MSM in their gym about HIV risk reduction over a five-month period. Peer educators wore T-shirts or stickers identifying them as part of the intervention. Initially, 144 men were identified as potential peer educators, of whom 46 underwent training and 27 stayed with the intervention to the end of the intervention period.

This study used a non-randomised controlled trial design across five sites; one served as a no-intervention control, while the others received the intervention in successive phases (this means that the numbers in the intervention and control groups changed over the course of the study). Outcomes were measured using self-report questionnaires distributed to clients of the gyms in the study. Outcomes included HIV testing (ever), status-unknown UAI (past 3 months), and needle sharing among those who reported injecting steroids (past 6 months); only HIV testing outcomes are reported here. Data were also collected on whether participants had spoken to a peer educator. Analyses were initially conducted on the whole sample at baseline, 6, 12 and 18 months; where significance was found, analyses were repeated excluding those individuals who had completed questionnaires at previous time points.

This study found that HIV testing did not differ significantly between intervention and control groups at 6-, 12- or 18-month follow-up (p>0.1 at all time points). Both intervention and control groups saw an increase in HIV testing from baseline to follow-up (73.0% to 79.6% across the sample as a whole). Only 3% of MSM in the intervention group reported having talked to a peer educator. Process data indicate that relatively few conversations occurred (approximately 10 per peer educator), and the peer educators did not feel comfortable with their role.

The design of this study, apart from the absence of randomisation, was in principle robust. However, the available study reports are unclear concerning the design of the study, the intervention and the sample. Some aspects of the analysis are not clearly reported in the published report. The samples at different time points did not contain the same individuals, and the population may have changed over the intervention period. The use of lifetime testing for HIV as the outcome variable, rather than recent testing, makes it unclear to what extent any changes may be attributable to the post-intervention time period. Finally, it is clear that since the intervention had very limited reach, the chances of detecting an intervention effect at a population level were low, even if the intervention were successful at an individual level.

The third study (Wilton et al. 2009 [++]) evaluated a rather different type of intervention, namely an intensive residential course targeted at black MSM in New York City. Inclusion criteria for the study were self-identified black MSM aged 18 years or older who were not HIV-positive at baseline, and who were willing and able to participate in a residential course. Participants had a mean age of 29.6 years, and relatively low income (46% less than US$20,000 p.a.) and educational level (30% college degree); 78% identified as gay and 18% as bisexual. Participants were recruited through a range of methods including street outreach, referrals from community gatekeepers and voluntary organisations, and advertisements.

The intervention ("Many Men, Many Voices") consisted of a two-and-a-half-day weekend retreat in upstate New York, including six sessions of two to three hours each. The intervention was delivered by two trained black MSM peers, and fidelity of implementation was assured by independent assessors who monitored intervention delivery. The intervention was conducted in a small group and focused on relationships, including power dynamics and negotiating skills, HIV risk, options for behaviour change, and racism and homophobia. Free transport, accommodation and meals were provided to participants during the course of the intervention; they also received cash incentives for completing follow-up data collection.

This study used a randomised controlled trial design with a wait-list control group. Outcomes were measured at 3 months and 6 months after the intervention. Outcomes included HIV testing and other STI testing in the last 3 months, and several sexual risk behaviour variables (UAI with main partner and casual partners, number of male partners, and condom use). Data were analysed using intention-to-treat analysis.

This study found that 52.0% of intervention participants and 46.3% of control participants reported HIV testing in the past 3 months at 3-month follow-up, and 54.8% and 43.3% respectively at 6-month follow-up. The difference at 3 months was not significant (OR 1.41 [0.83, 2.39]), but that at 6 months was significant (OR 1.81 [1.08, 3.01], p=0.023). Linear regression across the study period as a whole found significantly greater odds of testing for HIV among intervention participants (OR 1.33 [1.05, 1.68], p=0.016).

This study was highly robust in its design and analysis, and all relevant information was clearly reported. The only potential limitation is that the intervention was highly intensive and demanding, and it is likely that participants were more motivated to change their behaviour than the general MSM population. Participants were screened for their willingness to undertake the intervention before treatment allocation, but nonetheless, 29% of those allocated to the intervention group did not complete the intervention. Since intention-to-treat analysis was carried out, this does not affect the internal validity of the study findings, but may impact on their generalisability. This study is also unusual in accessing a population of MSM from minority ethnic groups, mostly of lower socioeconomic status, who are not well represented in many of the studies included in this review.

Evidence statement 2: Effectiveness – peer education and recruitment

There is evidence from two non-randomised controlled trials in the UK (Elford et al. 2000 [–]; Flowers et al. 2002 [+]) that peer outreach and recruitment programmes, which involve training MSM peers to encourage HIV testing in community and outreach settings (bars or gyms), is not effective in increasing HIV testing rates among the MSM population (for Flowers et al. 2002 [+], p=0.27; for Elford et al. 2000 [–], p>0.1 at all time points). However, both of these studies have limitations in their design or reporting. The reach of these interventions (the number of MSM in the targeted population reporting some contact with or knowledge of the intervention) appears to be low.

There is evidence from one RCT in the USA (Wilton et al. 2009 [++]) that a peer-led intensive residential programme can increase HIV testing among black MSM (54.8% of intervention participants versus 43.3% of controls at 6-month follow-up; p=0.023).

Applicability

Two of these studies were conducted in the UK, and one in the USA. It is possible that there are cultural differences that limit the applicability of the findings of non-UK studies of intensive peer-led programmes.

5.1.3 Media and web-based campaigns

Three studies evaluated predominantly media-based campaigns. Of these, two evaluated multi-method campaigns including a range of advertising materials in MSM-oriented media and outreach sites (Guy et al. 2009 [–]; McOwan et al. 2002 [–]), and one a video intervention delivered on a website (Chiasson et al. 2009 [+]). One study described above also used distribution of promotional materials as part of the intervention, but the focus of this study was on peer interaction; this study is not further described here (Flowers et al. 2002 [+]).

Guy et al. (2009 [–]) investigated a social marketing campaign in Victoria, Australia, undertaken in 2004. The intervention was designed to reach a range of MSM populations including both gay-community-attached and non-gay-community-attached MSM, young MSM, and minority ethnic and non-English-speaking populations. The campaign included advertising in local media and radio programmes, including Chinese, Arabic, Greek and Italian media; a banner advert on an MSM-oriented website; display advertising on trams; informational posters and takeaway cards in a range of venues (MSM-oriented venues including clubs, cafes, hotels and gyms, and non-MSM-oriented educational settings); and a website. The overall campaign budget was A$130,000. The materials promoted regular sexual health check-ups and gave details of the website and a telephone counselling service.

The study used a non-comparative before-and-after design. Data were collected from several sources to provide information on HIV testing rates among the MSM population in Victoria before and after the intervention. These included: records of MSM undertaking HIV testing at primary care clinics participating in HIV sentinel surveillance; records of all men tested for HIV in laboratories; and data from an annual population survey of MSM, the Melbourne Gay Community Periodic Survey. The timescales of data collection varied between sources, with some data collected in early 2006, almost two years after the intervention had finished. Data on campaign reach or recollection were not collected.

This study found no significant change in HIV testing across the population between pre-test and post-test on any of the three datasets utilised. The survey data found that in 2004, prior to the campaign, 60.3% of MSM reported having had a blood test for HIV in the previous year, 61.5% in 2005 after the campaign, and 61.9% in 2006 ($p=0.34$). The clinic data found no significant change in the number of MSM taking HIV tests month-on-month from the start of the campaign to just over a year later.

The design of this study was not robust, since there was no comparison group and different individuals were sampled at different time points, and hence changes in testing rates cannot be attributed to the intervention. The absence of data on the extent to which the intervention reached the targeted MSM populations means that it is hard to interpret the findings regarding population-level testing rates.

McOwan et al. (2002 [–]) evaluated a similar marketing campaign targeting MSM in London, undertaken in 2000. A free paper, posters and leaflets were distributed to gay venues in London by community outreach teams. The materials contained an advert with a peer image and text promoting the services of a particular testing clinic. As well as the MSM population more generally, the intervention sought to target young MSM and those of black and southern European ethnicity. The campaign cost approximately £10,000.

The study used a non-comparative before-and-after design. Data from two other clinics in London are presented in the study, but the study authors do not test the differences between the group from the comparison clinics and that from the targeted clinic for significance. In addition, since the intervention was London-wide (although designed to promote the targeted clinic's services), these groups cannot be regarded as intervention and comparison groups in the conventional sense. Hence, this study was regarded as a one-group design for the purposes of this review. Data were collected using a review of clinical records, and all men who reported sex with men and tested for HIV in the targeted clinic were included. Data were collected over the course of the campaign (March-May 2000) and during the same period one year previously (March-May 1999). In addition, data on reason for attendance were also extracted from the clinic's records, to establish whether attendance was motivated by a media campaign (although not specifically the campaign under evaluation).

This study found that the number of MSM testing for HIV in the targeted clinic increased from 65 in 1999 to 292 in 2000, during the campaign. This difference was found to be significant ($p<0.001$). In addition, significant increases in the subgroups of MSM of black and southern European ethnicity, and young MSM (under 25 years old) were observed. (No similar increase was observed in the comparison sites, but as noted above, this cannot be regarded as a true control group, and the difference is not tested for significance in the study report.) Finally, in 1999, only 1.5% of MSM testing for HIV indicated that their attendance was in response to a media campaign or advertisement, while in 2000, this rose to 55.5% ($p<0.001$).

The design of this study was not robust, since there was no true comparison group. In addition, different individuals were sampled at different time points. It is unclear to what extent the intervention reached the targeted population; information on reasons for testing only partially provide this information (since it does not refer to the particular campaign under evaluation; it is also unclear how reliable this data, gathered from clinical records, is likely to be). No data are presented on the total numbers of MSM attending the clinic, or (equivalently) the proportion of MSM attending who took an HIV test, so it is unclear to what extent the change in total numbers of HIV tests among MSM represents a change in behaviour across the population.

The third study in this group (Chiasson et al. 2009 [+]) evaluated a rather different intervention, namely a video linked to a banner advert on a sexual meeting website for MSM. The brief (nine-minute) video educational drama was designed to promote critical thinking about HIV risk. The study included any MSM aged 18 or older resident in the USA. Participants in this study were predominantly older (78% 30 years or older), of white ethnicity (72%), and had high levels of education (51% college degree). Participants mostly identified as homosexual (91%).

The study used a non-comparative before-and-after design. Recruitment of individuals to the study, the delivery of the intervention, and all data collection took place entirely on the internet. Of 11451 people who clicked on the banner advert, 3052 initially consented to participate, of whom 1003 provided baseline data and an email address. Of these, 522 remained at 3-month follow-up. The analysis was limited to the 442 of these participants who reported any sex in the previous 3 months at both baseline and follow-up. Outcome measures included a range of variables relating to sexual behaviour and HIV status disclosure as well as HIV testing behaviour. It is unclear what time period is referred to by the HIV testing outcome: it appears that it covers the previous 3 months at both baseline and 3-month follow-up, but the reporting of the study is ambiguous on this point.

This study found that HIV testing increased significantly from 26% at baseline to 44% at follow-up (OR 1.45 [1.02, 2.07], p=0.03; McNemar test). Of 120 men who were HIV-negative at baseline and were tested between baseline and follow-up, 17 (14%) tested HIV-positive.

The design of this study was not robust, since there was no comparison group. In addition, as noted, there are some unclear areas in the reporting of HIV testing outcomes, which makes it difficult to interpret the findings. Participants were self-selected and rates of attrition were high, although there were few differences between those who dropped out between baseline and follow-up and those who remained. Study participants were recruited from a sexual meeting site, and hence may not be very representative of the broader MSM population. Baseline data indicate that participants had high numbers of lifetime sexual partners (49% had had more than 100 male lifetime partners) and fairly high rates of HIV testing (only 6% had never been tested).

Evidence statement 3: Effectiveness – media and web-based campaigns

There is mixed evidence regarding the effectiveness of targeted media campaigns using MSM-oriented media to promote HIV testing. Studies of these interventions were of low quality overall. One before-and-after study of an extensive, targeted media campaign in Australia, incorporating print media, radio and display advertising in a range of settings, found that it was not effective in increasing HIV testing among the MSM population (Guy et al. 2009 [–]: p=0.34 based on survey data). One other before-and-after study from the UK found an increase in HIV testing among MSM at one clinic after the implementation of a media campaign encouraging MSM to test at this clinic (from 65 to 292 tests conducted; p<0.001) (McOwan et al. 2002 [–]). However, it is unclear to what extent this finding reflects higher rates of testing in the population.

One before-and-after study from the USA found that a brief video intervention delivered via an advert on a commercial website was effective in increasing HIV testing among MSM (from 26% to 44%; p=0.03) (Chiasson et al. 2009 [+]).

Applicability

One of three studies in this group was conducted in the UK. There is no particular reason to think that there may be barriers to applicability of the non-UK findings.

5.1.4 Changes to service delivery

Three studies evaluated changes to service delivery. All three used non-comparative before-and-after designs and hence are of limited reliability. Two studies evaluated the implementation of "opt-out" policies in STI clinics in the Netherlands, whereby anyone attending the clinic received an HIV test unless they specifically declined (Dukers-Muijrers et al. 2009 [–]; Heijman et al. 2009 [+]). One study evaluated the introduction of guidelines recommending regular screening of MSM in an STI clinic in Australia (Ryder et al. 2005 [–]).

The first study of opt-out services was conducted in Amsterdam, the Netherlands, where the opt-out strategy replaced a provider-initiated testing strategy in January 2007; the study report presents data from January 2006 to December 2007 (Heijman et al. 2009 [+]). The strategy applied to everyone attending the clinic, although high-risk groups (including all MSM) received a more intensive testing protocol, including rapid HIV testing with results received within 30 to 45 minutes.

The study used a non-comparative before-and-after design, using data from clinical records. Data are presented separately for MSM clients of the clinic. Outcomes included reasons for refusal among those declining the HIV test, as well as overall testing rates.

This study found that over 2006, prior to the introduction of the opt-out strategy, 62% of MSM attending the clinic received an HIV test. Immediately after the introduction of opt-out testing in January 2007, this figure was 82%, and by the end of 2007, 93% (the percentage over 2007 as a whole was 88%). This increase was not tested for significance. The percentage of tests that showed a positive result remained unchanged over the study period (p=0.47). Multivariate analysis showed that older MSM (OR 2.52 [1.86, 3.42] for 30-39-year-olds compared to under-30s, OR 4.10 [3.02, 5.55] for 40-49-year-olds, OR 2.60 [1.80, 3.77] for 50-year-olds and older) and those never tested for HIV (OR 3.27 [2.65, 4.05]) were more likely to opt out; MSM reporting STI-related symptoms were also more likely to opt out (OR 2.19 [1.80, 2.66]).

This study is of limited reliability due to the absence of a comparison group, and due to the fact that significance tests were not carried out on the change in tests over time.

One other study evaluated an opt-out programme in South Limburg, the Netherlands (Dukers-Muijrers et al. 2009 [–]), implemented in 2004. The intervention and study design were similar to those in Heijman et al. (2009 [+]). All clients attending the clinic received an HIV test unless they actively declined. A non-comparative before-and-after design using clinical record data was adopted; data for MSM within the sample are reported separately (albeit incompletely). Due to the absence of a comparison group, the study is of limited reliability.

This study found that 16% of MSM declined testing at baseline, 10% in 2004, and 4% in 2007, reaching 2.1% over the second half of 2007 (July-December). The difference between baseline and post-test was significant (OR 0.77 [0.62, 0.96]). This study found that MSM were more likely to opt out than heterosexual clients (p=0.076).[5] Consistent with Heijman et al. (2009), this study also found that older MSM (for over-30-year-olds, OR 2.34 [1.29, 4.22]) and those with STI-related symptoms (OR 4.03 [2.35, 6.92]) were more likely to opt out. There were no significant changes in the number of positive test results for the sample as a whole; it is unclear if this was also the case for MSM.

The third study (Ryder et al. 2005 [–]) evaluated the effect of implementing guidelines relating to STI testing in a clinic in Sydney, Australia. The guidelines were developed by a multi-disciplinary advisory group, and recommended at least annual screening of all MSM for HIV and several other STIs. The guidelines were implemented during 2002, although it is unclear precisely what this implied in terms of changes to services or the behaviour of service providers.

The study used a non-comparative before-and-after design. Data were collected using a review of the records of a random sample of men who attended the clinic. Records of all first visits to the clinic reporting sex with at least one male partner in the previous year were included in the study. Data were collected on the tests taken, the presence of symptoms indicative of potential HIV infection, and reasons for declining testing among those who declined. Data were collected in 2000 prior to the intervention, and in 2002 when the implementation of guidelines was underway.

This study found that 73% of MSM attending the clinic were tested for HIV in 2000, and 88% in 2002; this difference was not tested for significance. The proportion of positive tests rose significantly, from 5% in 2000 to 12% in 2002 (p<0.05). At both baseline and post-test, asymptomatic clients were more likely to test for HIV than those with symptoms indicative of potential HIV infection (p<0.05).

The design of this study was not robust, due to the absence of a comparison group. As already noted, it is unclear what the intervention actually involved at the level of service delivery. Limited descriptive information was available on the characteristics of the sample.

Evidence statement 4: effectiveness – changes to service delivery

Findings regarding the effectiveness of changes to HIV testing services are promising but not conclusive. Two before-and-after studies, both from the Netherlands, evaluated opt-out strategies implemented in STI clinics (Dukers-Muijrers et al. 2009 [–]; Heijman et al. 2009 [+]). Both studies found an increase in the proportion of MSM taking an HIV test after the introduction of opt-out policies. One study found this increase to be significant (Dukers-Muijrers et al. 2009 [–]), while in one it was not tested for significance (Heijman et al. 2009 [+]).

One before-and-after study, conducted in Australia, evaluated the implementation of guidelines recommending annual STI screening for MSM (Ryder et al. 2005 [–]). However, although an increase in HIV testing was observed, the difference was not tested for significance.

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[5] The authors of this study regard p<0.10 as significant for interaction tests.

Applicability

None of the studies in this group was conducted in the UK. It is possible that there may be barriers to applicability due to differences in the delivery and organisation of services.

5.2 Findings: cost-effectiveness

Only one economic evaluation was included in the review (Golden et al. 2006 [–]). This study evaluated a peer recruitment campaign similar to those discussed in section 5.1.2 above, conducted in Washington State, USA, between 2002 and 2004. Demographics are provided both for the peer recruiters who were initially targeted by the intervention, and for the men they recruited to attend HIV testing. Both peer recruiters and recruitees were predominantly low-income, with low educational levels, and had a high proportion of minority ethnic participants. A high proportion of both groups had a history of injecting drug use.[6]

The intervention involved recruiting and training peer recruiters from the MSM population. Peer recruiters received 40 minutes of training on how to approach and recruit peers for HIV testing. They were encouraged to recruit MSM among their social contacts who were at risk for HIV. Recruitees were offered counselling and testing for syphilis and hepatitis A, B and C, as well as for HIV. From 2004 onwards, rapid serum tests for HIV were used. Both peer recruiters and recruitees were offered modest cash incentives for recruiting and testing.

The study was constructed as a costing analysis, with the main outcomes being cost per new case of HIV identified and cost per person receiving a positive test result. The underlying effectiveness data for this analysis comes from a non-comparative study, where the main outcome is number of peers recruited through the programme who tested HIV-positive. Data are presented both for the period of the study (18 months to February 2004) and for a further 11-month period after the study was completed and the peer recruitment intervention was implemented as a public health programme.

The intervention recruited 283 peer recruiters in total, although only 142 (50%) of these recruited at least one peer. The authors note that recruiters tended to recruit men who were demographically similar to themselves.

Over the whole length of time covered by the study report, 438 peers were recruited and completed HIV testing, of whom 22 (5%) were HIV-positive; of these, 18 received their test results. The total cost of the programme during the initial study period alone (to February 2004) was US$103752. However, excluding costs associated with testing and treatment of other STIs, the HIV-associated costs alone were US$59142. The total cost per new case of HIV infection identified was US$4929, and per person receiving a positive test result, US$5377. Sensitivity analysis on the prevalence of HIV showed that the cost per person receiving a positive result varies from US$3076 to US$21479 as the prevalence varies from 7.8% to 1.1% (75% above and below the observed prevalence in the study). The authors observe that these costs

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[6] Percentage figures for demographics are not given here as the figures in the available study report are inconsistent.

compare favourably with those observed for bathhouse testing programmes, and for programmes working with community-based organisations to promote testing, in the USA.

Evidence statement 5: cost-effectiveness – peer education and recruitment

One economic study was located. This study evaluated a peer recruitment intervention implemented in the USA, in which MSM peers were trained to encourage peers from their social networks to seek HIV testing (Golden et al. 2006 [–]). Effectiveness data for this analysis comes from an observational design with no comparison group. The total cost per new HIV case identified was calculated to be US$4929, and the cost per person receiving a positive result US$5377. As in the effectiveness studies on peer-based interventions, the reach of the intervention was limited.

Applicability

No economic studies were identified from the UK. There may be limitations to the applicability of data regarding costs. In addition, the potential barriers to applicability of effectiveness results for this type of intervention which are mentioned above (ES 2) also apply to the findings of economic evaluations.

5.3 Findings: practitioner and service user views and perspectives

In the following sections, findings relating to the views of actual or potential users of HIV testing services are synthesised. The themes have been organised under four headings, in line with the framework adopted for synthesis, including factors relating to:

- Individual factors (such as knowledge, beliefs and emotions);
- Relationship factors (factors relating to sexual partners and social and sexual relationships);
- Testing service factors (the specific contexts of testing); and
- Social factors (such as stigma and prejudice).

In a further section we explore differences between different groups of MSM.

Within these broad categories, a number of sub-themes have been identified. Where appropriate, themes have been identified as barriers or facilitators of the uptake of testing services. In some cases, however, the themes are complex and may act either to encourage or inhibit testing, depending on context.

5.3.1 Individual factors

Cues to action: symptoms

Five studies find that the presence of potentially HIV-related symptoms may act as a motivation for testing (Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Paparini et al. 2008 [–]; Remien et al.

2009 [++]; Stoelb 2006 [–]). Some participants showed a high degree of knowledge of the warning signs of acute HIV infection (AHI) (Remien et al. 2009 [++]).

> *When I arrived at [the doctor's office] and told her of course that I had a fever, and she said, ''You have a rash on your face.'' And I didn't know that at the time. And I said to her, ''Oh, that's a very bad sign.'' I said that—because I had a feeling, okay, this might be connected with HIV. I was familiar with the acute symptoms.* (participant, Remien et al. 2009 [++])

However, other participants in this study had limited knowledge of symptoms, and were surprised to receive a diagnosis of HIV (Remien et al. 2009 [++]). Three further studies found that experiencing symptoms or unexplained persistent illness was also a common reason to seek an HIV test (Mimiaga et al. 2007 [++]; Paparini et al. 2008 [–]; Stoelb 2006 [–]). Participants in Stoelb (2006 [–]) mentioned a variety of symptoms, such as shingles, weight loss, dehydration, diarrhoea, candida thrush, or chills and night sweats. Conversely, the absence of symptoms was cited by participants in one study as a reason not to seek an HIV test (Mimiaga et al. 2007 [++]).

The fifth study (Lekas et al. 2005 [–]) also found that symptoms were a common motivator for testing. However, they also note that experiencing symptoms, and being theoretically well-informed about them, did not always lead to testing, but that some participants persisted in attributing symptoms to other causes (such as stress) and in delaying testing.

Evidence statement 6: views – cues to action – symptoms

Five studies find that experiencing symptoms or persistent illness may be a reason to seek an HIV test (Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Paparini et al. 2008 [–]; Remien et al. 2009 [++]; Stoelb 2006 [–]). However, one of these studies finds that not all MSM are well-informed about the symptoms of acute HIV infection (Remien et al. 2009 [++]). A further one study finds that MSM may delay being tested even where symptoms are present (Lekas et al. 2005 [–]).

Applicability

Most of the studies in this group were not conducted in the UK. However, there is no particular reason to think that the findings are not applicable.

Cues to action: routine

A finding of several studies is that MSM often test for HIV simply as a matter of routine. Four studies found that this was a common reason for accessing HIV testing services (Lee and Sheon 2008 [++]; Mimiaga et al. 2007 [++]; Paparini et al. 2008 [–]; Stoelb 2006 [–]).

Only one of these studies provides further insight on participants' views of HIV testing as a matter of *"routine"* or *"habit"* (Lee and Sheon 2008 [++]). This study found that a majority (more than 70%) of participants presented routine testing as their reason to get an HIV test, with participants using phrases such as *"regular upkeep"*. The study authors link this to a "health maintenance" approach to HIV, where routine testing is motivated by a general desire to be responsible for one's health, rather than by specific risk incidents (Lee and Sheon 2008 [++]). They find that in response to counsellors' questions about reasons for testing and perceived risk, people seeking testing often respond that they get tested on a regular basis (once or twice a year) regardless of risk. However, they also find that specific risks are often raised within the context of routine testing, such that the latter provides the context within which particular risk behaviours are understood. This contrasts with the approach found in some of the qualitative research, where particular reasons and risks are emphasised over routine as a driver of testing.

Evidence statement 7: views – cues to action – routine

Four studies find that routine testing is a common reason for accessing HIV testing services (Lee and Sheon 2008 [++]; Mimiaga et al. 2007 [++]; Paparini et al. 2008 [–]; Stoelb 2006 [–]). One of these studies finds that routine is by far the commonest reason cited by MSM seeking HIV testing (Lee and Sheon 2008 [++]).

Applicability

Most of the studies in this group were not conducted in the UK. It is possible that regular routine testing is more common among MSM in other countries.

Cues to action: other

One study mentioned a number of further factors that may act as cues to get tested, including media campaigns and advice from health service providers (Mimiaga et al. 2007 [++]).

In addition, a number of further factors are dealt with in other sections below. The roles of specific risky sexual events, and of new relationships, as motivators for HIV testing are discussed under "Patterns of testing within relationships" in section 5.3.2 below. One slightly different cue for testing related to partners is doubts about a partner's behaviour, which was mentioned in one study (Paparini et al. 2008 [–]).

Empowerment and responsibility

A facilitator to testing mentioned in two studies was the desire to act responsibly and take control of one's own health, which implies being informed about one's HIV status (Lekas et al. 2005 [–]; Spielberg et al. 2001 [++]). Participants in these two studies mentioned that, given that they knew they were at risk, being tested was a key part of taking responsibility for their health (Lekas et al. 2005 [–]; Spielberg et al. 2001 [++]).

> *The more I knew about my health status, the better I could manage. This was sort of the guiding philosophy. I knew or supposed that I would be positive. ... I thought that I*

> *wanted to know as much as I could about having [HIV] - in order to better take care of myself.* (participant, Lekas et al. 2005 [–])
>
> *It's the responsible thing to do ... I mean if you do become infected you need to know so you can take care of yourself*. (participant, Spielberg et al. 2001 [++])

In one of these studies, participants also reported that testing could act as a *"monitoring device"* to remind them to reduce risk and practice safer sex (Spielberg et al. 2001 [++]). In addition, Lee and Sheon's (2008 [++]) findings about routine testing are also relevant here, although the language of responsibility is not explicitly used in that study.

However, some countervailing findings should be noted. Participants in one study noted that receiving a negative test result may act as confirmation that one can continue to practice unsafe sex, although this appeared to be more of a theoretical possibility than an observed pattern of behaviour (Prost et al. 2007 [++]). In addition, one study notes that the fear of taking on responsibility as a result of a positive test may act as a barrier to testing (Flowers et al. 2000 [++]). This point is dealt with further under "Consequences of a positive test" below.

Evidence statement 8: views – empowerment and responsibility

Two studies find that the desire to act responsibly and be informed about one's health is an important facilitator of testing (Lekas et al. 2005 [–]; Spielberg et al. 2001 [++]).

Applicability

Neither of the studies in this section was conducted in the UK. It is unclear whether there are any barriers to the applicability of the findings.

Uncertainty and denial

A key theme in the views and perspectives studies is the uncertainty of not knowing one's HIV status. Linked to this is the theme of denial, that is, the tendency to put off testing because the possibility of being positive is too worrying to deal with. Denial is also related to the fear of the consequences of a positive test, which is examined below. A total of six studies examined uncertainty (Flowers et al. 2000 [++]; Flowers et al. 2003 [++]; Godin et al. 2000 [–]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Stoelb 2006 [–]). This theme is complex: for some men, the desire to eliminate uncertainty, and the worry that comes with it, may be an important facilitator of testing. Conversely, participants in some studies expressed the view that maintaining uncertainty about one's status is actually easier than dealing with the results of a test.

In four studies, participants viewed eliminating uncertainty, and ensuring peace of mind, as a reason to seek testing (Flowers et al. 2003 [++]; Godin et al. 2000 [–]; Mimiaga et al. 2007 [++]; Stoelb 2006 [–]).

> *Em, I think the advantages of having one [an HIV test] is peace of mind. Em, certainly if you're negative there's that peace of mind. Em, you know, you would eh, free to get on with your life, you know without that you were ill [with worry].* (HIV-untested participant, Flowers et al. 2003 [++])

In some cases, such as the citation above, it is clear that this perception is dependent on a strong expectation of a negative result. However, other participants noted that even a positive result may be beneficial compared to the psychological consequences of continued uncertainty. The issue with regard to uncertainty does not appear to reduce to a calculation of risks and benefits; knowing the truth may have an intrinsic value.

> *I keep coming back to peace of mind, of course, I mean, not knowing em, puts you in a limbo, em, [...] when you have that doubt, I suppose not knowing is [...] almost worse than knowing, if you're negative then everything's fine, if you're positive then you can move on to combination therapy if necessary and the associated peripheries of being HIV-positive.* (status-unknown participant, Flowers et al. 2003 [++])

> *I don't understand not wanting to consult. I would not be able to say to myself, 'I won't consult because I am afraid to learn that the result of the test is positive; I will be anxious in any case, so instead of living with this anxiety, I would rather face the truth.' If the result is negative, the balloon will deflate. If the result is positive, I will have to learn to live with this situation as any other problem in life.* (participant, Godin et al. 2000 [–])

> *I always felt that it was more important to know than not to know, and I decided to get tested.* (participant, Stoelb 2006 [–])

One reaction to uncertainty is to adopt a framing of one's own risk status and behaviours that minimises the risk, or to avoid thinking about the issue. Such tendencies were identified as reasons not to test in five studies (Flowers et al. 2000 [++]; Flowers et al. 2003 [++]; Godin et al. 2000 [–]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]). Such denial may reduce psychological stress and postpone changes in lifestyle or behaviour that are regarded with fear.

> *But do you really want to know? There's always the element, do you really want to know you've got this? You're fine just now, and you can maybe brush it under the carpet, but I suppose getting told would make it so definite.* (untested participant, Flowers et al. 2003 [++]).

> *... it's in the back of my mind but I don't really want to know so let's have a party anyway. Em, yeah, it's just total denial, fear, basic facing up to something that's hard to face, it's not easy.* (HIV-positive participant, Flowers et al. 2003 [++]).

In particular, one study finds that participants regard unknown status as, in some sense, equivalent to negative status (Flowers et al. 2000 [++]; on this point see further under "Consequences of receiving a positive test" below).

> *I think you're on an equal basis with everyone else if you're untested, but if you've tested positive it definitely changes.* (HIV-positive participant, Flowers et al. 2000 [++])

A participant in another study uses the phrase *"magical thinking"* to characterise this attitude (Godin et al. 2000 [–]).

An attitude of denial may not be tenable in the light of substantive reasons to suspect that one is infected with HIV (Flowers et al. 2003 [++]). However, it is unclear precisely what kinds of experiences or factors may provide such substantive reasons.

> *Interviewer: What's good about not knowing?*
> *Participant: Nothing's good about not knowing, em, if you don't know, then I think em, you can carry on, em, because you don't know, [...] if you don't know, you get on with it. If I'd got to the stage where I really believed that I was ill, then I would want to know, I personally would want to know.*
> *I: Why at that stage?*
> *P: Because I think at that point it's a case of you can't kid yourself on any longer, you know, you can't lie to yourself any longer ...* (untested participant, Flowers et al. 2003 [++])

Evidence statement 9: views – uncertainty and denial

Four studies find that the desire to eliminate uncertainty and seek peace of mind may be a reason to get an HIV test (Flowers et al. 2003 [++]; Godin et al. 2000 [–]; Mimiaga et al. 2007 [++]; Stoelb 2006 [–]). For some participants this is clearly linked to the expectation that the result will be negative, while for others, even a positive result may be preferable to ongoing uncertainty about one's status.

Five studies find that people may avoid or delay testing for HIV because they avoid thinking about the risks and benefits, or because they frame their own situation such as to minimise the need for testing (Flowers et al. 2000 [++]; Flowers et al. 2003 [++]; Godin et al. 2000 [–]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]). One study finds that having unknown status is preferable in certain respects to having known HIV-positive status (Flowers et al. 2000 [++]).

Applicability

Several of the studies in this section come from the UK, and the findings appear to be consistent across countries.

Consequences of receiving a positive test

The fear of the consequences of a positive test was mentioned in six studies as a potential barrier to testing (Flowers et al. 2000 [++]; Flowers et al. 2001 [++]; Flowers et al. 2003 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

This fear encompasses a number of factors: first, the perceived futility of testing before effective treatments were available (Lekas et al. 2005 [–]); second, the negative consequences of living with HIV and undergoing treatment (Flowers et al. 2001 [++]); and third, changes to lifestyle and sexual risk behaviours (Flowers et al. 2000 [++]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]). Finally, participants in two further studies (Flowers et al. 2003 [++]; Godin et al. 2000 [–]) mentioned the fear of receiving a positive test result in general terms, without relating this to any specific consequences.

Older MSM participants in one study recalled that in the 1980s, prior to the development of effective treatments, they delayed testing because they felt that an HIV diagnosis was a *“death sentence”* and hence there was little point being tested (Lekas et al. 2005 [–]). However, they were clear that the situation changed in the 1990s when more effective treatments became available: *“it’s not like now, you know”*.

> *One, there was nothing you could do about it anyway. [...] Two, there were no confirmatory tests. You know, you couldn’t be sure of what the results meant.* (participant, Lekas et al. 2005 [–])

The second potential consequence of a positive test is the long-term consequences of living with HIV. One study focused specifically on this issue, particularly on the impact of the availability of treatments on HIV testing decisions (Flowers et al. 2001 [++]). Participants in this study recognised that the consequences of an HIV diagnosis had changed between the 1980s and the late 1990s, when the study was conducted. It should be noted that due to advances in treatment, some of the attitudes expressed in this study may not be as current among MSM today.

> *You know it’s not like, sort of, a death sentence, now it’s a life sentence.* (participant, Flowers et al. 2001 [++])

However, perceptions of the impact of these changes on living with HIV and on decisions regarding HIV testing were complex, and the study authors report disagreement between participants in their focus groups. The realities of living with HIV were mentioned by several participants as a negative consequence of an HIV diagnosis. Some participants felt that the gain in prolongation of life through treatment was outweighed by the loss of quality of life.

> *I know they can make you live longer nowadays but I know you live your life to some kind of timetable and it’s difficult to go out socially without having to be reminded of the drugs whatever and—so I think that would be a bit of a nightmare.* (HIV-untested participant, Flowers et al. 2001 [++])

Participants in this study generally accepted that there is an argument for regular testing to increase the chance of early diagnosis and, hence, better long-term outcomes. However, many did not regard this argument as compelling because the negative aspects of living with HIV and undergoing treatment are so strongly perceived.

> *Well, from what I know it's still sort of a bloody hassle to live on this cocktail of drugs and timetable you've got to live to, I don't know if that would be, you know, that wouldn't be satisfying to me knowing that my life was gonna be like that. So I don't think it would be an incentive [to get tested.]* (HIV-untested participant, Flowers et al. 2001 [++])

The continuing uncertainty around the long-term effectiveness of treatment, and the quality of available care – at least when this study was conducted, when effective treatments (HAART) were relatively new – were also seen as counter-arguments to the pro-testing position. As well as the physical and practical aspects of undergoing treatment, participants also mentioned the difficult decisions and responsibilities that would need to be faced as a result of a positive test.

> *If you find out you have got it, you've got to make choices, you know, and if you don't know you've got it, you don't have to make those choices.* (HIV-positive participant, Flowers et al. 2001 [++])

At the same time, while HIV-positive participants expressed the perception that undergoing treatment involves making difficult choices, the ability to make informed decisions about treatment was mentioned as a positive aspect of knowing one's status by some participants. There was considerable ambivalence and complexity around this issue, with some HIV-positive participants expressing regret that they had taken the test at all.

> *What does it actually achieve? Because for me it's achieved very little, in fact. [...] I think the thing that's come out over this year has been 'Go and get a test because you might be able to go on treatments that'll stop you getting ill', but then I'm left thinking 'What's this all about?'* (HIV-positive participant, Flowers et al. 2001 [++])

The third anticipated consequence of receiving a positive test is the need to change lifestyle or sexual behaviour, which was mentioned by participants in three studies (Flowers et al. 2000 [++]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]). Participants in Mimiaga et al. (2007) mentioned that unwillingness to alter sexual activities could be a barrier to testing. A participant in Spielberg et al. (2001 [++]) cited the expectation of change as a barrier to testing.

> *The only reason why it's taken me a while to lead up to my first time, to get tested, ... it would require a big change in my life. I guess we're all kind of afraid of change.* (participant, Spielberg et al. 2001 [++])

More specifically, participants in Flowers et al. (2000 [++]) set out the expectations that led them to believe that an HIV test might necessitate changes in behaviour. They thought that HIV-positive men had a responsibility to disclose their status to potential partners, while those of unknown status had a responsibility only to use a condom, a difference in attitudes that the study authors identify as rooted in a *"general assumption [...] that everyone is negative".* The perception of increased responsibility as a result of a positive test was shared by HIV-positive as well as untested participants.

> *[I: How would knowing you are positive change your sexual behaviour?]*
> *P: It changes it in the respect that em, if you go with somebody then you couldn't be unsafe whereas before you probably thought you could have been. Em you've got to think of that person, what you're doing with them* (HIV-untested participant, Flowers et al. 2000 [++])
>
> *I: if you're positive, you think you've got more responsibility?*
> *P: Oh aye, aye, definitely.*
> *I: Why?*
> *P: Because you should make people aware and you should take responsibility [...]*
> *I: So it's their responsibility to say "I'm positive" [...] Not just use condoms and not mention it?*
> *P: No, I don't think that's right. [...]*
> *I: And for guys who don't know their status?*
> *P: Well I think you should use condoms whether you know your status or no[.]* (HIV-untested participant, Flowers et al. 2000 [++])

<u>Evidence statement 10: views – consequences of a positive test</u>

Older MSM in one study recalled that prior to the availability of effective treatments, the perception of HIV as a "death sentence" was a barrier to testing (Lekas et al. 2005 [–]).

Participants in one study felt that the negative aspects of living with HIV and undergoing treatment, and the associated worry and stress, were a barrier to testing (Flowers et al. 2001 [++]).

Participants in three studies expressed the view that the fear of major life changes, particularly changes in sexual behaviour, could be a barrier to testing (Flowers et al. 2000 [++]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

Applicability

Several of the studies in this section come from the UK, and the findings appear to be consistent across countries.

Non-voluntary testing

As well as exercising choices to test, in isolated cases, some MSM may be tested either against their will or without their knowledge. Only one study mentions such factors, but several different forms of non-voluntary testing were described (Stoelb 2006 [–]). However, little information was available from this study on the contexts of such non-voluntary tests, or on participants' attitudes to them.

> *Well, it wasn't my own decision, it was a requirement for immigration eleven years ago back in 1991.* (participant, Stoelb 2006 [–])

> *The immediate reason was because there was a life insurance policy I wanted to apply for and I know I needed to know before I applied for it.* (participant, Stoelb 2006 [–])
>
> *I didn't take the HIV test by choice. I was in a coma, it was given to me.* (participant, Stoelb 2006 [–])
>
> *I did not decide to be tested, I was tested against my will by my physician.* (participant, Stoelb 2006 [–])

5.3.2 Relationship factors

Partners, friends and family motivate MSM's willingness to get tested. Six studies (Dodge et al. 2008 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Prost et al. 2007 [++]; Spielberg et al. 2001 [++]; Stoelb 2006 [–]) present a range of attitudes and behaviours directly linked to relationships, such as serosorting, the willingness to protect oneself and/or one's partner, or specific life events related to social and sexual relationships that facilitate testing among MSM.

Serosorting and proof of status

Two studies (Dodge et al. 2008 [++]; Prost et al. 2007 [++]) describe how HIV testing is used as part of a serosorting strategy.[7] Participants in one study mentioned the possibility that people receiving a negative test might use their results as a serosorting strategy to engage in unprotected anal intercourse (Prost et al. 2007 [++]). However, using testing for serosorting purposes was also seen as a way to engage in safer sexual activities. In one study (Dodge et al. 2008 [++]), half of the respondents who took a test approached it as an additional safety measure before engaging in sexual behaviour with new partners for the first time.

> *I: So, you get tested before?*
> *P: Before...That's from the very beginning, you know. And if I continue to have sex with that individual, then, like, for us, every three months, you know.* (participant, Dodge et al. 2008 [++])

For the other half of the respondents who took a test, testing results were presented as insurance or proof of seronegativity to potential partners before engaging in sexual activity. Participants reported cases in which they had engaged in unprotected sex solely on the basis of their partners' written HIV test results. However, this serosorting strategy was not always successful, as this was not always applied in a systematic and reciprocal way. A young respondent describes how his potential partners would not always provide a "proof" themselves:

---

[7] 'Serosorting' refers to the practice of choosing HIV-negative partners (Mao et al. 2006). In some studies, 'serosorting' refers primarily to casual partners; the term is used here in reference to any form of sexual relationship.

> *P: But we still have to go through the whole, you know one thing I do is I usually try to carry around my HIV papers, and stuff like that, and so I'll be like, since we're at your house, you can show me too. And then we could like, you know…*
> *I: Do they all have the papers?*
> *P: Hell no!*
> *I: So are there some guys who don't have the papers but you'll still let them fuck you?*
> *P: Yeah, yeah, I'll do it. I will, and then I'll be so paranoid, I'll go get like the 24 hour testing thing and they'll be like you have to come back. So, so far, so good. Yeah. But I keep numbers and emails because if something ever happens to me, I'm going to blow you up.* (participant, Dodge et al. 2008 [++])

This quote also shows how the anxiety generated by having sexual intercourse with a partner who does not provide explicit evidence of his supposed negative status could motivate one to seek testing. This suggests that there may be additional incentives when risky events occur as a result of the failure of a serosorting strategy.

Evidence statement 11: views – serosorting and proof of status

Participants in two studies (Dodge et al. 2008 [++]; Prost et al. 2007 [++]) reported that the desire to use HIV test results as part of a serosorting strategy may be a motivation to test for HIV. One study (Dodge et al. 2008 [++]) finds that participants used HIV testing either as an additional measure of safety when beginning a new relationship, or to provide proof of negative status to potential partners.

Applicability

One of two studies in this group comes from the UK. It is unclear whether there are any barriers to applicability.

Patterns of testing within relationships

Six studies report findings relating to how testing may vary depending on individuals' sexual relationships and contacts (Dodge et al. 2008 [++]; Lee and Sheon 2008 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]; Stoelb 2006 [–]).

Six studies find that experiencing risky sexual events, such as unprotected intercourse with a status-unknown or HIV-positive partner, could be a motivation for taking an HIV test (Dodge et al. 2008 [++]; Lee and Sheon 2008 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]; Stoelb 2006 [–]).

> *I had engaged in some risky behaviour so I just needed to find out ... I was playing a Russian Roulette game, I knew that, I was with several different people, some was protected, some was unprotected*. (participant, Stoelb 2006 [–])

One study (Spielberg et al. 2001 [++]) reports that MSM who sought HIV testing often did so because of a history of risk exposure: in this study, nearly half of the respondents had a current or previous HIV-positive partner.

Three studies (Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Stoelb 2006 [–]) find that learning that a partner or ex-partner, or a friend, was infected could be a motivation to get a test. However, one other study finds that knowing that a recent sexual partner was HIV-positive often compounded anxiety, which could also act as a barrier to testing (Spielberg et al. 2001 [++]). One further study finds that the end of a relationship involving regular unprotected sex could be a motivation for testing, even where this relationship was not perceived as risky due to a high level of trust between the partners (Lee and Sheon 2008 [++]).

Three studies (Dodge et al. 2008 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]) also find that MSM could also be motivated to get tested when entering a new relationship. In some cases, new partners would decide to get tested together. Wanting to protect one's sexual partner from infection could also be a strong factor contributing to get tested for HIV. One HIV-positive participant reflected on how entering a new relationship led him to get tested after a long period of denial:

> *I: What were some of the circumstances that finally led you to pursue testing in '95?*
> *P: Well, the only reason I got tested was that I had gotten involved in a very qualitative* [sic] *relationship in which it started in May of 1995. . . . the reason I really got tested was because of him.* (participant, Lekas et al. 2005 [–])

In addition to being influenced by partners, two of these studies (Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]) also noted that being encouraged and sometimes accompanied by a friend or a family member could facilitate some men's decisions to get tested.

Evidence statement 12: views – patterns of testing within relationships

Six studies find that experiencing risky sexual events, such as unprotected intercourse with a status-unknown or HIV-positive partner, or learning that a partner or ex-partner had tested positive, could be a motivation for taking an HIV test (Dodge et al. 2008 [++]; Lee and Sheon 2008 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]; Stoelb 2006 [–]).

Three studies find that the beginning of a new relationship may be a motivation to seek an HIV test (Dodge et al. 2008 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]).

Applicability

None of the studies in this section comes from the UK. However, there is no particular reason to think that the findings are not applicable.

5.3.3 Testing services

Knowledge and awareness

Three studies present findings relating to MSM's knowledge and awareness of HIV testing and associated services (Mimiaga et al. 2007 [++]; Remien et al. 2009 [++]; Spielberg et al. 2001 [++]). This includes knowledge about where and how to access HIV testing (Mimiaga et al. 2007 [++]); the types of testing offered (Spielberg et al. 2001 [++]); and awareness of different testing technologies (Remien et al. 2009 [++]).

Lack of knowledge of "how to go about getting a test" (Mimiaga et al. 2007 [++]) can obviously be a barrier to accessing HIV testing. On the other hand, awareness of the existence of alternative modalities such as home specimen collection can act as a facilitator (Spielberg et al. 2001 [++]).

Several participants in Remien et al.'s study (2009 [++]) indicated the need for educational and awareness-raising campaigns about HIV testing technologies, acute HIV infection (AHI), and HIV prevention implications. There was widespread confusion among participants about the series of tests that had led to their diagnosis (e.g. ELISA vs Western Blot), indeterminate test results and the stages of HIV disease (e.g. viral load and CD4 count). Several participants expressed puzzlement relating to the different testing technologies and the need for better information.

> *Well, they're saying that the, you know, I guess, with the Western Blot, it's more sensitive. So, they can determine, I guess, in early stages that, that I am positive. …whereas ELISA isn't as, as strong as a Western Blot. So, since the viral, since it's, you know, I guess my T-cell count, or whatever it is, isn't, I guess, out there, or it hasn't really spread so much through my body…it can't really determine* (participant, Remien et al. 2009 [++])
>
> *Like me, a lot of people don't know the difference between an antibodies test and a viral load test. […] We need education about viral load versus the HIV test, that's the antibodies, because somebody could have a negative test and be positive, which is what happened to me most likely. […] I think education about the window period and the difference between a viral load and an antibodies test is very important* (participant, Remien et al. 2009 [++]).

Evidence statement 13: views – knowledge and awareness

Three studies find that some MSM lack knowledge about testing services, testing modalities or the meaning of different test results (Mimiaga et al. 2007 [++]; Remien et al. 2009 [++]; Spielberg et al. 2001 [++]). Two of these studies find that lack of knowledge may be a barrier to testing, or increased awareness a facilitator of testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

Applicability

None of the studies in this section comes from the UK. However, there is no particular reason to think that the findings are not applicable.

Testing venues

Service users' views on the importance of the context in which HIV testing is offered are reported in four studies (Mimiaga et al. 2007 [++]; Prost et al. 2007 [++]; Spielberg et al. 2001 [++]; Woods et al. 2008 [+]). Participants in Spielberg et al. (2001 [++]) discussed the importance of practical issues, such as location and opening hours, and expressed a strong preference for community-oriented services rather than clinical venues.

> *The easier the better. If I walk into a Gay City event, or the Cuff, and someone's there saying testing, and it's been three months or more, my arm's out, let's go.* (participant, Spielberg et al. 2001 [++])
>
> *I wish [testing were offered] a variety of times. Not everybody works nine to five. So it's difficult for them to access it. It'd be nice if two or three times a week there were night hours.* (participant, Spielberg et al. 2001 [++])
>
> *[Counselling should be offered] wherever your community is. People's community might be... from the bath houses to on Broadway to skateboarder kids to other parts of town. Done by the community in their community. Where they feel comfortable and connected and a part of, as opposed to the white-doctored coat* [sic] *coming in and the door slamming shut. You feel much better when it's somebody you actually see on the street.* (participant, Spielberg et al. 2001 [++])

Participants in Mimiaga et al. (2007 [++]) highlighted the undesirability of hospitals (which were seen as *"overly clinical"*) and dedicated STD/HIV clinics (deemed too conspicuous) as testing venues. When asked about the ideal testing scenario, *"participants desired a testing environment that was community-based, friendly, culturally competent, gaypositive, and that normalized sexuality and STD/HIV testing"* (authors, Mimiaga et al. 2007 [++]). Participants in this study also suggested that bundling HIV testing with routine examinations would encourage its normalisation (Mimiaga et al. 2007 [++]).

Three studies (Prost et al. 2007 [++]; Spielberg et al. 2001 [++]; Woods et al. 2008 [+]) specifically addressed the perceived appropriateness of testing in social venues, such as bathhouses and nightclubs. Support for testing in these venues was limited, both on the part of service users and owners or managers of venues. Participants in Spielberg et al. (2001 [++]) mentioned that on-site testing in bathhouses would threaten the mood of sexual freedom. Participants in Prost et al. (2007 [++]), referring to testing in saunas, bars and clubs, raised concerns at a number of levels. First, HIV testing was seen as too serious to be undertaken in such recreational venues.

> *You've psyched yourself up to go out or go to a venue where you're going to have potential sexual interaction with somebody, then it's sort of like… your mindset isn't in your HIV thing, is it?* (HIV-positive participant, Prost et al. 2007 [++])
>
> *A nightclub is probably not the most auspicious environment for that […] people don't go to the nightclub, you know, because they want to be reflective about their sex life*. (participant, Prost et al. 2007 [++])
>
> *At the end of the day, you don't want sort of Kylie blaring out like that and hearing loads of people laughing and cheering and then saying "oh, I'm terribly sorry, it's positive." […] It's just, I think it's a bit insensitive.* (venue owner, participant, Prost et al. 2007 [++])

Participants repeatedly asserted that these places were associated with fun and pleasure, and therefore incompatible with engaging with serious health issues. In addition, concerns about informed consent when under the influence of drugs and/or alcohol, and the ability to cope with a potential positive result, were raised.

> *When you've got someone in an altered state already, putting them and giving them a diagnosis such as that would, when they're already on whatever combination of drugs or alcohol, it may be… it's not the right way to receive an HIV diagnosis* (HIV-positive participant, Prost et al. 2007 [++])

Participants also expressed concerns regarding the feasibility of providing adequate post-test support in these contexts. There were fears that men could not be supported appropriately in the case of a positive result, and that service providers' ability to deal with strong post-test reactions would be undermined in non-clinical settings.

> *In a [GUM] clinic, all that [support] mechanism can be offered to the person on the day of the test, whereas in a commercial venue, it's not inconceivable that the person may just disappear off and never be seen or heard of again... until their body's found on Brighton beach.* (HIV-positive participant, Prost et al. 2007 [++])

Participants, especially venue owners, also doubted about whether good clinical standards, especially regarding hygiene, could be maintained in non-clinical venues. Finally, venue owners discussed the impact that offering HIV testing could have on their venues. Although they were generally supportive of rapid HIV testing, they were also wary that it could repel customers.

> *I think it [rapid HIV testing] would be a good thing if anything because it seems that I'm prepared to do something for the gay community other than fleece them off their money.* (venue owner, participant, Prost et al. 2007 [++])
>
> *In terms of the venue owners, I guess some of them might be a bit cautious about erm killing the atmosphere with people sobbing in a corner…* (venue owner, participant, Prost et al. 2007 [++])

> *There could obviously be the possibility that if somebody has a test and it comes up as positive, em… Then they're forever gonna remember that place, the place that, you know, they found out some quite dreadful news, and that's possibly not the most beneficial thing that you want your store to be remembered for...* (venue owner, participant, Prost et al. 2007 [++])

Some of the alternatives proposed by these participants included offering HIV testing as part of a more general health service or publicising the service in the venues while performing the actual tests elsewhere (for example, in a "health bus" or a community location converted into a clinic).

Woods et al. (2008 [+]) conducted a process evaluation of an on-site HIV testing programme in a gay sauna in California. The evaluation revealed high levels of satisfaction among users, particularly in relationship to the comfort and convenience of having testing and counselling services provided in the club. One participant expressed his appreciation of the service comparing it to his previous experiences in various clinics, while another highlighted how easy access prompted him to get tested for the first time:

> *[T]he environment at [the club] is very different. I find the environment at [the club] to be very relaxing[.]* (participant, Woods et al. 2008 [+])
>
> *I had never been tested for AIDS before or HIV and I thought it might be a good idea to just get tested, since it was so readily available.* (participant, Woods et al. 2008 [+])

From the point of view of the club's health promotion director, collaboration with the local health authorities had been key in developing the programme, while support from users had ensured success:

> *[I]t was in [the health department's] interest and their willingness to look at the club in an open and positive way. And the club having some very positive proactive prevention stuff and a good history and reputation during that that allowed [testing] to move forward in a positive way. But had the city not hired [the two succeeding HIV directors] … there wouldn't be any testing [by the health department at the club]* [...] *Patrons really come to demand it on one level. Some set* [sic] *demand it, another set expects it and another set puts up with it. But it's become wallpaper at the club. And the club actively promotes it so there's a clarity that this is going on with the club's permission and blessing.* (venue health promotion director, participant, Woods et al. 2008 [+])

The findings from these studies should also be set against the results of the effectiveness studies of offering testing in recreational venues, discussed in section 5.1.1 above (Galvan et al. 2006 [+]; Spielberg et al. 2005 [++]).

Evidence statement 14: views – testing venues

Participants in one study (Spielberg et al. 2001 [++]) noted the importance of offering services accessible to all MSM in increasing uptake of HIV testing.

Participants in two studies (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]) expressed a preference for community-based services over services offered in clinical settings.

Participants in two studies (Spielberg et al. 2001 [++]; Prost et al. 2007 [++]) saw testing in social venues such as bars or clubs as inappropriate. In one of these studies (Prost et al. 2007 [++]), participants also expressed concerns about the difficulties of obtaining informed consent and providing appropriate post-testing support.

One study (Woods et al. 2008 [+]) which conducted a process evaluation of on-site testing in a sauna setting found that this intervention was generally acceptable to both service users and service providers, and was regarded positively.

Applicability

Only one of the studies in this section comes from the UK (Prost et al. 2007 [++]). Participants in this study were noticeably less positive about testing in non-traditional venues than those in other studies. Hence, there may be issues relating to the applicability of the non-UK findings.

Service delivery

Three studies discussed features of the delivery of testing services, such as privacy and anonymity, testing modality, cost and the delivery of associated counselling services (Mimiaga et al. 2007 [++]; Prost et al. 2007 [++]; Spielberg et al. 2001 [++]).

Three studies (Mimiaga et al. 2007 [++]; Prost et al. 2007 [++]; Spielberg et al. 2001 [++]) reported service users' views regarding privacy or anonymity as a dimension of HIV testing services. Participants in the two US studies emphasised the importance of confidentiality of results (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]). In both studies, participants identified anonymous testing as a facilitator to testing. In fact, anonymous testing was the single most important facilitating factor for MSM in one of these studies (Spielberg et al. 2001 [++]). In the same study, nearly half of MSM participants expressed their concern about named reporting, and said they would test only if an anonymous option was maintained. Fear of discrimination from employers, companies and friends were the reasons argued.

Participants in the third study (Prost et al. 2007 [++]), perhaps reflecting the UK context, discussed the issue more in terms of privacy, that is, being secluded from others during the testing process. The particular focus of this study (namely testing in non-clinical settings) also facilitated a focus on this factor. Concerns about lack of privacy were expressed mostly in terms of the stigma attached to “being seen” using the service, but also in relationship to the adequacy of the setting for counselling:

> *If people see me taking a test, that means that they will, by implication, think that I'm risky, uh, you know, that I have risky sex or things like that.* (participant, Prost et al. 2007 [++])
>
> *I might like to do it, I might agree and get a positive result, and in the end I might walk out in tears. Now if other people know there's a testing facility in there, people may think, "oh look he's just been diagnosed positive … the one that's crying and leaving the pub''* (service provider, participant, Prost et al. 2007 [++])
>
> *You need a quiet corner or an area. I think there's an issue about confidentiality as well. Because if it's actually right in the centre of the bar it's not actually private. You're not actually getting confidential, it's not actually ethical […] I would want to be somewhere where there was privacy, so that while I was having the test or discussing it or whatever, it would be private, no one else could crash it…* (participant, Prost et al. 2007 [++])

Two studies (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]) addressed service users' views on testing methods. In both cases, less intrusive and/or painful methods, such as oral testing, were preferred. Participants in Mimiaga et al. (2007) [++] specifically expressed their dislike of urethral swabs, while participants in Spielberg et al. (2001) [++] particularly disliked venipuncture methods:

> *Never liked it ... being stabbed by another person ... too invasive ... they are sucking out my blood.* (participant, Spielberg et al. 2001 [++])

Participants in this study mentioned urine tests as a viable alternative, and also discussed home HIV specimen collection, which received mixed support (though greater among MSM than among other groups such as IDU). The potential for user error and distrust of the postal service were the main concerns. These results should be compared to the findings of the effectiveness studies regarding the impact of offering different testing modalities, discussed in section 5.1.1 above (Spielberg et al. 2000 [++]; Spielberg et al. 2005 [++]).

Participants in two studies (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]) mentioned free testing as a facilitator or, conversely, lack of access to free testing as a barrier. In Mimiaga et al. (2007 [++]) participants also argued that shorter waiting times and being able to call in for results were areas of improvement for HIV testing services. As one participant in Spielberg et al. (2001 [++]) put it: *"I was sick with waiting one week, that's why I haven't tested again"*. Again, these findings are of clear relevance to our effectiveness findings regarding rapid testing discussed in section 5.1.1 (Spielberg et al. 2005 [++]).

When discussing the ideal HIV testing scenario, participants in two studies (Mimiaga et al. 2007 [++]; Worthington and Myers 2002 [++]) emphasised the need for culturally sensitive venues. This included, in addition to aspects discussed above, *"compassionate, respectful and nonjudgmental"* providers (authors, Mimiaga et al. 2007 [++]). Two participants in Mimiaga et al. (2007 [++]) described encounters with clinicians who were reluctant to give tests routinely, discouraging them unless they had a particular reason to be worried. This was echoed by participants in the other study (Worthington and Myers 2002 [++]).

> *The first one [HIV test experience], it's like, 'Another goddamn fag is spreading the plague carrier.' That's what I felt at the first, the first place here in [city] I'd been tested*. (participant, Worthington and Myers 2002 [++])

This acted as a barrier, particularly considering that many men felt uncomfortable divulging sexual behaviours to (non-supportive) clinicians. Participants suggested that the service would be improved by eliminating the requirement to answer questions about sexual behaviour.

Two studies (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]) specifically addressed aspects of counselling that could improve the users' experience. Participants in Mimiaga et al. (2007 [++]) said that having HIV-positive peers on-site to share their experiences would be helpful, and that sites should offer counselling support at all stages of testing: specimen collection, waiting period, and receiving the results. In contrast, participants in Spielberg et al. (2001 [++]) tended to see in-person risk-reduction pre-test counselling as "repetitive, unnecessary, and in need of new messages". There was a sense of "message saturation" in this regard.

> *I think if you have the black and white Surgeon General's warning, you just turn it off these days. I don't want to be bombarded with it.* (participant, Spielberg et al. 2001 [++])

> *This whole sort of notion of counsellor as principal is I think kind of unfortunate and counterproductive. I don't think that the counsellor should be there to discipline.* (participant, Spielberg et al. 2001 [++])

Evidence statement 15: views – service delivery

Two studies report that confidentiality or anonymity are an important facilitator of testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]). One further study finds that participants prefer to be tested in an area that is secluded and private when tests are offered in non-clinical settings (Prost et al. 2007 [++]).

Two studies address participants' preferences for testing modalities, finding that less invasive methods such as oral testing are preferred to urethral swabs and venipuncture (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]). Participants in one study expressed mixed views regarding home specimen collection as a testing modality (Spielberg et al. 2001 [++]).

Participants in two studies said that services being available for free was a facilitator of testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]) .

Participants in two studies said that long waiting times were a barrier to testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

Participants in two studies expressed a preference for respectful and non-judgmental treatment in the testing situation, and for not being obliged to answer questions about sexual behaviour (Mimiaga et al. 2007 [++]; Worthington and Myers 2002 [++]).

Participants in one study expressed strongly positive views about counselling support, particularly if offered by HIV-positive peers (Mimiaga et al. 2007 [++]). In contrast, participants in one study saw pre-test counselling as unhelpful (Spielberg et al. 2001 [++]).

Applicability

One of three studies in this group was from the UK. Differences regarding the delivery of HIV testing services in other countries, such as cost, may have an impact on the applicability of the findings.

Test results

One study (Hult et al. 2009 [+]) focused on the actual delivery of positive results. Most participants said that the news had been delivered by the service provider in a straightforward manner, with expressions such as “I’m sorry, but you tested positive”. However, some providers’ emotional responses, or lack thereof, made the situation more difficult or upsetting.

> *The thing that I didn’t like was he said, ‘‘Well this shouldn’t be a surprise. We discussed your high risk behaviors,’’ which I was not very happy they handled it that way.* (participant, Hult et al. 2009 [+])
>
> *When he came back, he was crying. He told me that, “I’m sorry, you tested positive.”... And, he’s crying, I’m like, “Okay, I need to calm myself down, ’cause I gotta take care of him!”* (participant, Hult et al. 2009 [+])
>
> *I was surprised there wasn’t much conversation... the person who did it just handed me couple of brochures about places where I could go.* (participant, Hult et al. 2009 [+])

Judgmental observations, nervous breakdowns and use of an *“impersonal”* or *“scripted”* language were mentioned as reasons why the experience had been a negative one by 30% of participants. But the experience of receiving a positive test result was not always negative. Many participants described some positive aspects of the experience, such as feeling *“calmed”* and *“comforted”* by providers (24%); providers expressing concern about their emotional state and either engaging with the issue or calling in a counsellor to talk to them (14%); or being encouraged and reassured about their future and health (10%).

Evidence statement 16: views – test results

One study found that receiving positive results was made often more difficult by negative emotional reactions, or by a judgmental or impersonal approach, on the part of service providers. However, several participants in this study also identified positive aspects of service providers' delivery of test results (Hult et al. 2009 [+]).

Applicability

The one study in this group was conducted outside the UK. It is unclear if there are any barriers to applicability.

5.3.4 Social factors

Peer norms

Two studies found that peer norms could facilitate decisions to test (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]). One study (Spielberg et al. 2001 [++]) suggests that encouragement from peers could be a motivator for testing, while the other (Mimiaga et al. 2007 [++]) finds that following peer norms could sometimes be a positive influence that led to uptake HIV testing. One participant in the latter study perceived testing as being more normative among his peers as a result of aggressive media campaigns.

Evidence statement 17: views – peer and community norms

Two studies found that pro-testing norms or encouragement from peers can be a facilitator of testing (Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

Applicability

Neither of the studies in this group was conducted in the UK. It is unclear if there are any barriers to applicability.

Stigma and discrimination

Five studies mentioned social exclusion, stigma and discrimination as barriers to HIV testing. (Flowers et al. 2000 [++]; Godin et al. 2000 [–]; Mimiaga et al. 2007 [++]; Prost et al. 2007 [++]; Spielberg et al. 2001 [++]). Two distinct forms of stigma that could impact on MSM's willingness to get tested can be distinguished: anti-gay bias in the broader society, and discrimination against HIV-positive MSM within the gay community.

Three studies identified prejudice against gay men as a potential obstacle to men's willingness to test (Godin et al. 2000 [–]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]). One study (Mimiaga et al. 2007 [++]) found that 18% of its participants considered social stigma to be an important barrier to testing. Two respondents also reported being concerned about discrimination from health professionals. This concern about anti-gay attitudes from healthcare personnel was reported in another study (Godin et al. 2000 [–]). This may affect the quality of the relationship between MSM and their physicians, which may an obstacle to testing.

> *If I felt from the beginning that I was not accepted, the relation that I will develop with my physician would start off on the wrong foot.* (participant, Godin et al. 2000 [–])

However, several participants in this study acknowledged that some physicians were more tolerant and receptive than others. To overcome the fear of being stigmatised by health professionals, identifying a competent and trustworthy service provider was seen as crucial.

> *Physicians are human beings, and some of them are not very receptive; they are prejudiced against gay men. It is important to find a good doctor. In medical school they don't learn how to deal with homosexuality.* (participant, Godin et al. 2000 [–])

This concern about social discrimination against MSM also influences preferences for anonymous testing (see the section on "Service delivery" in 5.3.3 above).

Two studies (Flowers et al. 2000 [++]; Prost et al. 2007 [++]) explore the role of HIV-related stigma among MSM themselves as a potential barrier to testing. Again, this stigma informs MSM's desire for anonymous and confidential testing. One study finds that accessing HIV testing may bring with it an automatic assumption of risky sexual behaviour.

> *If people see me taking a test, that means that they will, by implication, think that I'm risky, uh, you know, that I have risky sex or things like that.* (participant, Prost et al. 2007 [++])

Flowers et al. (2000) find that MSM who are known or suspected to be HIV-positive are often the subject of discrimination and malicious gossip within the gay community. This links to their finding that HIV-positive status is seen as implying responsibility for risk exposure and seroconversion, and that unknown status is taken to amount to negative status (these findings are discussed under "Consequences of a positive test" in section 5.3.1 above). Flowers et al.'s (2000 [++]) findings illustrate how pervasive stigmatisation of HIV-positive MSM can act as a powerful disincentive for testing.

<u>Evidence statement 18: views – stigma and discrimination</u>

Three studies find that the fear of anti-MSM prejudice among service providers and the broader society may be a barrier to testing (Godin et al. 2000 [–]; Mimiaga et al. 2007 [++]; Spielberg et al. 2001 [++]).

Participants in one study expressed a fear that being seen to take an HIV test would lead to the assumption that they engaged in risky sexual behaviour (Prost et al. 2007 [++]).

One study finds that prejudices against HIV-positive people among MSM may act as a barrier to testing (Flowers et al. 2000 [++]).

Applicability

Two studies in this group come from the UK. Findings regarding anti-MSM prejudice among service providers come only from non-UK studies, and may not be generalisable.

5.3.5 Population subgroups

Age

Three studies mentioned differences between older and younger MSM (Flowers et al. 2001 [++]; Lekas et al. 2005 [–]; Mimiaga et al. 2007 [++]). Overall, however, the studies do not indicate any strong differences between age groups in their attitudes to HIV testing.

One study focused on older people who tested HIV-positive aged 50 or older (Lekas et al. 2005 [–]). Many of the participants in this study first began to get HIV tests in the 1980s, where the context in terms of the availability of treatments, and of knowledge and information about the disease, was very different. Other than this, however, participants in this study cited factors similar to those mentioned by MSM of all ages in other studies, and attitudes to testing ranged from highly favourable and pro-active views to deep-seated denial.

Participants in one study (Flowers et al. 2001 [++]) felt that younger MSM were more inclined to emphasise the negative aspects of undergoing treatment for HIV, and to delay testing as a result, because they had not experienced the effects of the disease prior to the emergence of effective treatments.

> *But I do think there's a generation who haven't actually watched their friends and their partners die, who actually sit there and look at the side effects of the treatment and think 'Oh that looks awful'. But the alternative is awful, the alternative was all your friends dying of very awful diseases.* (HIV-positive participant, Flowers et al. 2001 [++])

In one other study, participants perceived younger MSM to be less attentive to their health or less likely to see themselves as at risk (Mimiaga et al. 2007 [++]). However, one younger participant felt that testing was more normative among his peers due to media campaigns (Mimiaga et al. 2007 [++]). Finally, some participants in this study felt that anonymity of testing might be particularly valued by young men who wish to avoid the risk of their parents finding out (Mimiaga et al. 2007 [++]).

Evidence statement 19: population subgroups – age

Overall, few differences between older and younger MSM were found in the studies. Two studies found that older MSM's attitudes might be different because of their experience of HIV prior to the availability of effective treatments (Flowers et al. 2001 [++]; Lekas et al. 2005 [–]).

Ethnicity and nationality

A limited amount of data on ethnicity or nationality was found. One black participant mentioned that he had experienced racist attitudes on the part of service providers (Worthington and Myers 2002 [++]). One study focused specifically on the experiences of African MSM living in London, although limited data relevant to testing were presented (Paparini et al. 2008 [–]). Participants in this study noted that the opportunities for testing and counselling were greater in the UK than what they had been used to previously. Motivations for testing in this study were broadly similar to those found in other populations (routine, persistent illness); one motivation in this study that was not widely discussed in other studies was that they had doubts about their partner's behaviour. The study authors report that participants' reasons for delaying testing usually related to *"anxieties and prejudices about HIV"*, but do not give details.

Evidence statement 20: population subgroups – ethnicity and nationality

One study focuses on African MSM living in the UK (Paparini et al. 2008 [–]). Motivations for testing in this population appear to be similar to those for other MSM.

6.0 Discussion

6.1 Key findings

6.1.1 Effectiveness and cost-effectiveness

Types of test / testing protocol

There is evidence from one high-quality US evaluation that, in community settings, offering rapid testing and counselling leads to higher rates of uptake of HIV testing and receipt of results than does traditional testing. Offering HIV tests bundled with other tests in a community setting does not appear to increase testing rates overall, although there is some indication that it may be promising for certain subgroups of MSM.

Peer education and recruitment

There is evidence from one high-quality US evaluation that an intensive residential programme can improve rates of HIV testing at an individual level. The evidence regarding peer education and recruitment in outreach settings suggests that such interventions are not effective at the population level, although this evidence is of lower quality. Cost-benefit analysis of peer recruitment indicates a cost of around US$5000 per new case of HIV identified, although this is highly sensitive to the prevalence of HIV in the targeted population.

Media campaigns

The evidence on campaigns using specialist media targeted at MSM is mixed and not of high quality, and hence does not as yet support strong conclusions regarding effectiveness. There is some evidence that web-based campaigns may be a promising way of increasing HIV testing among high-risk MSM, but again, the evidence is not robust.

Changes to service delivery

There is evidence from before-after studies that implementing guidelines in healthcare settings recommending regular testing for all MSM, or implementing "opt-out" policies for HIV testing, may be promising in increasing testing rates, although the evidence is not robust.

6.1.2 Views

Individual factors

A range of different factors may influence the individual decision to test, including the presence of symptoms, routine testing, risky sexual events, and issues to do with partners and relationships. Testing may also form part of a narrative of empowerment and responsibility relating to individuals' own health. The prospect of eliminating uncertainty may be a motive for some men to seek testing.

On the other hand, attitudes of denial are also widespread, and many MSM express concern about the consequences of a positive test, such as undergoing treatment and changing their sexual behaviour. Untested status is sometimes seen as practically equivalent to negative status.

Relationship factors

HIV testing may be used by some MSM as the basis for adopting a serosorting strategy to provide proof of status to potential partners. Testing may also be more likely at particular points within a relationship: testing at the outset of serious relationships is frequent.

Testing services

Not all MSM are well-informed about the nature of the HIV testing process and the means to access HIV tests. However, they have clear preferences regarding testing venues and modalities. In particular, MSM and other stakeholders in several studies expressed concern about the appropriateness and feasibility of offering testing in social venues such as bars, saunas or clubs. Anonymity and confidentiality were important concerns for participants in many studies. Views of testing-associated counselling services were mixed.

Social factors

Peer norms can be an important facilitator of testing. The expectation of encountering anti-gay prejudice from service providers or others, and the fear of stigma attached to HIV-positive status by other MSM or the broader community, may remain important barriers to accessing testing services.

6.2 Gaps in the literature

This review found a substantial amount of both quantitative and qualitative evidence relevant to increasing HIV testing among MSM. However, there are also a number of gaps in the literature where further research would be valuable.

In general, a limited number of robust, well-reported effectiveness or cost-effectiveness studies were identified. This is particularly true for community-level interventions (such as peer-led outreach or media campaigns), where very few robust studies were identified. The evidence for more individually focused interventions (such as rapid testing or intensive education programmes) is more robust, but, even here, further studies of effectiveness and cost-effectiveness would be of value. The qualitative studies, in contrast, were of fairly high quality overall; nonetheless, more extensive qualitative research would help to validate the findings of the studies in this review.

The data located do not allow us to draw strong conclusions regarding differences between subgroups of MSM, relating to factors such as age, ethnicity or socio-economic status (SES). A reasonably broad range of populations was included overall, with several studies focusing on particular subgroups (such as minority ethnic or older MSM). However, few studies attempted to draw comparisons between subgroups, and it is difficult to make between-study comparisons because of differences in study design and context.

For most of the included studies, many of the participants were recruited through gay-identified or gay-oriented settings or organisations. This was particularly true for the effectiveness studies, but was to some extent true across all the studies. MSM who are less gay-identified in the sense of being less likely to attend gay venues, or to have contact with gay organisations, were considerably less likely to be included in most cases. A related concern with many of the effectiveness studies is that samples were effectively self-selected, with high rates of non-participation, which may limit the generalisability of the findings.

6.3 Strengths and weaknesses of the review

This review was conducted according to full systematic review standards and in accordance with NICE's methods manual for public health reviews. Searches were highly sensitive and encompassed a wide range of sources, and safeguards to ensure reliability were in place throughout the process of screening, data extraction and quality assessment, and data synthesis.

Insufficient high-quality effectiveness evidence was located to support quantitative meta-analysis. Hence, only a narrative synthesis of the studies was possible.

For the review of views, only a thematic synthesis was undertaken; no attempt was made to develop higher-order constructs from the data. This has the advantage of maintaining the transparency of the review process, but tends to emphasise themes found in more studies over those found in fewer, which may not necessarily be the most salient or illuminating. Further qualitative synthesis might be of value, for example, to illuminate the ways in which attitudes of denial relate to, and can co-exist with, dissonant beliefs about the benefits of testing.

For all aspects of the review, a focus on HIV testing among MSM was maintained. Effectiveness and cost-effectiveness studies with a focus on, for example, behavioural risk reduction, were excluded if they did not present outcomes regarding HIV testing among MSM. Similarly, qualitative data were not extracted where they were not relevant to MSM's attitudes to or experiences of HIV testing. Hence, potentially illuminating data from other populations, or regarding distinct but related topics, is not covered by this review, in order to minimise concerns about the applicability and relevance of the data. Thus, for example, beliefs about the determinants of HIV infection risk are not covered here if they were not explicitly linked to HIV testing behaviour, although they might be relevant if seen in a broader context.

Search terms had a strong focus on testing. It is possible that studies that were potentially relevant, but not conceptualised with a focus on testing, were not located. For example, studies of partner tracing to increase HIV detection may not have been located (although it is likely that many of these would not have met the criteria due to study methodology).

For the effectiveness review, our criteria regarding study methodology were relatively inclusive. Any study that used either a comparison or control group (randomised or non-randomised), or presented data from before and after the intervention, was included. Only studies that were limited to both a single group and a single time-point were excluded on the grounds of methodology. However, even this broad criterion may have excluded some relevant studies. In particular, studies which measure testing uptake as their sole outcome will often measure outcomes at one time point only (since outcome measurement is, in effect, simultaneous with intervention delivery). Such studies were therefore included only if they contained a comparison group. This exclusion helps to maintain the focus of the effectiveness review, since non-comparative studies with a single time-point are challenging to interpret in terms of effectiveness. However, it is possible that some potentially illuminating data has been lost as a result.

Finally, studies which did not have a focus on MSM, or clearly report data on the MSM within the study sample, were excluded. The rationale for this was that data on other populations may not be readily transferable to MSM, but, again, it is possible that indirectly relevant data could be found in studies on the promotion of HIV testing among the general population.

7.0 References

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8.0 Appendix A. Search strategies and results

8.1 Database searches

Applied Social Sciences Index and Abstracts (ASSIA)
Searched via CSA
Searched: Friday, January 8th

1. (health* and (educat* or aware* or opportunit* or attitude* or access* or inform* or promot* or prevent* or behav*)) OR (sex* and (behav* or educat*)) OR (risk* and (taking or factor* or behav* or educat* or reduc*)) OR (patient* and (satisfaction or educat* or behav* or compliance or comply or complie*)) OR (barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance) OR (attitude* or motivation or stigma or opinion* or belief* or perceiv* or perception* or aware* or personal view* or motivat* or incentive* or reason*)

2. (attend* or non-attend* or increas* or promot* or opt* or particip* or adherence or involvement or uptake or take-up or utilize or utilise or refus* or referr* or self-referr* or barrier* or decrease* or interven* or aware* or opportunit*)

1 OR 2 = 3

4. (“Men who have sex with men” or “MSM” or “same sex” or (gay and (men or male*)) or Homosexual* or (male and (sex work* or prostitute* or transactional sex*)) or bisexual*)

5. (hiv* or “Human immunodeficiency virus”)

6. (test* or VCT or “voluntary counselling and test*” or “client initiated test*” or PIT or “Provider initiated testing” or (“sexual health” or gum or sti and (service* or clinic)))
Strategy: #4 AND #5 AND #6 AND #3 (limit 1996-2009)

EMBASE
Searched via Ovid (1980 to 2009 Week 53)
Searched: Friday, January 8th

1. gay and (men or male$).mp
2. Homosexuality, Male/ or homosexual$.mp
3. exp homosexuality/
4. Men who have sex with men.mp
5. same sex.mp
6. MSM.mp
7. (male and (sex work$ or prostitute$ or transactional sex$)).mp
8. bisexual.mp or bisexuality/
9. or/1-8
10. exp hiv/

11. exp hiv-1/
12. exp hiv-2/
13. Human immunodeficiency virus.mp
14. hiv.mp
15. or/10-14
16. test$.mp
17. VCT.mp
18. voluntary counselling and testing.mp or voluntary counselling and testing.mp
19. PIT.mp
20. Provider initiated testing.mp
21. client initiated testing.mp
22. (sexual health or gum or sti and (service$ or clinic)).mp
23. or/16-22
24. (attend$ or non-attend$ or increas$ or promot$ or opt$ or particip$ or adherence or involvement or uptake or take-up or utilize or utilise or refus$ or referr$ or self-referr$ or barrier$ or decrease$ or interven$ or aware$ or opportunit$).mp
25. Attitude to health/
26. Health service accessibility.mp
27. Access to information/
28. Health education/
29. Health promotion/
30. Preventive health services/
31. Sexual behaviour.mp
32. Patient acceptance of health care/
33. Patient compliance/
34. Risk reduction behavior/ or Risk reduction behaviour/
35. Risk-taking/
36. Motivation/
37. Stigma.mp
38. (health$ adj3 (educat$ or aware$ or opportunit$ or attitude$ or access$ or inform$ or promot$ or prevent$ or behavio?r$)).ti,ab.
39. (sex$ adj2 (behavio?r$ or educat$)).ti,ab.
40. (risk$ adj3 (taking or factor$ or behavio?r$ or educat$ or reduc$)).ti,ab.
41. (patient$ adj3 (satisfaction or educat$ or behavio?r$ or compliance or comply or complie$)).ti,ab.
42. (barrier$ or facilitat$ or hinder$ or block$ or obstacle$ or restrict$ or restrain$ or obstruct$ or inhibit$ or impede$ or delay$ or constrain$ or hindrance).ti,ab.
43. (attitude$ or opinion$ or belief$ or perceiv$ or perception$ or aware$ or personal view$ or motivat$ or incentive$ or reason$).ti,ab.
44. Or/25-43
45. 24 OR 44
46. 9 and 15 and 23 and 45
47. limit 46 to (English language and humans)
48. limit 47 yr= “1996 – Current”

BL Direct
Searched via http://direct.bl.uk/bld/Home.do
Searched: Thursday, January 7th

(“Men who have sex with men” or “MSM” or “same sex” or (gay and (men or male*)) or Homosexual* or (male and (sex work* or prostitute* or transactional sex*)) or bisexual*)

7 day date limit applied

British Nursing Index
Searched via Ovid
Searched: Friday, January 8th

1. gay and (men or male$).mp
2. Homosexuality, Male/ or homosexual$.mp
3. exp homosexuality/
4. Men who have sex with men.mp
5. same sex.mp
6. MSM.mp
7. (male and (sex work$ or prostitute$ or transactional sex$)).mp
8. bisexual.mp or bisexuality/
9. or/1-8
10. exp hiv/
11. exp hiv-1/
12. exp hiv-2/
13. Human immunodeficiency virus.mp
14. hiv.mp
15. or/10-14
16. test$.mp
17. VCT.mp
18. voluntary counselling and testing.mp or voluntary counselling and testing.mp
19. PIT.mp
20. Provider initiated testing.mp
21. client initiated testing.mp
22. (sexual health or gum or sti and (service$ or clinic)).mp
23. or/16-22
24. (attend$ or non-attend$ or increas$ or promot$ or opt$ or particip$ or adherence or involvement or uptake or take-up or utilize or utilise or refus$ or referr$ or self-referr$ or barrier$ or decrease$ or interven$ or aware$ or opportunit$).mp
25. Attitude to health/
26. Health service accessibility.mp
27. Access to information/
28. Health education/
29. Health promotion/

30. Preventive health services/
31. Sexual behaviour.mp
32. Patient acceptance of health care/
33. Patient compliance/
34. Risk reduction behavior/ or Risk reduction behaviour/
35. Risk-taking/
36. Motivation/
37. Stigma.mp
38. (health$ adj3 (educat$ or aware$ or opportunit$ or attitude$ or access$ or inform$ or promot$ or prevent$ or behavio?r$)).ti,ab.
39. (sex$ adj2 (behavio?r$ or educat$)).ti,ab.
40. (risk$ adj3 (taking or factor$ or behavio?r$ or educat$ or reduc$)).ti,ab.
41. (patient$ adj3 (satisfaction or educat$ or behavio?r$ or compliance or comply or complie$)).ti,ab.
42. (barrier$ or facilitat$ or hinder$ or block$ or obstacle$ or restrict$ or restrain$ or obstruct$ or inhibit$ or impede$ or delay$ or constrain$ or hindrance).ti,ab.
43. (attitude$ or opinion$ or belief$ or perceiv$ or perception$ or aware$ or personal view$ or motivat$ or incentive$ or reason$).ti,ab.
44. Or/25-43
45. 24 OR 44
46. 9 and 15 and 23 and 45
47. limit 46 to (English language and humans)
48. limit 47 yr= “1996 – Current”

Centre for Reviews and Dissemination (CRD)
Searched via http://www.crd.york.ac.uk/crdweb/
Searched: Friday, 8th January

1. (health* and (educat* or aware* or opportunit* or attitude* or access* or inform* or promot* or prevent* or behav*)) OR (sex* and (behav* or educat*)) OR (risk* and (taking or factor* or behav* or educat* or reduc*)) OR (patient* and (satisfaction or educat* or behav* or compliance or comply or complie*)) OR (barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance) OR (attitude* or motivation or stigma or opinion* or belief* or perceiv* or perception* or aware* or personal view* or motivat* or incentive* or reason*)
2. (attend* or non-attend* or increas* or promot* or opt* or particip* or adherence or involvement or uptake or take-up or utilize or utilise or refus* or referr* or self-referr* or barrier* or decrease* or interven* or aware* or opportunit*)

1 OR 2 = 3

4. (“Men who have sex with men” or “MSM” or “same sex” or (gay and (men or male*)) or Homosexual* or (male and (sex work* or prostitute* or transactional sex*)) or bisexual*)

5. (hiv* or “Human immunodeficiency virus”)

6. (test* or VCT or “voluntary counselling and test*” or “client initiated test*” or PIT or “Provider initiated testing” or (“sexual health” or gum or sti and (service* or clinic)))

Strategy: 4 AND 5 AND 6 AND 3 (Limit 1996-2009)

Cochrane Database of Systematic Reviews
Searched via Wiley Interscience
Searched: Friday, 8th January

1. (health* and (educat* or aware* or opportunit* or attitude* or access* or inform* or promot* or prevent* or behav*)) OR (sex* and (behav* or educat*)) OR (risk* and (taking or factor* or behav* or educat* or reduc*)) OR (patient* and (satisfaction or educat* or behav* or compliance or comply or complie*)) OR (barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance) OR (attitude* or motivation or stigma or opinion* or belief* or perceiv* or perception* or aware* or personal view* or motivat* or incentive* or reason*)

2. (attend* or non-attend* or increas* or promot* or opt* or particip* or adherence or involvement or uptake or take-up or utilize or utilise or refus* or referr* or self-referr* or barrier* or decrease* or interven* or aware* or opportunit*)

1 OR 2 = 3

4. (“Men who have sex with men” or “MSM” or “same sex” or (gay and (men or male*)) or Homosexual* or (male and (sex work* or prostitute* or transactional sex*)) or bisexual*)

5. (hiv* or “Human immunodeficiency virus”)

6. (test* or VCT or “voluntary counselling and test*” or “client initiated test*” or PIT or “Provider initiated testing” or (“sexual health” or gum or sti and (service* or clinic)))

Strategy: 4 AND 5 AND 6 AND 3 (limit 1996-2009)

Cumulative Index to Nursing & Allied Health Literature (CINAHL)
Searched via Ebsco Host
Searched: Friday, January 8th

1. gay and (men or male$)
2. Homosexuality, Male/ or homosexual$
3. exp homosexuality/
4. Men who have sex with men
5. same sex
6. MSM

7. (male and (sex work$ or prostitute$ or transactional sex$))
8. bisexual.mp or bisexuality/
9. or/1-8
10. exp hiv/
11. exp hiv-1/
12. exp hiv-2/
13. Human immunodeficiency virus
14. hiv$
15. or/10-14
16. test$
17. VCT
18. voluntary counselling and testing.mp or voluntary counselling and testing
19. PIT
20. Provider initiated testing
21. client initiated testing
22. (sexual health or gum or sti and (service$ or clinic))
23. or/16-22
24. (attend$ or non-attend$ or increas$ or promot$ or opt$ or particip$ or adherence or involvement or uptake or take-up or utilize or utilise or refus$ or referr$ or self-referr$ or barrier$ or decrease$ or interven$ or aware$ or opportunit$)
25. Attitude to health/
26. Health service accessibility
27. Access to information/
28. Health education/
29. Health promotion/
30. Preventive health services/
31. Sexual behaviour
32. Patient acceptance of health care/
33. Patient compliance/
34. Risk reduction behavior/ or Risk reduction behaviour/
35. Risk-taking/
36. Motivation/
37. Stigma.mp
38. (health$ adj3 (educat$ or aware$ or opportunit$ or attitude$ or access$ or inform$ or promot$ or prevent$ or behavio?r$)).ti,ab.
39. (sex$ adj2 (behavio?r$ or educat$)).ti,ab.
40. (risk$ adj3 (taking or factor$ or behavio?r$ or educat$ or reduc$)).ti,ab.
41. (patient$ adj3 (satisfaction or educat$ or behavio?r$ or compliance or comply or complie$)).ti,ab.
42. (barrier$ or facilitat$ or hinder$ or block$ or obstacle$ or restrict$ or restrain$ or obstruct$ or inhibit$ or impede$ or delay$ or constrain$ or hindrance).ti,ab.
43. (attitude$ or opinion$ or belief$ or perceiv$ or perception$ or aware$ or personal view$ or motivat$ or incentive$ or reason$).ti,ab.
44. Or/25-43
45. 24 OR 44

46. 9 and 15 and 23 and 45
47. limit 46 to (English language and humans)
48. limit 47 yr= “1996 – Current”

Eric (Education Resources Information Centre)
Searched via CSA
Searched: Friday, January 8th

1. (health* and (educat* or aware* or opportunit* or attitude* or access* or inform* or promot* or prevent* or behav*)) OR (sex* and (behav* or educat*)) OR (risk* and (taking or factor* or behav* or educat* or reduc*)) OR (patient* and (satisfaction or educat* or behav* or compliance or comply or complie*)) OR (barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance) OR (attitude* or motivation or stigma or opinion* or belief* or perceiv* or perception* or aware* or personal view* or motivat* or incentive* or reason*)

2. (attend* or non-attend* or increas* or promot* or opt* or particip* or adherence or involvement or uptake or take-up or utilize or utilise or refus* or referr* or self-referr* or barrier* or decrease* or interven* or aware* or opportunit*)

1 OR 2 = 3

4. (“Men who have sex with men” or “MSM” or “same sex” or (gay and (men or male*)) or Homosexual* or (male and (sex work* or prostitute* or transactional sex*)) or bisexual*)

5. (hiv* or “Human immunodeficiency virus”)

6. (test* or VCT or “voluntary counselling and test*” or “client initiated test*” or PIT or “Provider initiated testing” or (“sexual health” or gum or sti and (service* or clinic)))

Strategy: 4 AND 5 AND 6 AND 3 (Limit 1996-2009)

Health Management Information Consortium (HMIC)
Searched via Ovid
Searched: Friday, January 8th

1. gay and (men or male$).mp
2. Homosexuality, Male/ or homosexual$.mp
3. exp homosexuality/
4. Men who have sex with men.mp
5. same sex.mp
6. MSM.mp
7. (male and (sex work$ or prostitute$ or transactional sex$)).mp
8. bisexual.mp or bisexuality/

9. or/1-8
10. exp hiv/
11. exp hiv-1/
12. exp hiv-2/
13. Human immunodeficiency virus.mp
14. hiv.mp
15. or/10-14
16. test$.mp
17. VCT.mp
18. voluntary counselling and testing.mp or voluntary counselling and testing.mp
19. PIT.mp
20. Provider initiated testing.mp
21. client initiated testing.mp
22. (sexual health or gum or sti and (service$ or clinic)).mp
23. or/16-22
24. (attend$ or non-attend$ or increas$ or promot$ or opt$ or particip$ or adherence or involvement or uptake or take-up or utilize or utilise or refus$ or referr$ or self-referr$ or barrier$ or decrease$ or interven$ or aware$ or opportunit$).mp
25. Attitude to health/
26. Health service accessibility.mp
27. Access to information/
28. Health education/
29. Health promotion/
30. Preventive health services/
31. Sexual behaviour.mp
32. Patient acceptance of health care/
33. Patient compliance/
34. Risk reduction behavior/ or Risk reduction behaviour/
35. Risk-taking/
36. Motivation/
37. Stigma.mp
38. (health$ adj3 (educat$ or aware$ or opportunit$ or attitude$ or access$ or inform$ or promot$ or prevent$ or behavio?r$)).ti,ab.
39. (sex$ adj2 (behavio?r$ or educat$)).ti,ab.
40. (risk$ adj3 (taking or factor$ or behavio?r$ or educat$ or reduc$)).ti,ab.
41. (patient$ adj3 (satisfaction or educat$ or behavio?r$ or compliance or comply or complie$)).ti,ab.
42. (barrier$ or facilitat$ or hinder$ or block$ or obstacle$ or restrict$ or restrain$ or obstruct$ or inhibit$ or impede$ or delay$ or constrain$ or hindrance).ti,ab.
43. (attitude$ or opinion$ or belief$ or perceiv$ or perception$ or aware$ or personal view$ or motivat$ or incentive$ or reason$).ti,ab.
44. Or/25-43
45. 24 OR 44
46. 9 and 15 and 23 and 45
47. limit 46 to (English language and humans)

48. limit 47 yr= “1996 – Current”

ISI Web of Science and Conference Proceedings Citation Index (formally ISI Proceedings)
Searched via Web of Science (ISI)
Searched: Thursday, January 7th

Strategy 1 (Qualitative)

1. (gay and (men or male*))
2. (male and (sex work* or prostitute* or transactional sex*))
3. (Men who have sex with men)
4. (MSM or Homosexual* or bisexual*)
5. or/1-4
6. (hiv* or Human immunodeficiency virus)
7. (test* or VCT or voluntary counselling and test* or client initiated test* or PIT or Provider initiated testing)
8. (sexual health or gum or sti and (service* or clinic))
9. or/7-8
10. 5 and 6 and 9
11. (health* and (educat* or aware* or opportunit* or attitude* or access* or inform* or promot* or prevent* or behav*))
12. (sex* and (behav* or educat*))
13. (risk* and (taking or factor* or behav* or educat* or reduc*))
14. (patient* and (satisfaction or educat* or behav* or compliance or comply or complie*))

15. (barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance or attitude* or motivation or stigma or opinion* or belief* or perceiv* or perception* or aware* or personal view* or motivat* or incentive* or reason*)
16. or/11-15
17. 10 and 16
18. limit 17 to 1996-2009
19. limit 18 to English language

Strategy 2 (Quantitative)

1. (gay and (men or male*))
2. (male and (sex work* or prostitute* or transactional sex*))
3. (Men who have sex with men)
4. (MSM or Homosexual* or bisexual*)
5. or/1-4
6. (hiv* or Human immunodeficiency virus)
7. (test* or VCT or voluntary counselling and test* or client initiated test* or PIT or Provider initiated testing)
8. (sexual health or gum or sti and (service* or clinic))

9. or/7-8
10. 5 and 6 and 9
11. (attend* or non-attend* or increas* or promot* or opt* or particip* or adherence or involvement or uptake or take-up or utilize or utilise or refus* or referr* or self-referr* or barrier* or decrease* or interven* or aware* or opportunit*)
12. 10 and 11
13. limit 12 to 1996-2009
14. limit 13 to English language

Current Contents Connect
Searched via Web of Knowledge (ISI)
Searched: Thursday, January 7th

Strategy 1 (Qualitative)

1. (gay and (men or male*))
2. (male and (sex work* or prostitute* or transactional sex*))
3. (Men who have sex with men)
4. (MSM or Homosexual* or bisexual*)
5. or/1-4
6. (hiv* or Human immunodeficiency virus)
7. (test* or VCT or voluntary counselling and test* or client initiated test* or PIT or Provider initiated testing)
8. (sexual health or gum or sti and (service* or clinic))
9. or/7-8
10. 5 and 6 and 9
11. (health* and (educat* or aware* or opportunit* or attitude* or access* or inform* or promot* or prevent* or behav*))
12. (sex* and (behav* or educat*))
13. (risk* and (taking or factor* or behav* or educat* or reduc*))
14. (patient* and (satisfaction or educat* or behav* or compliance or comply or complie*))
15. (barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance or attitude* or motivation or stigma or opinion* or belief* or perceiv* or perception* or aware* or personal view* or motivat* or incentive* or reason*)
16. or/11-15
17. 10 and 16
18. limit 17 to 1996-2009
19. limit 18 to English language

Strategy 2 (Quantitative)

1. (gay and (men or male*))
2. (male and (sex work* or prostitute* or transactional sex*))
3. (Men who have sex with men)

4. (MSM or Homosexual* or bisexual*)
5. or/1-4
6. (hiv* or Human immunodeficiency virus)
7. (test* or VCT or voluntary counselling and test* or client initiated test* or PIT or Provider initiated testing)
8. (sexual health or gum or sti and (service* or clinic))
9. or/7-8
10. 5 and 6 and 9
11. (attend* or non-attend* or increas* or promot* or opt* or particip* or adherence or involvement or uptake or take-up or utilize or utilise or refus* or referr* or self-referr* or barrier* or decrease* or interven* or aware* or opportunit*)
12. 10 and 11
13. limit 12 to 1996-2009
14. limit 13 to English language

Medline
Searched via Ovid
Searched: Friday, January 8th

1. gay and (men or male$).mp
2. Homosexuality, Male/ or homosexual$.mp
3. exp homosexuality/
4. Men who have sex with men.mp
5. same sex.mp
6. MSM.mp
7. (male and (sex work$ or prostitute$ or transactional sex$)).mp
8. bisexual.mp or bisexuality/
9. or/1-8
10. exp hiv/
11. exp hiv-1/
12. exp hiv-2/
13. Human immunodeficiency virus.mp
14. hiv.mp
15. or/10-14
16. test$.mp
17. VCT.mp
18. voluntary counselling and testing.mp or voluntary counselling and testing.mp
19. PIT.mp
20. Provider initiated testing.mp
21. client initiated testing.mp
22. (sexual health or gum or sti and (service$ or clinic)).mp
23. or/16-22
24. (attend$ or non-attend$ or increas$ or promot$ or opt$ or particip$ or adherence or involvement or uptake or take-up or utilize or utilise or refus$ or referr$ or self-referr$ or barrier$ or decrease$ or interven$ or aware$ or opportunit$).mp

25. Attitude to health/
26. Health service accessibility.mp
27. Access to information/
28. Health education/
29. Health promotion/
30. Preventive health services/
31. Sexual behaviour.mp
32. Patient acceptance of health care/
33. Patient compliance/
34. Risk reduction behavior/ or Risk reduction behaviour/
35. Risk-taking/
36. Motivation/
37. Stigma.mp
38. (health$ adj3 (educat$ or aware$ or opportunit$ or attitude$ or access$ or inform$ or promot$ or prevent$ or behavio?r$)).ti,ab.
39. (sex$ adj2 (behavio?r$ or educat$)).ti,ab.
40. (risk$ adj3 (taking or factor$ or behavio?r$ or educat$ or reduc$)).ti,ab.
41. (patient$ adj3 (satisfaction or educat$ or behavio?r$ or compliance or comply or complie$)).ti,ab.
42. (barrier$ or facilitat$ or hinder$ or block$ or obstacle$ or restrict$ or restrain$ or obstruct$ or inhibit$ or impede$ or delay$ or constrain$ or hindrance).ti,ab.
43. (attitude$ or opinion$ or belief$ or perceiv$ or perception$ or aware$ or personal view$ or motivat$ or incentive$ or reason$).ti,ab.
44. Or/25-43
45. 24 OR 44
46. 9 and 15 and 23 and 45
47. limit 46 to (English language and humans)
48. limit 47 yr= “1996 – Current”

Medline in Process
Searched via Ovid
Searched: Friday, January 8th

1. gay and (men or male$).mp
2. Homosexuality, Male/ or homosexual$.mp
3. exp homosexuality/
4. Men who have sex with men.mp
5. same sex.mp
6. MSM.mp
7. (male and (sex work$ or prostitute$ or transactional sex$)).mp
8. bisexual.mp or bisexuality/
9. or/1-8
10. exp hiv/
11. exp hiv-1/
12. exp hiv-2/

13. Human immunodeficiency virus.mp
14. hiv.mp
15. or/10-14
16. test$.mp
17. VCT.mp
18. voluntary counselling and testing.mp or voluntary counselling and testing.mp
19. PIT.mp
20. Provider initiated testing.mp
21. client initiated testing.mp
22. (sexual health or gum or sti and (service$ or clinic)).mp
23. or/16-22
24. (attend$ or non-attend$ or increas$ or promot$ or opt$ or particip$ or adherence or involvement or uptake or take-up or utilize or utilise or refus$ or referr$ or self-referr$ or barrier$ or decrease$ or interven$ or aware$ or opportunit$).mp
25. Attitude to health/
26. Health service accessibility.mp
27. Access to information/
28. Health education/
29. Health promotion/
30. Preventive health services/
31. Sexual behaviour.mp
32. Patient acceptance of health care/
33. Patient compliance/
34. Risk reduction behavior/ or Risk reduction behaviour/
35. Risk-taking/
36. Motivation/
37. Stigma.mp
38. (health$ adj3 (educat$ or aware$ or opportunit$ or attitude$ or access$ or inform$ or promot$ or prevent$ or behavio?r$)).ti,ab.
39. (sex$ adj2 (behavio?r$ or educat$)).ti,ab.
40. (risk$ adj3 (taking or factor$ or behavio?r$ or educat$ or reduc$)).ti,ab.
41. (patient$ adj3 (satisfaction or educat$ or behavio?r$ or compliance or comply or complie$)).ti,ab.
42. (barrier$ or facilitat$ or hinder$ or block$ or obstacle$ or restrict$ or restrain$ or obstruct$ or inhibit$ or impede$ or delay$ or constrain$ or hindrance).ti,ab.
43. (attitude$ or opinion$ or belief$ or perceiv$ or perception$ or aware$ or personal view$ or motivat$ or incentive$ or reason$).ti,ab.
44. Or/25-43
45. 24 OR 44
46. 9 and 15 and 23 and 45
47. limit 46 to (English language and humans)
48. limit 47 yr= “1996 – Current”

Psycinfo
Searched via Ovid

Searched: Friday, January 8th

1. gay and (men or male$).mp
2. Homosexuality, Male/ or homosexual$.mp
3. exp homosexuality/
4. Men who have sex with men.mp
5. same sex.mp
6. MSM.mp
7. (male and (sex work$ or prostitute$ or transactional sex$)).mp
8. bisexual.mp or bisexuality/
9. or/1-8
10. exp hiv/
11. exp hiv-1/
12. exp hiv-2/
13. Human immunodeficiency virus.mp
14. hiv.mp
15. or/10-14
16. test$.mp
17. VCT.mp
18. voluntary counselling and testing.mp or voluntary counselling and testing.mp
19. PIT.mp
20. Provider initiated testing.mp
21. client initiated testing.mp
22. (sexual health or gum or sti and (service$ or clinic)).mp
23. or/16-22
24. (attend$ or non-attend$ or increas$ or promot$ or opt$ or particip$ or adherence or involvement or uptake or take-up or utilize or utilise or refus$ or referr$ or self-referr$ or barrier$ or decrease$ or interven$ or aware$ or opportunit$).mp
25. Attitude to health/
26. Health service accessibility.mp
27. Access to information/
28. Health education/
29. Health promotion/
30. Preventive health services/
31. Sexual behaviour.mp
32. Patient acceptance of health care/
33. Patient compliance/
34. Risk reduction behavior/ or Risk reduction behaviour/
35. Risk-taking/
36. Motivation/
37. Stigma.mp
38. (health$ adj3 (educat$ or aware$ or opportunit$ or attitude$ or access$ or inform$ or promot$ or prevent$ or behavio?r$)).ti,ab.
39. (sex$ adj2 (behavio?r$ or educat$)).ti,ab.
40. (risk$ adj3 (taking or factor$ or behavio?r$ or educat$ or reduc$)).ti,ab.

41. (patient$ adj3 (satisfaction or educat$ or behavio?r$ or compliance or comply or complie$)).ti,ab.
42. (barrier$ or facilitat$ or hinder$ or block$ or obstacle$ or restrict$ or restrain$ or obstruct$ or inhibit$ or impede$ or delay$ or constrain$ or hindrance).ti,ab.
43. (attitude$ or opinion$ or belief$ or perceiv$ or perception$ or aware$ or personal view$ or motivat$ or incentive$ or reason$).ti,ab.
44. Or/25-43
45. 24 OR 44
46. 9 and 15 and 23 and 45
47. limit 46 to (English language and humans)
48. limit 47 yr= “1996 – Current”

Scopus
Searched via Elsevier
Searched: Friday, January 8th

1. (health* and (educat* or aware* or opportunit* or attitude* or access* or inform* or promot* or prevent* or behav*)) OR (sex* and (behav* or educat*)) OR (risk* and (taking or factor* or behav* or educat* or reduc*)) OR (patient* and (satisfaction or educat* or behav* or compliance or comply or complie*)) OR (barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance) OR (attitude* or motivation or stigma or opinion* or belief* or perceiv* or perception* or aware* or personal view* or motivat* or incentive* or reason*)

2. (attend* or non-attend* or increas* or promot* or opt* or particip* or adherence or involvement or uptake or take-up or utilize or utilise or refus* or referr* or self-referr* or barrier* or decrease* or interven* or aware* or opportunit*)

1 OR 2 = 3

4. (“Men who have sex with men” or “MSM” or “same sex” or (gay and (men or male*)) or Homosexual* or (male and (sex work* or prostitute* or transactional sex*)) or bisexual*)

5. (hiv* or “Human immunodeficiency virus”)

6. (test* or VCT or “voluntary counselling and test*” or “client initiated test*” or PIT or “Provider initiated testing” or (“sexual health” or gum or sti and (service* or clinic)))

Strategy: 4 AND 5 AND 6 AND 3 (limit 1996-2009)

Social Policy and Practice
Searched via Ovid
Searched: Friday, January 8th

1. gay and (men or male$).mp

2. Homosexuality, Male/ or homosexual$.mp
3. exp homosexuality/
4. Men who have sex with men.mp
5. same sex.mp
6. MSM.mp
7. (male and (sex work$ or prostitute$ or transactional sex$)).mp
8. bisexual.mp or bisexuality/
9. or/1-8
10. exp hiv/
11. exp hiv-1/
12. exp hiv-2/
13. Human immunodeficiency virus.mp
14. hiv.mp
15. or/10-14
16. test$.mp
17. VCT.mp
18. voluntary counselling and testing.mp or voluntary counselling and testing.mp
19. PIT.mp
20. Provider initiated testing.mp
21. client initiated testing.mp
22. (sexual health or gum or sti and (service$ or clinic)).mp
23. or/16-22
24. (attend$ or non-attend$ or increas$ or promot$ or opt$ or particip$ or adherence or involvement or uptake or take-up or utilize or utilise or refus$ or referr$ or self-referr$ or barrier$ or decrease$ or interven$ or aware$ or opportunit$).mp
25. Attitude to health/
26. Health service accessibility.mp
27. Access to information/
28. Health education/
29. Health promotion/
30. Preventive health services/
31. Sexual behaviour.mp
32. Patient acceptance of health care/
33. Patient compliance/
34. Risk reduction behavior/ or Risk reduction behaviour/
35. Risk-taking/
36. Motivation/
37. Stigma.mp
38. (health$ adj3 (educat$ or aware$ or opportunit$ or attitude$ or access$ or inform$ or promot$ or prevent$ or behavio?r$)).ti,ab.
39. (sex$ adj2 (behavio?r$ or educat$)).ti,ab.
40. (risk$ adj3 (taking or factor$ or behavio?r$ or educat$ or reduc$)).ti,ab.
41. (patient$ adj3 (satisfaction or educat$ or behavio?r$ or compliance or comply or complie$)).ti,ab.

42. (barrier$ or facilitat$ or hinder$ or block$ or obstacle$ or restrict$ or restrain$ or obstruct$ or inhibit$ or impede$ or delay$ or constrain$ or hindrance).ti,ab.
43. (attitude$ or opinion$ or belief$ or perceiv$ or perception$ or aware$ or personal view$ or motivat$ or incentive$ or reason$).ti,ab.
44. Or/25-43
45. 24 OR 44
46. 9 and 15 and 23 and 45
47. limit 46 to (English language and humans)
48. limit 47 yr= “1996 – Current”

Econlit
Searched via OCLC
Searched: Friday, January 8th

1. (Men who have sex with men or MSM or same sex or (gay and (men or male)) or Homosexual* or (male and (sex work or sex worker or sex working or prostitute* or transactional sex*)) or bisexual*)

2. (hiv* or Human immunodeficiency virus)

3. (test* or VCT or voluntary counselling and test* or client initiated test* or PIT or Provider initiated testing or (sexual health or gum or sti and (service* or clinic)))

4. (attend* or non-attend* or increas* or promot* or opt* or particip* or adherence or involvement or uptake or take-up or utilize or utilise or refus* or referr* or self-referr* or barrier* or decrease* or interven* or aware* or opportunit*)

Strategy: 1 and 2 and 3 and 4 (Limit results to 1996-2009 and English Language)

9.0 Appendix B. Screening checklists

9.1 Abstract screening checklist

1.	Does the study include men who have sex with men (MSM)?	YES/UNCLEAR – go to Q2	NO – exclude
2.	Does the study relate to HIV testing?	YES/UNCLEAR – go to Q3	NO – exclude
3.	Was the study conducted in an OECD country? [8]	YES/UNCLEAR – go to Q4	NO – exclude
4.	Was the study published in 1996 or later?	YES/UNCLEAR – go to Q5	NO – exclude
5.	Does the study present views data regarding perceptions of or attitudes to HIV testing, or testing services? (This includes views of existing services, preferences, past experiences or future expectations, knowledge and beliefs relating to testing, or potential barriers and facilitators of accessing testing services. Study methods include surveys, interviews, case studies, or ethnographic or action research. Both qualitative and quantitative views data should be included here. Systematic reviews including such studies should be included at this stage.)	YES/UNCLEAR – include in qualitative review and go to Q8	NO – go to Q6
6.	Does the study include MSM who are HIV-negative or do not know their HIV status, and are competent to consent to an HIV test?	YES/UNCLEAR – go to Q7	NO – exclude
7.	Does the study relate to an intervention which aims to increase the uptake of HIV testing? (This may include, for example: media campaigns; individual advice and information from clinicians, health promotion practitioners or others; changes to service delivery or accessibility to reduce barriers to testing	YES/UNCLEAR – go to Q8	NO – exclude

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[8] Current members of the OECD are: Australia; Austria; Belgium; Canada; Czech Republic; Denmark; Finland; France; Germany; Greece; Hungary; Iceland; Ireland; Italy; Japan; Luxembourg; Mexico; Netherlands; New Zealand; Norway; Poland; Portugal; Slovakia; South Korea; Spain; Sweden; Switzerland; Turkey; UK; USA.

	(including offering different methods of testing); or educational interventions to reduce the stigma associated with testing. 'Testing' includes any testing, either public- or provider-initiated, and whether or not accompanied by counselling.)		
8.	Is the study a prospective intervention study with a comparison group (i.e. either an RCT or a non-randomized controlled trial), or a systematic review including such studies?	YES/UNCLEAR – include in effectiveness review and go to Q9	NO – go to Q9
9.	Is the study a cost-benefit or cost-effectiveness analysis, or any other type of economic evaluation, or a systematic review including such studies?	YES/UNCLEAR – include in cost-effectiveness review	NO – exclude

9.2 Full text screening checklist

1.	Does the study include men who have sex with men (MSM), or focus on services aimed at MSM? (If the study does not have a primary focus on MSM, it must present disaggregated data on MSM, or on services aimed at MSM, to be included.)	YES– go to Q2	NO/UNCLEAR – exclude
2.	Does the study relate to HIV testing?	YES– go to Q3	NO/UNCLEAR – exclude
3.	Was the study conducted in an OECD country? [9]	YES/UNCLEAR – go to Q4	NO – exclude
4.	Was the study published in 1996 or later?	YES/UNCLEAR – go to Q5	NO – exclude
5.	Does the study present views data regarding perceptions of or attitudes to HIV testing, or testing services? (This includes views of service users, professionals and other stakeholders. It includes views of existing services, preferences, past experiences or future expectations, knowledge and beliefs	YES, PRIMARY STUDY – include in views review and go to Q6 YES, SYSTEMATIC REVIEW[10] – retain for references	NO – go to Q6

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[9] Current members of the OECD are: Australia; Austria; Belgium; Canada; Czech Republic; Denmark; Finland; France; Germany; Greece; Hungary; Iceland; Ireland; Italy; Japan; Luxembourg; Mexico; Netherlands; New Zealand; Norway; Poland; Portugal; Slovakia; South Korea; Spain; Sweden; Switzerland; Turkey; UK; USA.

	relating to testing, or potential barriers and facilitators of accessing testing services. Study methods include surveys, interviews, case studies, or ethnographic or action research. Both qualitative and quantitative views data should be included here. Views relating to general sexual health services will be included only if there is explicit mention that HIV testing is part of the service.)		
6.	Does the study include MSM who are HIV-negative or do not know their HIV status, and are competent to consent to an HIV test?	YES – go to Q7	UNCLEAR/NO – exclude
7.	Does the study relate to an intervention which aims to increase the uptake of HIV testing? (This may include, for example: media campaigns; individual advice and information from clinicians, health promotion practitioners or others; changes to service delivery or accessibility to reduce barriers to testing (including offering different methods of testing); or educational interventions to reduce the stigma associated with testing. 'Testing' includes any testing, either public- or provider-initiated, and whether or not accompanied by counselling. Multi-component interventions will be included if they explicitly include a component designed to increase the uptake of testing.)	YES– go to Q8	NO – exclude
8.	Is the study a controlled intervention study (an RCT, a non-randomized controlled trial, or a controlled observational before-and-after study), or a systematic review including such studies?	YES, PRIMARY STUDY – include in effectiveness review and go to Q9 YES, SYSTEMATIC REVIEW[11] – retain for reference scanning	NO – go to Q9

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[10] A systematic review is defined as one which clearly reports both its search strategies and inclusion criteria.
[11] A systematic review is defined as one which clearly reports both its search strategies and inclusion criteria.

9.	Is the study a cost-benefit or cost-effectiveness analysis, or any other type of economic evaluation, or a systematic review including such studies?	YES, PRIMARY STUDY – include in effectiveness review and go to Q9 YES, SYSTEMATIC REVIEW – retain for reference scanning	NO – go to Q10
10.	Is the study a non-controlled (one-group before-after) prospective intervention study which presents outcome data for both pre-intervention and post-intervention time points?	YES– include	NO – exclude

10.0 Appendix C. Evidence tables

10.1 Effectiveness studies

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Chiasson et al. **Year:** 2009 **Citation:** Chiasson, M.A. et al., 2009. Increased HIV disclosure three months after an online video intervention for men who have sex with men (MSM). *AIDS Care*, 21(9), 1081–1089. **Aim of study:**	**Source population/s:** MSM in the USA **Eligible population:** Recruited through a banner advert on a gay sexual meeting site **Selected population:** MSM; 18 years or older; resident in USA. **Excluded population:** None **Sample characteristics:** Age: 22% 18-29, 36% 30-39, 42% 40+. Ethnicity: 72% White, 6% Black, 14% Hispanic, 5% Asian/other, 2% 'multi-race'. Education: 49% no college, 51% college degree or higher. Sexual orientation: 91% homosexual, 9% bisexual; 51% had had 100 or less lifetime sexual partners; 49% had had more than	**Method of allocation:** NA **Intervention/s description:** Nine-minute video drama designed to promote critical thinking about HIV risk. **Control/comparison /s description:** NA **Sample sizes:** **Total** n= 3052 **Intervention** n= 3052 **Control** NA **Baseline comparisons:** NA	**Primary outcomes:** HIV status disclosure; UAI, casual partners, alcohol use before sex, multiple simultaneous partners, self-reported HIV testing. **Secondary outcomes:** HIV status **Follow up periods:** 3 months	**Primary outcomes:** HIV testing. 14% Yes before and after; 44% No before and after; 30% No before, Yes after; 12% Yes before, No after. OR 1.45 (CI 1.02-2.07), p=0.03 (McNemar test). **Secondary outcomes:** 14% of men tested during follow-up reported being HIV+ **Attrition details:** 11451 clicked on advert; 3052 consented to participate; 1003 provided baseline data and e-mail address (of which 971 provided an address which worked at 3-month follow-up). Of these 971, 522 responded (46% attrition). Analysis based on participants reporting any sex at baseline and follow-up (N=442). Dropouts were	**Limitations identified by author:** No control group so cannot determine if changes in behaviour were due to intervention. Selection bias in recruitment and retention. Men who viewed the video may have already decided to change behaviour before the intervention. Self-reported outcomes may not be reliable. **Limitations identified by review team:** None to add to authors' own **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** H van Ameringen

To evaluate an online HIV risk reduction intervention for MSM **Study design:** Before-and-after **Quality Score:** + **External validity:** –	100; 30% had not had anal sex with a new/casual partner. 34% had had protected anal sex, 36% had had UAI; 82% had 1 partner in the last sex encounter, 18% had more than 1; 25% had used drugs before/during last sex, 75% had not; 27% had used alcohol before/during las sex, 73% had not. 6% never tested for HIV.	**Study sufficiently powered?** NR		similar on most variables except: more likely to be Black, have less education, never had an HIV test, and have fewer lifetime male partners.	Foundation, New York Community Trust, The Shelley and Donald Rubin Foundation, Public Health Solutions and New York University.

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Dukers-Muijrers et al. **Year:** 2009 **Citation:** Dukers-Muijrers, N.H.T.M. et al., 2009. Effectiveness of an opting-out strategy for HIV testing: evaluation of 4 years of standard HIV testing in a STI clinic. *Sexually Transmitted Infections,* 85(3), 226-230. **Aim of study:** To evaluate the effectiveness of an opting-out approach to HIV testing **Study design:** Before-and-after **Quality Score:** – **External validity:** –	**Source population/s:** General population in the Netherlands **Eligible population:** Patients of Public Health Service of South Limburg's STI clinic **Selected population:** All non-HIV-positive clients **Excluded population:** HIV-positive clients **Sample characteristics:** 12,949 consultations were recorded: 52.9% women, 38.4% heterosexual men, and 8.7% MSM. 34% of consultations were made by attendees aged 30 years or older and 11.7% by non-Dutch attendees—mostly (44%) Belgian or German [for whole sample – NR for MSM subgroup] .	**Method of allocation:** NA **Intervention/s description:** Opt-out HIV testing **Control/comparison/s description:** NA **Sample sizes:** **Total** n=1,126 across whole study period [MSM figure inferred from percentage] **Intervention** n=1,126 **Control** NA **Baseline comparisons:** NA **Study sufficiently powered?** NR	**Primary outcomes:** HIV test uptake and refusal; HIV prevalence **Secondary outcomes:** None **Follow up periods:** 3 years	**Primary outcomes:** HIV test uptake: NR for MSM HIV test refusal: 16% at baseline; 10% in 2004; 6% in 2005 and 2006; 4% in 2007 [inferred from graph fig. 1] and 2.1% over Jul-Dec 2007 (opt-out testing introduced in 2004). For MSM, effect size was 0.77 (95% CI 0.62 to 0.96) [this appears to be comparing 2003 to 2004-2007 inclusive, but this is not fully clear]. Over-30-year-old MSM more likely to opt out (OR 2.34, 95% CI 1.29 - 4.22); those with STI-related symptoms more likely to opt out (OR 4.03, 95% CI 2.35 - 6.92). MSM were significantly more likely to opt out than heterosexuals ($p=0.076$; authors regard $p<0.10$ as sig.	**Limitations identified by author:** Retrospective exploratory study; limited capacity to explore reasons for not testing in detail. **Limitations identified by review team:** Non-comparative study. Data for MSM are not consistently disaggregated. Results are not consistently tested for significance. **Evidence gaps and/or recommendations for future research:** "Strategies to further improve test uptake in older MSM and other clinic attendees who may be linked to higher HIV/STI risk should be explored." **Source of funding:** Dutch AIDS Fund

				for interaction tests). HIV prevalence: No statistically significant time-trends in HIV prevalence were present [presumably this was the case for the MSM subgroup as well, but this is not entirely clear]. **Secondary outcomes:** None **Attrition details:** NA	

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Elford et al. **Year:** 2000 **Citation:** Elford, J., Bolding, G. & Sherr, L., 2001. Peer education has no significant impact on HIV risk behaviours among gay men in London. *AIDS*, 15(4), 535 - 538. **Aim of study:** To evaluate a peer education intervention for HIV risk reduction **Study**	**Source population/s:** MSM in London **Eligible population:** Peer educators were recruited by managers of intervention gyms. Those who accepted received one-day training. **Selected population:** For peer educators, criteria included being well-known, good communicators and belonging to a clique or group. NR for participants (recruitees). **Excluded population:** None **Sample characteristics:** Respondents: Median 33 years old. 89% white, 88% employed, 73% university-educated, 55% currently in a relationship, 27% had never tested, 10% had tested less than 3 months ago, 18% had tested 4-12 months ago, 45% had tested over a year ago	**Method of allocation:** NR **Intervention/s description:** Peer educators were identified and trained. They were asked to talk to at least 20 gay men over the next 5 months about risk reduction. They were identifiable by the programme's T-shirt or stickers. **Control/comparison/s description:** No intervention **Sample sizes:** **Total** n= 1004 **Intervention** n= 889 **Control** n= 115 **Baseline comparisons:** NR **Study sufficiently powered?**	**Primary outcomes:** Status-unknown UAI (last 3 mo); self-reported ever tested for HIV; injecting steroids; needle sharing (last 6 mo). **Secondary outcomes:** HIV status **Follow up periods:** 18 months	**Primary outcomes:** 144 men identified as potential peer educators; 46 received training and 27 remained to end of intvn period. Effectiveness outcomes [staged implementation so different Ns at different time points; analyses at 6, 12, 18 months; where significance found, analysis repeated excluding individuals present in previous samples]. Ever tested for HIV. 0-6 months. Intvn 76% baseline, 78% at 6 months; control 70% baseline, 71% at 6 months (p=0.5). 0-12 months. Intvn 72% baseline, 77% at 12 months; control 76% at baseline, 81% at 12 months (p=0.9). 0-18 months. Intvn 72% baseline, 78% at 18 months. Control 78% at baseline, 87% at 18 months (p=0.6). No significant differences between intervention and control. 3% of MSM in the targeted population reported having talked to a peer educator.	**Limitations identified by author:** NR **Limitations identified by review team:** Considerable unclarity in reporting of outcome data. Non-randomised allocation. Ever tested for HIV (rather than recent) may be less appropriate outcome measure. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** NR

design: nRCT **Quality Score:** – **External validity:** –		Yes		**Secondary outcomes:** HIV status not measured at baseline. Between 14% and 17% HIV-positive (self-reported) across groups at subsequent time points. **Attrition details:** 28.3% over 18 months	

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Flowers et al. **Year:** 2002 **Citation:** Flowers, P. et al., 2002. Does bar-based, peer-led sexual health promotion have a community-level effect amongst gay men in Scotland? *International Journal of STD & AIDS*, 13(2), 102 - 108. **Aim of study:** To evaluate the effectiveness of a bar-based, peer-	**Source population/s:** Gay men in Scotland **Eligible population:** 5 "exclusively gay" bars in Glasgow and Edinburgh were sampled, and all men present or entering the bars within given time periods were approached. **Selected population:** All men present or entering the selected bars **Excluded population:** None **Sample characteristics:** Mean age=31.7 years; 87% social class I-III; 40% educated to at least degree level; 73% recruited in their city of residence; 86% visited their "home scene" at least twice a month	**Method of allocation:** Not researcher-allocated. Glasgow was the intervention city and Edinburgh the control city. **Intervention/s description:** The Gay Men's Task Force intervention consisted of 3 elements: peer-led sexual health promotion conducted on the commercial gay scene; gay-specific GUM services in both hospital and gay community settings; and a free-phone hotline providing sexual health information. The intervention was delivered during 9 months (October 1997 to June 1998) by 42 peer educators, who received 2 days of training and support throughout the	**Primary outcomes:** Hepatitis B vaccination; HIV testing (ever); UAI casual; Negotiated safety; Knowledge of HIV status; knowledge of partner's HIV status (all self-reported). Data were also analysed for the sub-sample of men in Glasgow who reported having spoken to a peer educator (n=424) **Secondary outcomes:** None **Follow up periods:** 7 months	**Primary outcomes:** HIV testing. Glasgow 47.0% 1996, 47.9% 1999 (contact subsample 52.7%); Edinburgh 55.1% 1996, 52.8% 1999. All sample location/time intervention effects: No significant effect of intervention on HIV testing: OR (95% CI) 1.14 (0.90-1.44), p=0.2721. Direct contact sub-group location/time intervention effects: Significant effects on HIV testing: OR 1.38 (1.04-1.84), p=0.0243 **Secondary outcomes:** None **Attrition details:** NA (different samples at pre-test and post-test)	**Limitations identified by author:** NR **Limitations identified by review team:** No researcher-allocated comparison group. Use of ever testing as an outcome makes it difficult to isolate intervention effect. Analysis comparing Glasgow contact subgroup to whole Edinburgh sample is highly subject to confounding. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** UK Medical Research Council

led community-level intervention to promote sexual health among gay men **Study design:** nRCT **Quality Score:** + **External validity:** +		intervention. Training involved communication skills, role play and message delivery. The article focuses on the effectiveness of the peer-led intervention. **Control/comparison/s description:** Usual services **Sample sizes:** **Total** n= 4647 **Intervention** n= 2610 **Control** n= 2037 **Baseline comparisons:** No significant differences in participants' ages or frequency of bar use. Lower proportion of men from non-manual social classes in intervention group. Men in control group were significantly more likely to report having been vaccinated against hepatitis B and tested for HIV.			

		Study sufficiently powered? Yes. Power calculations based on Kelly et al.'s results.			

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Galvan et al. **Year:** 2006 **Citation:** Galvan, F.H. et al., 2006. Increasing HIV testing among Latinos by bundling HIV testing with other tests. *Journal of Urban Health*, 83(5), 849–859. **Aim of study:** To examine whether offering HIV testing with screening for other conditions would increase HIV	**Source population/s:** Latino MSM in Los Angeles County, USA **Eligible population:** Randomly chosen (every second or third person entering) in bars "known to be popular among Latino MSM" **Selected population:** Latino; over 21 years; capacity to provide informed consent; HIV risk behaviors (unprotected sex, or shared needles, with status-unknown or HIV+ partner in last 12 months). NB. Use of risk behaviours as inclusion criterion is not fully clear. **Excluded population:** None **Sample characteristics:** [For men agreeing to test, not total eligible population.] Approx. 65% under 31; 37% born in US, 44% in Mexico; 70% between 10,000 and 50,000$ annual income; 2%	**Method of allocation:** Pseudo-random: protocols were offered on alternate weeks on matched nights. **Intervention/s description:** Participants were offered a number of tests including HIV test (bundled protocol): OraQuick Rapid HIV-1 Antibody Test; Rapid Alcohol Problems Screen 4; Texas Christian University Drug Screen II; Center for Epidemiologic Studies Depression Scale; syphilis, gonorrhea and chlamydia tests. Comparison group were offered HIV test alone. Intervention took place in 3 bars in LA County (2 urban, 1 suburban). **Control/comparison/s description:**	**Primary outcomes:** Uptake of testing **Secondary outcomes:** HIV status **Follow up periods:** Immediate	**Primary outcomes:** 1427 participants were offered bundled tests: 1281 (89.8%) declined the HIV component and 146 (10.2%) accepted it. 2218 were offered an HIV test, of whom 2021 (91.1%) declined it and 197 (8.9%) accepted it. The difference is not significant (p=0.173). Logistic regression: participants who reported primarily having women as sexual partners more likely to be tested if offered the bundled test than the HIV-only test (OR 5.46, CI 1.75-17.0). Those reporting a risk factor (viz. homeless or in temporary housing; sex while intoxicated in last month; STD in last 12 months; exchanging sex for food, money or shelter in last 12 months; or crack, cocaine or methamph-etamine use in last 12 months) near-sig more likely to take bundled test (OR 1.44, CI 0.93-2.22). Urban gay-identified site	**Limitations identified by author:** Sample is subject to self-selection bias due to study design. Low participation rate. Bars not chosen randomly. Study design did not allow for gathering data about non-participants. Short intervention time increased participation but limited richness of data. **Limitations identified by review team:** None except those identified by authors **Evidence gaps and/or recommendations for future research:** Further research can help to identify benefits and challenges of bundled testing for other populations **Source of funding:** Universitywide AIDS Research Program of

testing among Latino men who frequent gay bars **Study design:** nRCT **Quality Score:** + **External validity:** +	heterosexual, 28% bisexual, 69% gay. Number of sexual partners in previous year: none, 1.0%; 1-5, 60.4%; 6-10, 19.6%; 11-20, 9.4%; 21-60, 8.1%; 100-300, 1.3%; >300, 0.3%. Gender of sexual partners in previous year: primarily men 80.8%; primarily women 4.9%; equally men and women 14.4%. Penetrative UAI in previous year: 60.2%. Receptive UAI in previous year: 38.1%. Risk factors (any of: homelessness, sex while intoxicated, STD in previous year; sex for money in previous 3 months; crack, cocaine or meth use in previous 3 months): 56.9%.	Participants were offered an HIV-only testing protocol. Comparison took place in the same 3 bars in LA County, on alternate weeks **Sample sizes:** **Total** n= 394 **Intervention** n= 197 **Control** n=197 **Baseline comparisons:** NR **Study sufficiently powered?** NR		less likely to take bundled test than those in suburban non-gay-identified site (OR 0.37, CI 0.19-0.74). **Secondary outcomes:** 3.4% of those who took the bundled tests were HIV-positive vs. 5.1% among HIV-only protocol (p=0.596). Of the 15 HIV-positives in total, 10 in suburban site and 5 in intermediate site. **Attrition details:** NA (outcome measures immediately after intervention).	the University of California; NIHM

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Guy et al. **Year:** 2009 **Citation:** Guy, R. et al., 2009. No increase in HIV or sexually transmissible infection testing following a social marketing campaign among men who have sex with men. *Journal of Epidemiology and Community Health*, 63(5), 391-396. **Aim of study:** To evaluate the	**Source population/s:** MSM in Victoria, Australia **Eligible population:** Records of MSM testing in 3 primary care sentinel clinics; Laboratory records of MSM testing in 4 medical clinics; participants in the Melbourne Gay Community Periodic Survey **Selected population:** All MSM **Excluded population:** None **Sample characteristics:** Only reported for the sentinel clinics sample: median age 36; 77% born in Australia, 8% from culturally and linguistic diverse backgrounds; 40% reported having tested during the last year.	**Method of allocation:** NA **Intervention/s description:** "Check-It-Out" social marketing campaign: A4-sized posters; takeaway cards; advertisements in gay and lesbian publications and radio programmes; website providing information about HIV and STIs and testing. Separate campaigns with specific messages were developed for each MSM sub-group: young, gay community attached, non-gay community attached, and linguistically and culturally diverse. The campaign ran over between 6 weeks (non community attached, young, and culturally diverse background) and 5 months (community attached	**Primary outcomes:** HIV testing; chlamydia, gonorrhoea, syphilis tests **Secondary outcomes:** None **Follow up periods:** 17 months (sentinel clinics); 12 months (laboratory data); 3 years (survey)	**Primary outcomes:** Sentinel clinics: No statistically significant change in the number of HIV tests conducted per month during or after the campaign (total pre-campaign: 1803; total post-campaign: 1634). Laboratory data (non MSM specific, but clinics had high proportion of MSM clients): no significant difference in average monthly tests for HIV among males in the campaign, pre-campaign or post-campaign periods (877, 846, 819, p=0.26). Survey data: 2004 60.3% blood tested for HIV in last year, 2005 61.5%, 2006 61.9% (p=0.34) **Secondary outcomes:** None **Attrition details:** NA (different samples at pre-test and post-test)	**Limitations identified by author:** Campaign reach (recognition) was not assessed. Laboratory data did not distinguish MSM from other males. Survey was based on self-reported behaviour. **Limitations identified by review team:** Non-comparative design. Different data sources refer to different populations and outcomes. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** The Victorian Department of Human Service

effectiveness of a social marketing campaign to increase HIV and STI testing among MSM **Study design:** Before and after **Quality Score:** – **External validity:** +		MSMs). Campaign budget was A$130,000. **Control/comparison/s description:** **NA** **Sample sizes:** **Total** n= 18333 **Intervention** n= 18333 **Control** NA **Baseline comparisons:** NA **Study sufficiently powered?** NR			

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Heijman et al. **Year:** 2009 **Citation:** Heijman, R.L.J. et al., 2009. Opting out increases HIV testing in a large sexually transmitted infections outpatient clinic. *Sexually Transmitted Infections*, 85(4), 249-255. **Aim of study:** To study the effect of an opting-out strategy on the uptake of HIV testing **Study design:** Before-and-after **Quality Score:** + **External validity:** +	**Source population/s:** General population in the Netherlands **Eligible population:** Patients of Amsterdam's Health Service's STI outpatient clinic. **Selected population:** All new consultations **Excluded population:** HIV-positive [NB: some data on HIV-positive patients available, but not extracted] **Sample characteristics:** [NB: data only extracted for non-HIV-positive MSM] Age: 28% under 29; 34% between 30-39; 25% between 40-49; 12% 50 or over. Ethnicity: 72% Dutch Risk behaviour: 53% had no anal sex or anal sex with condom; 24%	**Method of allocation:** NA **Intervention/s description:** Opt-out HIV testing system (i.e. all visitors are tested unless they decline). High-risk individuals (incl. all MSM) given rapid HIV test (results in 30-45 mins) and counselling. **Control/comparison/s description:** NA **Sample sizes:** **Total** n=3,887 new consultations [NB: only figures MSM with previous negative or unknown status extracted]	**Primary outcomes:** HIV test uptake and refusal; HIV prevalence **Secondary outcomes:** None **Follow up periods:** 11 months	**Primary outcomes:** HIV test uptake: 62% at baseline (2006), 88% in 2007 (82% in January, 93% in December – opt-out testing introduced Jan 2007). Profile of those refusing: older MSM opted out 2.6-4.1 times more often than MSM <30 (OR 2.52, 95%CI 1.86-3.42 for 30-39-year-olds compared to under-30s, OR 4.10, 95%CI 3.02-5.55 for 40-49-year-olds, OR 2.60, 95%CI 1.80-3.77 for 50-year-olds and older). Those never tested opted out more often than those tested before (OR 3.27, 95%CI 2.65-4.05). MSM with STI-related complaints (OR 2.08, 95%CI 1.68-2.57), warning of STI exposure by a sexual partner (OR 1.85, 95%CI 1.39-2.45), or diagnosed with gonorrhea (OR 1.76, 95%CI 1.29-2.41), infectious syphilis (OR 1.73, 95%CI 1.02-2.93), or non-specific proctitis (NSP) (OR 1.64, 95%CI 1.04-2.57) were also more inclined to refuse HIV testing. Bisexual MSM were less likely to opt out than exclusively homosexual MSM (OR 0.41, 95%CI 0.27-0.60).	**Limitations identified by author:** NR **Limitations identified by review team:** Non-comparative study. Sample may not be representative of broader MSM population. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** NR

	UAI with casual partner only; 18% UAI with steady partner only; 4% UAU with casual and steady partners.	**Intervention** n=3,887 new consultations **Control** NA **Baseline comparisons:** NA **Study sufficiently powered?** NR		MSM who reported UAI opted out less often than those reporting no risky intercourse. HIV prevalence: 3.7% at baseline; 3.4% in 2007 (p=0.47). **Secondary outcomes:** NA **Attrition details:** NA	

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: McOwan et al. **Year:** 2002 **Citation:** McOwan, A., et al., 2002. Can targeted HIV testing campaigns alter health-seeking behaviour? *AIDS Care*, 14(3), 385-390. **Aim of study:** To evaluate a multimedia HIV testing campaign **Study design:** Before-and-after [comparison data is presented but	**Source population/s:** MSM in London (particularly young MSM and those of Black or Southern European ethnic origin) **Eligible population:** Records of men reporting sex with men testing for HIV in STI screening clinics **Selected population:** All men who undertook HIV testing at clinic and reported sex with men **Excluded population:** NR **Sample characteristics:** Ethnicity: 12.6% 'south European' origin; 4.2% Black origin. Age: 17.6% under 25.	**Method of allocation:** Not researcher allocated **Intervention/s description:** An advert was included in a free paper, posters and leaflets distributed to "gay-friendly venues across the London area" by community gay men's venue outreach teams. The advert contained a peer image with accompanying text. The text covered key areas of a pre-test discussion and provided details of HIV testing services at the campaign clinic. The materials were distributed once per week for 12 weeks. **Control/comparison/s description:** NA **Sample sizes:**	**Primary outcomes:** HIV testing (NB. Study only reports total numbers taking the test, not proportion of uptake) **Secondary outcomes:** Taking HIV test in response to an advert, poster or leaflet (self-reported) **Follow up periods:** 12 weeks after start of intervention (0 weeks after end of intvn)	**Primary outcomes:** n=65 pre test (March-May 1999); n=292 post test (March-May 2000): p<0.001. Southern European 3 pre, 42 post (p<0.001); Black 2 pre, 13 post (p=0.003); aged under 25 6 pre, 57 post (p<0.001). **Secondary outcomes:** n=1 of 65 pre test; n=162 of 292 post test (p<0.001). **Attrition details:** NA (different samples at pre-test and post-test)	**Limitations identified by author:** Not clear to what extent uptake by minority ethnic groups was driven by content of intervention. **Limitations identified by review team:** Study only reports numbers testing in given clinic and not proportion of uptake. Although a 'comparison' group is presented, they did not receive a different intervention to the intervention group (in addition, authors do not test for significance between groups). Hence, the study has been treated as one-group. Issues with reliability of data on secondary outcomes. **Evidence gaps and/or recommendations for future research:** NR

cannot be utilised] **Quality Score:** – **External validity:** –		**Total** n= 357 (total including pre and post test) **Intervention** n= 357 **Control** NA **Baseline comparisons:** NA **Study sufficiently powered?** NR			**Source of funding:** Glaxo Wellcome HIV Care

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Ryder et al. **Year:** 2005 **Citation:** Ryder, N., Bourne, C. & Rohrsheim, R., 2005. Clinical audit: adherence to sexually transmitted infection screening guidelines for men who have sex with men. *International Journal of STD & AIDS*, 16(6), 446 - 449. **Aim of study:** To conduct a clinical audit of adherence to and impact	**Source population/s:** MSM in Sydney **Eligible population:** Record review of men attending an STI clinic. Random sample of 25% of eligible records. **Selected population:** First visits by men who had at least one male sexual partner in previous year **Excluded population:** None **Sample characteristics:** Median age: 33 at pre-test, 32 at post-test. HIV status: 5% positive at pre -test, 12% at post-test. Median number partners since last visit (or last 12 months for new clients): 3 (range 0-300) pre test, 4 (range 0-600).	**Method of allocation:** NA **Intervention/s description:** Implementation of guidelines recommending at least annual screening of MSM for HIV and other STIs **Control/comparison/s description:** NA **Sample sizes:** **Total** n= 559 **Intervention** n= 559 **Control** NA **Baseline comparisons:** NA **Study sufficiently powered?** NR	**Primary outcomes:** HIV screening; reasons for not screening **Secondary outcomes:** HIV status **Follow up periods:** Unclear (intervention implemented "during 2002", post test at some point in 2002)	**Primary outcomes:** HIV screening. Pre-test (2000): 73% of men screened for HIV. Post-test (2002): 88% of men screened for HIV. This not tested for significance. (Asymptomatic clients more likely: 79% vs. 62% in 2000, 92% vs. 81% in 2002; p<0.05) Reasons for not screening. 2000: 8% declined, 9% deferred, 4% low risk, 3% other, 3% no reason. 2002: 88% screened, 7% declined, 1% deferred, 1% low risk, 1% other, 2% no reason. **Secondary outcomes:** 2000: 12 HIV+; 2002: 39 HIV+ (p<0.05) **Attrition details:** NA (different samples at pre-test and post-test)	**Limitations identified by author:** Data regarding reasons for not screening is clinician report and so may not be reliable. **Limitations identified by review team:** Non-comparative study (with different samples at two time points). It is unclear how guideline implementation may have affected behaviour, or the content or status of the guideline. Little data on sample demographics. **Evidence gaps and/or recommendations for future research:** Further investigation of HIV-positive clients is required to understand their barriers to screening for other STIs. **Source of funding:** NR

of new STI testing guidelines **Study design:** Before-and-after **Quality Score:** – **External validity:** –					

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Spielberg et al. **Year:** 2005 **Citation:** Spielberg, F. et al., 2005. Choosing HIV counseling and testing strategies for outreach settings: a randomized trial. *Journal of Acquired Immune Deficiency Syndromes*, 38(3), 348 - 355. **Aim of study:** To compare 4 strategies of HIV testing and counselling at a needle	**Source population/s:** Persons at risk of HIV infection **Eligible population:** Free testing offered to each client entering the venues by a member of staff **Selected population:** English-speaking, 14 years or older, HIV-negative or unknown, not having been tested for HIV in the last 3 months **Excluded population:** None **Sample characteristics:** Of eligible population (estimated): 22% in 20s or younger; 80% white, 6% black. Of those agreeing to participate: 100% male; 44% 40 or older; 82% white; 57% at least college degree; 8% never tested for HIV, 36% had had their last HIV test less than 6 months ago, 56%, more than 6	**Method of allocation:** Randomised by 4-hour testing shifts **Intervention/s description:** All interventions offered in gay bathhouses [data from needle exchange is not extracted here]. (1) Traditional serum testing with venipuncture and a return visit to receive results, with standard face-to-face counselling before testing; (2) rapid serum testing (venipuncture and testing with the Single Use Diagnostic System for HIV-1) with same-day test results and single-session counselling, (3) oral fluid testing (OraSure) with standard counseling; (4) traditional serum testing with the choice of pretest written	**Primary outcomes:** Acceptance of testing; completion of testing; receipt of test results **Secondary outcomes:** HIV status **Follow up periods:** None (immediate)	**Primary outcomes:** Acceptance of testing: Group 1) 142/896; Group 2) 135/636; Group 3) 161/705; Group 4) 123/903. Completion of testing: Group 1) 111/896; Group 2) 103/636; Group 3) 122/705; Group 4) 101/903. Receipt of test results: Group 1) 82/896; Group 2) 102/636; Group 3) 88/705; Group 4) 76/903. Group (1) and (4) not sig different on any outcome. Group (2) sig higher than (1) for acceptance ($p<0.01$), completion ($p<0.05$) and receipt ($p<0.001$); group (3) sig higher than (1) for acceptance ($p<0.001$), completion ($p<0.01$) and receipt ($p<0.001$). No sig diffs between (2) and (3). G1) 754/896 refused testing; 31/142 did not complete testing; 29 did not receive results. G2) 501/636 refused testing; 32/135 did not complete testing; 1 did not receive results. G3) 544/705 refused testing; 39/161 did	**Limitations identified by author:** 92% had already been tested, so data may not be generalizable to populations with less testing experience; more simple and rapid tests would have decreased waiting times and possibly increased uptake. **Limitations identified by review team:** Low response rates and unclear how non-participants may differ from participants. Context of recruitment may limit generalisability. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** University of Washington Cennter for AIDS; Centers for

exchange and 2 bathhouses to determine effectiveness **Study design:** RCT **Quality Score:** ++ **External validity:** +	months ago; 74% 4 or more sex partners in the last year, 7% 1 or less, 25% had had unprotected anal/vaginal sex in the past 2 months. (For eligible population: 80% white (estimated); 22% under 30 years (estimated); 6% never tested.)	materials or standard counselling **Control/comparison/s description:** Study compares 4 interventions, though one of them can be considered usual treatment (arm 1). **Sample sizes:** **Total** n= 3140 **Intervention** n=896 (arm 1); n=636 (arm 2); n=705 (arm 3); n=903 (arm 4) **Control** NA **Baseline comparisons:** NR (except authors state that black people were more likely to decline testing than white people) **Study sufficiently powered?** Yes (power=0.8, a=0.05)		not complete testing; 34 did not receive results. G4) 780/903 refused testing; 22/123 did not complete testing; 25 did not receive results. Completion of testing correlated well with shorter estimated waiting times (88% with no wait, 91% with a waiting time up to 15 minutes, and 55% with a waiting time of 2 hours; r=0.58, p<0.01). In arm 4, 81% chose written materials rather than face-to-face counselling. In arms 1,2,4, 93% chose to receive results by telephone rather than in person. Across all sites black people less likely to accept testing than white people. **Secondary outcomes:** At the bathhouses, all 3 clients with positive rapid test results returned for their confirmatory test results (by Western blot analysis, 2 were confirmed to be HIV-positive and 1 was HIV-negative). Of the 13 HIVpositive persons tested at the bathhouses with nonrapid alternatives, 4 received their test results.	Disease Control and Prevention; National Institute for Drug Abuse

				Attrition details: NA (outcome measures immediately after intervention).	

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Spielberg et al. **Year:** 2000 **Citation:** Spielberg, F., et al., 2000. Home collection for frequent HIV testing: acceptability of oral fluids, dried blood spots and telephone results. *AIDS*, 14(12), 1819 - 1827. **Aim of study:** To assess the feasability and acceptability of bimonthly home oral fluid and dried blood spot collection for	**Source population/s:** Populations at high risk of HIV infection: MSM, IDU, and women at heterosexual risk as a result of multiple partners or HIV-positive sex partners **Eligible population:** The HIV Network for Prevention Trials Vaccine Preparedness Study (VPS) Cohort. Stratified random selection of MSM participants from 2 cities (Denver, San Francisco). Up to $60 of incentives offered to participants **Selected population:** none: representative of the VPS cohort **Excluded population:** NR **Sample characteristics:** Mean age=36; 58% MSM; 17% did no complete high school; 35% unemployed; 65% white; 65% had had unprotected sex or shared a	**Method of allocation:** Random **Intervention/s description:** Intervention 1: dried blood spot (DBS) home collection for HIV testing, 3 cycles, bimonthly. Intervention 2: Oral fluid (OF) home collection for HIV testing, 3 cycles, bimonthly. **Control/comparison/s description:** Study compares 2 interventions **Sample sizes:** **Total** n= 241 **Intervention** n= 120 (OF), 121 (DBS) **Control** n=0 **Baseline comparisons:** Data provided, but no significance tests carried out	**Primary outcomes:** Adherence to the home specimen collection schedule [this is the only outcome extracted here]; adequacy of specimen collection; acceptability **Secondary outcomes:** None **Follow up periods:** 20 weeks	**Primary outcomes:** Adherence [for MSM only]: Intervention 1 (DBS): 63/70 in cycle 1; 65/70 in cycle 2; 64/68 in cycle 3. Intervention 2 (OF): 68/70 in cycle 1; 70/70 in cycle 2; 68/69 in cycle 2. No significance tests for MSM subgroup. Across the sample as a whole, adherence was higher for OF than DBS (p=0.02). **Secondary outcomes:** None **Attrition details:** 6 participants in the DBS group and 1 in the OF group were late for their visit and completed only two cycles of home specimen collection. 110 of 120 participants in the OF arm and 101 of 121 in the DBS returned all expected specimens.	**Limitations identified by author:** Unable to evaluate results among individuals at risk outside the context of the research study **Limitations identified by review team:** Differences are not tested for MSM subgroup alone. The aim of study is to assess feasibility and acceptability rather than effectiveness as such. No usual-care or no-intervention control. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** HIVNET (NIAID, NIH Dep of Health and Human Services)

HIV testing among high-risk individuals **Study design:** RCT **Quality Score:** ++ **External validity:** +	needle in the last 6 months at month 12, 62% at month 18	**Study sufficiently powered?** NR			

Study Details	Population and setting	Method of allocation to intervention/control	Outcomes and methods of analysis:	Results	Notes
Authors: Wilton et al. **Year:** 2009 **Citation:** Wilton, L. et al., 2009. Efficacy of an HIV/STI prevention intervention for black men who have sex with men: findings from the manymen, manyvoices (3MV) Project. *AIDS and Behavior*, 13(3), 532–544. **Aim of study:** to evaluate the efficacy of an HIV/STI prevention intervention	**Source population/s:** Black MSM **Eligible population:** Active recruitment: street outreach, displays at NYC Black Pride gay festivals, referrals from friends of participants, community-based gatekeepers and POCC clients, and distribution of plam cards in nightclubs and other gay venues. Passive recruitment: ads in gay newspapers and magazines. **Selected population:** Two stage screening process: 1) Telephone screening; 2) face to face interview. Criteria: 1) self-identification as Black MSM, 18 or older, willing to attend and participate in an HIV/STI prevention intervention retreat delivered outside NYC, not having participated in the 3MV intervention before; 2) report HIV as negative or	**Method of allocation:** Randomised (by computer) **Intervention/s description:** Weekend retreat (2.5 days, 6x 2-3 hour sessions) in upstate New York. Led by two trained Black MSM peers (quality assessed by independent raters to ensure fidelity). Participants received free transport, lodging and meals. Intervention was conducted in a small group and focused on relationships, including power dynamics and negotiating skills, HIV risk, options for behaviour change, and racism and homophobia. Free transport, accommodation and meals were provided. Also cash incentives	**Primary outcomes:** Self-reported UAI and testing for HIV and other STIs; number of male sex partners, condom use **Secondary outcomes:** None **Follow up periods:** 3 and 6 months	**Primary outcomes:** HIV testing (self-report). Intervention 64/123 at 3 months, 69/126 at 6 months. Control 56/121 at 3 months, 58/134 at 6 months. 3 months not sig difference (OR 1.41 [0.83, 2.39]); 6 months sig difference (OR 1.81 [1.08, 3.01], p=0.023). Linear regression for study period as a whole: OR 1.33 [1.05, 1.68], p=0.016. **Secondary outcomes:** None **Attrition details:** 88.5% of participants returned for at least one follow-up assessment and were included in the main outcome analyses; 72.5% were retained at 3 months and 260 76.9% at 6 months. Compared to the 299 participants returning for at least one follow-up, the 39 lost to follow-up were less likely to self-identify as gay or homosexual or report having a main male sex	**Limitations identified by author:** Control group received no intervention during the course of the intervention (wait-list); time-matched attention controls would have been more rigorous. **Limitations identified by review team:** None in terms of study validity. The intervention is highly intensive and those who attended may have been more motivated to change behaviours. **Evidence gaps and/or recommendations for future research:** 3MV should also be rigorously evaluated when delivered over 6 weekly sessions. More formative or operational research should be conducted to inform changes to the 3MV intervention that will

for black MSM **Study design:** RCT **Quality Score:** ++ **External validity:** +	unknown, be willing to attend the intervention without their primary partner or boyfriend, be willing to discuss male-to-male sexual behaviour in a group setting, reside in NYC, and have no plans to relocate in 6 months **Excluded population:** None **Sample characteristics:** 99.1% self-identified as male; mean age 29.6; 67.6% African American, 16.7% Caribbean/West Indian, 11.3% Afro-Latino, 1.5% African, 3% mixed; 46.4% income < $20,000 p.a.; 41.7% attended college, 29.9% college degree, 21.6% high school degree or GED, 6.8% had dropped out of high school; 78.1% self-identified as gay or homosexual; 18.3% bisexual; 1.2% heterosexual or straight; 2.4% were unsure; 51.2% reported both insertive and receptive anal sex; 26.3% insertive only; 17.1% receptive only; 34% reported being in a relationship with a main	for completing follow-up data collection. **Control/comparison/s description:** 6 months wait-list control **Sample sizes:** **Total** n= 338 **Intervention** n= 164 **Control** n=174 **Baseline comparisons:** No significant differences between the two groups in sociodemographic characteristics, drug use, or sexual risk behaviours **Study sufficiently powered?** NR		partner, and more likely to report having sex with a woman. No differences in attrition were observed between study conditions at the 3- or 6-month assessments.	result in greater reductions in sex risk behaviors, particularly receptive UAI, and increased STI testing. For example, the extent to which the intervention focuses on the reduction of receptive UAI could be revisited and receive greater emphasis, and access to STI testing after the intervention could be facilitated through a collaboration with a clinical provider. Given the high HIV prevalence among Black MSM, future studies should adapt 3MV and rigorously evaluate its efficacy in reducing HIV transmission risk behaviors among HIV-positive Black MSM. Future 3MV evaluations should include biological markers of incident HIV and STIs. POCC staff noted that some participants that had attended a 3MV retreat together continued to meet on their own accord for ongoing support. Future studies

	male partner; 71.8% reported anal intercourse with a non-main male partner.				should examine the degree to which 3MV facilitates a sense of community among Black MSM, and whether these social networks help reinforce HIV/STI risk reduction. Finally, the effectiveness and generalizability of 3MV should be evaluated among diverse Black MSM populations, and in diverse delivery settings and geographic areas. **Source of funding:** Funding provided by Centers for Disease Control and Prevention to People of Color in Crisis

10.2 Economic evaluations

Study Details	Population and setting	Intervention/ comparator	Outcomes and methods of analysis:	Results	Notes
Authors: Golden et al. **Year:** 2006 **Citation:** Golden, M.R. et al., 2006. Peer referral for HIV case-finding among men who have sex with men. *AIDS*, 20(15), 1961-1968 **Aim of study:** To evaluate the effectiveness and cost-effectiveness of a health department-based peer referral programme for identifying previously undiagnosed cases of HIV among MSM **Type of economic analysis:** Cost-benefit	**Source population/s:** MSM in King County, Washington, USA **Setting:** Recruited through health services, advertising, outreach **Data sources:** Costs defined using the Centers for Medicare & Medicaid Services Schedule, and treatment costs from Public Health-Seattle & King County. Outcome data from observational non-comparative study. **Sample characteristics:** Not extracted here as figures in report are inconsistent	**Intervention/s description:** Potential peer recruiters were enrolled through a number of channels: persons with bacterial STIs receiving partner notification services through the Public Health Seattle & King County STD Program; Harborview Medical Center HIV Clinic patients; advertisements in local newspapers; snowball enrollment; and via outreach to three CBOs that serve MSM. Those who accepted underwent informed consent, were trained (40 min) and paid $20 for each peer they referred. Peers were offered counseling and serological testing for HIV, syphilis, and hepatitis A, B and C. Peers were paid $20 for being tested. Campaign ran from September 2002 to February 2004. **Comparator/control/s description:** NA	**Primary outcomes:** Costs per newly-identified infected person; cost per person receiving positive test result **Secondary outcomes:** HIV status **Time horizon:** NA **Modelling method:** NA	**Primary results:** 438 peers recruited and completed testing; 22 of these HIV positive. Total cost of programme $103752 (of HIV component alone $59142). Cost per newly-identified HIV-infected person=US$ 4929; cost per newly-identified person who received test results=US$5377. Sensitivity analysis: cost per person receiving positive result varies from $3076 to $21479 as prevalence varies from 7.8% to 1.1% **Secondary results:** Among 438 peers not previously diagnosed with HIV, 22 (5%) were HIV-positive, of whom 18 received their HIV test results (over the whole period reported). Of these 12 were identified during the study period and 11 received results.	**Limitations identified by author:** Results are limited to the context of research and not generalizable. Cannot tell whether persons identified through the intervention would have been identified otherwise. **Limitations identified by review team:** Underlying effectiveness data is not reliable (although adequate for the stated purposes of the study). No cost-effectiveness analysis or modelling is undertaken. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** Division of STD Prevention, National Center for HIV, STD and TB Prevention, Centers for Disease Control and Prevention

Economic perspective: Health service **Quality score** – **Applicability:** +		**Sample sizes:** **Total** n= 498 **Intervention** n= 3052 **Control** NA			

10.3 Qualitative studies

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Beardsell **Year:** 1999 **Citation:** Beardsell, S., 1999. Sexual risk taking and HIV testing: A qualitative investigation. In: Aggleton, P., Hart, G., & Davies, P., eds. *Families and Communities Responding to AIDS* (London: Routledge), pp. 185-195. **Quality Score:** +	**What was/were the research questions:** To study the relationship between HIV testing and behaviour change, focusing on why it does or does not take place. **What theoretical approach:** NR **How were the data collected:** - **What methods:** In-depth interviews - **By whom:** "Primarily by the author, although all potential respondents were given the option of a male interviewer" - **What setting(s):** NR - **When:** NR	**What population were the sample recruited from:** People who had been tested for HIV and were in London **How were they recruited:** Theoretical sampling. Recruitment: 1. Via HIV testing sites and statutory and voluntary services for people with HIV in London and home counties. 2. Via advertisements in the gay press, in local newspapers, magazines and in the Body Positive and Mainliners newsletters. 3. Via snowballing. **How many participants were recruited:** total n=91; gay/bisexual men n=28 **Were there specific exclusion criteria:** NS **Were there specific inclusion criteria:** Had HIV test in last 2 years	**Brief description of method and process of analysis:** Two researchers analysed the transcripts using a grounded theory approach. The focus was on identifying common themes across respondents rather than identifying differences on the basis of epidemiological or sociodemographic characteristics. **Key themes (with illustrative quotes if available) relevant to this review:** The relationship between risk and testing: Risk is often regarded as cumulative, where unprotected intercourse "is only deemed risky enough to test once it has occurred a critical number of times, or with a critical number of different partners". The relationship between testing and behaviour change is not direct: there is an element of fear of infecting others. "*When I knew for certain I was positive -and particularly having a sexual partner who was negative - I initially became a bit neurotic about keeping him protected... I was really, I suppose, quite scared and I think that affected my sexual performance to a degree by suddenly being very aware of my status and, you know, it almost became too clinical at one stage. It was... to the point where I almost thought that I should stop seeing him cause I was so afraid of transmitting the virus to him (Gay man, HIV +)"*. Unprotected sex following test: negotiated safety, test results were often taken so that couples could dispense with condoms, though concerns about the reliability of this strategy were raised: *"It's an enormously difficult problem. It goes on to endlessly because so much of it is based on what isn't seen and what isn't known or can't be scrutinized or understood fully."* (Gay man, HIV-).	**Limitations identified by author:** NR **Limitations identified by review team:** Theoretical sampling strategy is not described in detail. Its relationship with recruitment strategies is not discussed. Limitations for this review: analytical strategy makes it difficult to extract MSM data. **Evidence gaps and/or recommendations for future research:** Further research may be needed on how pre- and post- test counselling relates to risk perception, particularly since participants "did not believe these sessions had any impact on behaviour" **Source of funding:** Department of Health and North Thames (East)

				Regional Health Authority

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Dodge et al. **Year:** 2008 **Citation:** Dodge, B., Jeffries, W. & Sandfort, T., 2008. Beyond the down low: Sexual risk, protection, and disclosure among at-risk black men who have sex with both men and women (MSMW). *Archives of Sexual Behavior*, 37(5), 683-696. **Quality Score:** ++	**What was/were the research questions:** 1)"What are the perceptions of sexual risk reported by Black MSMW wiht both male and female partners?" 2) "What are the reported protective behaviours of Black MSMW with both male and female partners?" 3) "what are the reported risk behaviours of Black MSMW with both male and female partners? 4) What factors influence disclosure, or non-disclosure, of bisexuality to male and female partners among Black MSMW?" **What theoretical approach:** NR **How were the data collected:** - **What methods:** Semi-structured face to face In depth interviews , 90 minutes - **By whom:** First author - **What setting(s)**:	**What population were the sample recruited from:** Black young men who have sex with men and women (MSMW) **How were they recruited:** "targeted sampling techniques in social and sexual spaces where MSMW were found to congregate through previous ethnographic mapping." 55 individuals were screened by telephone. 30 were included. After in-depth interviews, respondents received 50USD **How many participants were recruited:** 30 **Were there specific exclusion criteria:** Men who had engaged in bisexual behaviour solely for money or drugs, who had injected drugs, and who had tested HIV-positive (although 2 participants disclosed a positive status after recent notification)	**Brief description of method and process of analysis:** Face-to-face one-to-one in-depth interviews. Systematic coding and analysis among investigators using NVivo (4 coders for the first 5, 2 for the following 25). Mapping of themes and thematic matrix. Following this, a scheme was developed for analysing all the narrative data. **Key themes (with illustrative quotes if available) relevant to this review:** 1) Testing: used by over half of respondents to know their own and partners' HIV statuses 2) Testing: commonly seen as protective behaviour (N=17; 57% resp): 2 types of serosorting: For half of respondents who took test: a) additional safety measure before engaging in sexual intercourse with new partners for the first time. **P:** That's my policy. No. ***I:*** *So, you get tested before?* ***P:*** *Before. We go take the test, half an hour or whatever, you know. We, we wait.* ***I:*** *So that's what you do to protect yourself?* ***P:*** *That's from the very beginning, you know. And if I continue to have sex with that individual, then, like, for us, every three months, you know*. b) Insurance: For the other half: used test results as "proof" of seronegativity with potential partners before engaging in sexual intercourse. Not always reciprocal though: partners don't always have "proof" themselves. *Interviewer:* **I:** Do they all have the papers? **P:** Hell no! *"So are there some guys who don't have the papers but you'll still let them fuck you?" Participant: "Yeah, yeah, I'll do it. I will, and then I'll be so paranoid, I'll go get like the 24 hour testing thing and they'll be like you have to come back. So, so far, so good. Yeah. But I keep numbers and emails because if something ever happens to me, I'm going to blow you up."*	**Limitations identified by author:** 1) sample selection: excluded "3 groups whose behaviours are vital in the distribution of HIV/STIs": a) those who consistently practice safer sex b) those who engage in bisexual sex solely in context of sex works and IDU c) HIV-positive people 2) participants' ages: 18-30 yo **Limitations identified by review team:** Description of sampling methods is not fully clear (Limitation for this review: little data on testing specifically) **Evidence gaps and/or recommendations for future research:** Research : focusing on MSMW who are HIV+ to understand their risk and protective practices. Comparison between such groups (HIV+ and - MSMW).

	NR - **When:** NR	**Were there specific inclusion criteria:** Self identified as Black, African-American and/or of other African descent; 18-30 years; sexual activity with at least one male and at least one female in last year; reported inconsistent use of condoms. New York city		**Source of funding:** HIV Center for Clinical and Behavioural Studies at the New York Statge Psychiatric Institute and Columbia University

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Flowers et al. **Year:** 2000 **Citation:** Flowers, P., Duncan, B. & Frankis, J., 2000. Community, responsibility and culpability: HIV risk-management amongst Scottish gay men. *Journal of Community and Applied Social Psychology*, 10(4), 285–300. **Quality Score:** ++	**What was/were the research questions:** 1) "How have new HIV health technologies (in particular HIV testing) impacted on the meaning of HIV risk and being HIV-positive, for men in the Scottish gay community?" 2) "What are the synergistic relationship between understandings of HIV risk-management and the social construction of gay communities?" (in other words: what impact has HIV antibody testing had on HIV risk management and on the social construction of gay communities) **What theoretical approach:** NR **How were the data collected:** - **What methods:** In-depth interviews and focus groups - **By whom:** Interviews: 15 conducted by one of two gay male researchers; 2 by gay	**What population were the sample recruited from:** Scottish MSM **How were they recruited:** Interviews: 13 from gay bars in Glasgow and Edinburgh; 5 through links with existing gay men's sexual health services providers. Participants were offered £10 in compensation. Focus groups: all participants were recruited from 4 community support groups representing distinct locations in Scotland: the Highland region (n=4); the West Coast (n=5); Glasgow (n=5); Edinburgh (n=5). Participants were also offered £10. Purposive sampling (diversity of backgrounds and testing histories). **How many participants were recruited:** 37 **Were there specific exclusion criteria:** NR	**Brief description of method and process of analysis:** Transcripts were analysed for recurring themes using Interpretive Phenomenological Analysis (IPA). NUD-IST was used for coding. "Repetitions of emerging themes across individual transcripts were taken as indicative of their status as recurring themes that reflected shared understandings." **Key themes (with illustrative quotes if available) relevant to this review:** One reason for avoiding testing (especially for MSM who suspect they could be positive, and when one believes that an unknown status equals an assumed negative status): avoid burden of social exclusion, and of responsibility. Positive men are perceived as uniquely posing a risk, and are considered responsible for risk exposure and when seroconversion occurs. This difference in responsibility between HIV+ and unknown/HIV- was particularly felt by HIV+ participants: they saw themselves as 'educators' and sometimes found it difficult to enjoy sex, especially when partners wanted to engage in unprotected anal sex. This difference is an additional burden when living with HIV. This burden can be avoided by not testing, notably when one believes that an unknown status equals an assumed negative status. One respondent reflected on the difference between being untested and knowing one is positive: *"I think you're on an equal basis with everyone else if you're untested, but if you've tested positive it definitely changes (HIV-positive man, FG)"*	**Limitations identified by author:** NR **Limitations identified by review team:** Unclear why one-to-one interview respondents only from two major cities (Glasgow and Edinburgh), whilst focus groups covered two additional areas; small urban sample for in-depth interviews may not represent the diversity of views from the wider gay community. Does not address potential issue of mixing data. Does not report if saturation was reached. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** Healthy Gay Scotland

	female researcher; 1 by straight female researcher. FG: one by 2 gay male researchers; the rest by 1 gay male researcher. - **What setting(s):** Interviews: Glasgow and Edinburgh. Comfortable and confidential on premises of gay men's sexual health service organisations - **When:** N/A	**Were there specific inclusion criteria:** NR		

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Flowers et al. **Year:** 2001 **Citation:** Flowers, P., Knussen, C. & Duncan, B., 2001. Re-appraising HIV testing among Scottish gay men: The impact of new HIV treatments. *Journal of Health Psychology*, 6(6), 665 - 678. **Quality Score:** ++	**What was/were the research questions:** “What is the impact of new treatments upon Scottish gay men and their understanding of, and participation in, HIV testing?” “Why do Scottish gay men both seek and avoid HIV testing, and in particular, what are the barriers to HIV testing withing the new era of medical optimism?” “How does HIV testing fit within the wider gay cultural response to the changing face of HIV management?” **What theoretical approach:** NR **How were the data collected:** - **What methods:** In-depth interviews and focus groups - **By whom:** Interviews: 15 conducted by one of two gay male researchers; 2 by gay female researcher; 1 by straight female researcher.	**What population were the sample recruited from:** Scottish MSM **How were they recruited:** Interviews: 13 from gay bars in Glasgow and Edinburgh; 5 through links with existing gay men's sexual health services providers. Participants were offered £10 in compensation for time given to study. Focus groups: all participants were recruited from 4 community support groups representing distinct locations in Scotland: the Highland region (n=4); the West Coast (n=5); Glasgow (n=5); Edinburgh (n=5). Participants were also offered £10. Purposive sampling (diversity of backgrounds and testing histories). **How many participants were recruited:** 37 **Were there specific exclusion criteria:** NR	**Brief description of method and process of analysis:** Transcripts were analysed for recurring themes using Interpretive Phenomenological Analysis (IPA). NUD-IST was used for coding of data. “Repetitions of emerging themes across individual transcripts were taken as indicative of their status as recurring themes that reflected shared understandings.” **Key themes (with illustrative quotes if available) relevant to this review:** 1) Pb of appropriate and up to date service provision: *"this place [Positive Voice] is open, like most of the other places, nine to five Monday to Friday which isn't much use for most people being tested now. And the reality is that most of the HIV services we have were designed for a different time, and there's nothing for people newly diagnosed" (HIV-positive, focus group).* 2) The wider impacts of new treatments for HIV. Understandings of new treatments can impact upon the decision to test for HIV. For instance, dilemmas brought by new treatments and the way in which medical benefits and definitions of health are understood: *P: "I think it basically just, it kills him when he takes it, it's just not worth it, it makes him really, really ill, and he says that although it might be prolonging life, it's not improving quality of life, I mean they can produce all the drugs that you want, but I think he, his words were that the quality of your life's more important than the quantity. He says, 'I would rather live a year and live it happy that live 20 years, being really ill and feeling like I don't want to get out my bed', and I suppose I'd have to agree, I suppose I would agree with him as well, I'd rather live a year happy and feel ok than live out the rest of my life feeling as sick as a dog and in pain. It's a shame, it's a shame, because he's a nice guy, and he's still really young. And I can remember him*	**Limitations identified by author:** Small non-representative sample; responses are likely to be patterned by location and time. Addresses potential issue of mixing data **Limitations identified by review team:** Unclear why one-to-one interview respondents only from two major cities (Glasgow and Edinburgh), whilst focus groups covered two additional areas. Does notreport if saturation was reached. **Evidence gaps and/or recommendations for future research:** “Investigating the similarities and differences of gay men's responses to the HIV epidemic in other settings is the next logical logical step. As the medical and technological apparatus of HIV management comes to the fore (for example, in terms of HIV

	FG: one by 2 gay male researchers; the rest by 1 gay male researcher. - **What setting(s):** Interviews: Glasgow and Edinburgh. Comfortable and confidential on premises of gay men's sexual health service organisations - **When:** N/A	**Were there specific inclusion criteria:** NR	*before and he was positive, before he knew he was positive, and he was very much the up at the karaoke, have a laugh type. He's still quite loud now, but he's really, really died down" (HIV-negative, interview).* 3) new treatments for HIV as a reason to seek HIV testing: Generally, participants could see and understand that there was a rationale for early testing today that did not exist in the past *"I think there is, amongst the gay community a very good knowledge of the fact that if you are HIV-positive, the sooner you know about it the better the chances of long term survival. It is literally that simple, I mean a lot of that message has got a bit lost, but get there, get the treatment as soon as you can, basically, and when it begins to develop inside your system you know that what you're on is the latest combination therapy, and with good drug management you could live practically as long as the rest of us" (HIV status undisclosed, focus group).* However, this argument was not always enough of an incentive to be tested for untested people and HIV- people who thought of taking another test. *"That's a fairly new argument, I mean, it's probably a year old sort of thing, that argument has been in circulation and when I read it I thought, 'mm, that makes sense,' em, (.) I haven't had a test as a result of it." (HIV-untested)* This pro-testing argument was very much debated and central both within the focus groups and individual interviews. Many participants raised the fact that not everyone responds well to treatment, that not everyone can access good HIV care, that the long term efficacy of such treatments is unknown and that not everyone who tests positive will want to access Western medicine and treatment. Also, difficulties due to medication (both physical and psychological) were raised. The following quote describes the perspective of many of the relatively well informed negative or untested participants*: "Well, from what I know it's still sort of a bloody hassle to live on this cocktail of drugs and timetable you've got to live to, I don't know if that would be, you know, that wouldn't be satisfying to me knowing*	antibody tests, tests of HIV viral load, HIV drug resistance tests and the availability of new treatments), attention, in terms of research, funding and policy, to the non-medical appears to atrophy. This is a trend which requires careful consideration." **Source of funding:** Healthy Gay Scotland

			that my life was gonna be like that. So I don't think it would be an incentive [to take the HIV antibody test], if you could just pop a pill in your mouth in the morning and forget about it, but throughout the day six seven times, they've got to be taken in from what I know sequence or whatever, no. It's not a... it's not a healthy alternative. Until they can come up with just one pill you can put in your mouth in the morning. I think, maybe one day that will come, I dunno. (HIV-untested, interview). A perspective of someone who sought this argument, and was tested positive as a result: "I didn't get tested for years cos I thought well there's a pretty good damn chance I've got it, so yeah, I went to London and I partied for three years and thought well I'm just gonna die one day so I might as well just enjoy myself, then I heard about combination therapy, then I heard this, and then I heard that, and I sort of thought well, it's time to face reality and do something about it." (HIV-positive, FG). Later, in the FG, he reflected upon his reason for testing, the source of this knowledge and the group's disenchantment with the reality of new treatments. *"All I heard was 'Combination therapy', but I heard the media hype a bit, I mean I was almost thinking, 'it's a cure', I thought 'Right!', I got tested now, I can sort it all out. Then... yeah... it's not like that at all, as you all know." (HIV-positive, focus group)* One man who tested positive said that after an HIV-positive test result there follows one hurdle after another. Another participant describes how the decision to take a test, if the result is positive, leads to more decisions, more choices and more responsibilities. *"If you find out you have got it, you've got to make choices, you know, and if you don't know you've got it, you don't have to make those choices." (HIV-positive, focus group)* The 'testing-treatment' argument: it does seem to offer improved markers of 'health'. However, the issue is more complex, partly depending on the length of time someone has know his positive status: Participant 1 (P1) is a young man, newly diagnosed HIV-positive, not on any treatment. Participant 2 (P2) is a	

			man who has lived with HIV for many years and witnessed the changes that new treatments and new technologies have brought to living with HIV. Participant 3 has also been diagnosed for several years: *P1: I got tested for myself but I don't actually think it's achieved anything as a result, it's just fucked things up. I'm not on any treatments. Interviewer: So you think [to P2], that new treatments are a real reason to get it [HIV testing] done? P2: They're going to do in the future. Not only are there drugs, but tests available that can tell you how far down the line you are, then I think there's a reason to get tested that perhaps didn't exist— in fact maybe, it's not just drugs, maybe maybe it's viral load tests that have made a difference as well—you can tell exactly—you can actually look at charts now and if your viral load's really low and your CD4 count's OK then you can say 'Right, there's x per cent chance of me being perfectly alright for the next five or six years'. P3: But you're newly diagnosed [to P1]. What I'm saying is for a lot of people, starting drugs before they start to feel unwell, before they start to feel the effects on work and they can't handle work, most of the tests can tell you whether you're getting to some critical stage and you can make that decision to start the drugs before you feel unwell, before you start feeling the effects on work and so on. P1 It's not cut and dried though (indistinct) P2 I have to say, I would rather have had the side effects of the drugs before I came down— my AIDS diagnosis, it was hellish—that's when I lost all my weight. Despite the fact that when I went on my first lot of drug therapy it was a bugger, to say the least. If you'd given me the choice between feeling unwell with my drugs before, I would rather go through the side effects of the drugs before the illness than wait until the illness and feel unwell with the illness and with the drugs. (HIV-positive men, Focus group).* The negative impact of a positive diagnosis is compared to the potential benefits of a positive diagnosis, viral load and CD4 counts, and treatment decisions. P2, who has witnessed so many changes in treatment efficacy,	

			advocates the testing treatment argument, whereas P3 and P4 emphasise the problematic nature of treatments and P1 still regrets having been tested. *P2: But I do think there's a generation who haven't actually watched their friends and their partners die, who actually sit there and look at the side effects of the treatment and think 'Oh that looks awful'. But the alternative is awful, the alternative was all your friends dying of very awful diseases. And in fact, talking about drugs, I remember thinking HIV and AIDS was at its worst in 1990 or so, because I remember that was when they were just coming up with the drugs for PCP [pneumocystis carinii pneumonia]. P4: There's the realization that if you go down the route of drugs, you're going to be doing it for life—there isn't the option of coming off them P2: Which in fact, once you've got over your HIV diagnosis, is one of the most difficult sets of tests to get used to- the ones which say 'Yes, you have to think about drugs'. You don't have to take them but you have to think about it. Interviewer: Why is that difficult? P2: Because you do realize that it's for life, it's not just like 'Oh, I've just got to take a week's worth of antibiotics'. P4: And it's not just your first test, it's the subsequent tests, every six months, every three months, have these drugs failed? Do I have to change? Are these my options? P2: And the side effects and all that. It's not an easy decision. P3: I spend half the time thinking things like 'I'm not getting any tests before Christmas because I don't want to have to think about changing my drugs over Christmas and New Year.' P1: What does it actually achieve? Because for me it's achieved very little, in fact. I think that would be different, if I'd tested positive and gone onto these drugs and this'll prevent me from getting ill, but for me it's too late. I've lost the man that I loved and I've totally changed since I got tested and I've got a different understanding of a lot of things, but really at the end of the day, it sucks. P2: If in a couple of years you get tested and told 'It's a good idea to start drugs now', you might feel different then. Maybe there's a difference between being relatively newly diagnosed, and*	

			not having to do anything about it, from somebody who's been diagnosed for a long time. P1: Well, I think that is important. I think the thing that's come out over this year has been 'Go and get a test because you might be able to go on treatments that'll stop you getting ill', but then I'm left thinking 'What's this all about?' (indistinct) P2: But without a test you can't tell whether you need to start drugs or not. P3: It could be five years of horrendous side effects of all these drugs. (HIV-positive men, Focus group) Although the 'testing-treatment' argument was understood by all, it was not perceived by many as a sufficient argument to actually seek HIV testing.	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Flowers et al. **Year:** 2003 **Citation:** Flowers, P., Duncan, B. & Knussen, C., 2003. Re-appraising HIV testing: An exploration of the psychosocial costs and benefits associated with learning ones HIV status in a purposive sample of Scottish gay men. *British Journal of Health Psychology*, 8(2), 179–194. **Quality Score:** ++	**What was/were the research questions:** “How do Scottish gay men understand the psychosocial costs and benefits of ascertaining one's HIV status via testing, and the implications of these for testing decisions?” **What theoretical approach:** NR **How were the data collected:** - **What methods:** In-depth interviews and focus groups - **By whom:** Interviews: 15 conducted by one of two gay male researchers; 2 by gay female researcher; 1 by straight female researcher. FG: one by 2 gay male researchers; the rest by 1 gay male researcher. - **What setting(s):** Interviews: Glasgow and Edinburgh. Comfortable and confidential on premises of gay men's	**What population were the sample recruited from:** Scottish MSM **How were they recruited:** Interviews: 13 from gay bars in Glasgow and Edinburgh; 5 through links with existing gay men's sexual health services providers. Participants were offered £10 in compensation for time given to study. Focus groups: all participants were recruited from 4 community support groups representing distinct locations in Scotland: the Highland region (n=4); the West Coast (n=5); Glasgow (n=5); Edinburgh (n=5). Participants were also offered £10. Purposive sampling (diversity of backgrounds and testing histories). **How many participants were recruited:** 37 **Were there specific exclusion criteria:** NR	**Brief description of method and process of analysis:** Transcripts were analysed for recurring themes using Interpretive Phenomenological Analysis (IPA). NUD-IST was used for coding of data. “Repetitions of emerging themes across individual transcripts were taken as indicative of their status as recurring themes that reflected shared understandings.” **Key themes (with illustrative quotes if available) relevant to this review:** HIV testing could resolve doubt and reduce anxiety for some MSM, although only when ‘not knowing’ was seen as less tolerable than a possible positive result. Key obstacle for many participants: fear of the implications of a positive result. HIV testing decision could be seen as a choice between living with uncertainty and the perceived impact of testing positive. (1) reducing uncertainty: a reason to test for HIV. 'for peace of mind': reducing doubts and anxiety regarding one's HIV status. Note: in this context ‚participants’ rationales for testing were framed in terms of expectations of a negative result. *"Em, I think the advantages of having one is peace of mind. Em, certainly if you’re negative there’s that peace of mind. Em, you know, you would eh, free to get on with your life, you know without that you were ill [with worry]. Em, it’s really the only, positive thing I can think of at this present in time. Lots of negative things, but nothing really. . ." (HIV-untested man) They’re [untested gay men] worried about it, I think actually because they’re so worried about it, they want to put their mind at rest. They actually want to and out they’re not [HIV-positive], they don’t actually want to and out they are! (HIV-negative man)* for those men who may have reasons to suspect they are positive, the use of an HIV test is clearly not seen as a means to provide ‘a clean slate’. Nevertheless,	**Limitations identified by author:** Small purposive sample; acknowledges that only tentative generalizations should be made to other populations. **Limitations identified by review team:** Unclear why one-to-one interview respondents only from two major cities (Glasgow and Edinburgh), whilst focus groups covered two additional areas. Does not address potential issue of mixing data. Does not report if saturation was reached. **Evidence gaps and/or recommendations for future research:** “For those who test negative, the impact of such a result on future testing decisions is, as yet, unclear.” “Further research should examine in detail both this issue and the triggers which motivate men to seek testing after an initial

	sexual health service organisations - **When:** N/A	**Were there specific inclusion criteria:** NR	for some men, the decision to test is a response to the unbearable uncertainty of living with an unknown HIV status. Such men will only test if they feel that 'not knowing' becomes worse than 'knowing a positive result'. *"Now in 1999, what's the benefit of knowing your status?" P: I keep coming back to peace of mind, of course, Imean, not knowing em, puts you in a limbo, em, Imean that's assuming you, sort of accept that you've done anything to put yourself at risk anyway, but when you have that doubt, I suppose not knowing is (.) almost worst than knowing, if you're negative then everything's fine, if you're positive then you can move on to combination therapy if necessary and the associated peripheries of being HIV-positive. (Highlands focus group; HIV status unknown)* In the case when a potential test result was perceived as likely to be positive, the more likely it was that such a test would provide peace of mind and the more likely it was that a test would be sought for this reason. Also, the fear associated with a positive test can be an obstacle to testing. This fear is primarily predicated on how confident they feel about their ability to cope with being positive. *PF: Do you think people are frightened of going for an HIV test? P1: Oh yes P2: You have to be in a mind set to go P1: I mean I don't know, maybe I'm being, maybe I'm stupid but I don't know whether I could go for one because the, the fear of the result, eh, I think that would eat away at me, and that would make me ill. (West Coast focus group, HIV status unknown). PF: That was that period that you'd thought about it but you were frightened of actually doing it? P: Well, I'd thought about for, you know, a long time, and kind of never . . . got round to going, because of, you know, I suppose the consequences if it had been positive, and how I would cope with that? (HIV-negative man).* Suicidal ideation: *Basically fear, the not knowing, em what's next, what's round the corner and just is it something they could cope with? Is it something you would commit suicide because you couldn't cope with the thought of being HIV or whatever. I mean I think em*	delay." **Source of funding:** Healthy Gay Scotland

			probably there's a big mental block for people. (HIV-untested man) 3) living with uncertainty: for some, may be the preferred option. This was largely framed in terms of 'being in denial'. Testing can be seen as a choice between living with uncertainty and the perceived impact of learning about one's HIV status. *But do you really want to know? There's always the element, do you really want to know you've got this? You're fine just now, and you can maybe brush it under the carpet, but I suppose getting told would make it so definite (HIV-untested man)* A positive diagnosis can be more of a concern than the possibility of undetected infection. In such cases, the psychosocial impact of a positive diagnosis is graeter than the physical damage of living with an undiagnosed positive status. *You're a bit late, whether you go for the test or not, I mean, what is solved?, What are you going to solve by actually going? and somebody gives you the test and says, yes, 'You're HIV-positive', right, and you know then, right. Two days before you were still HIV-positive but you didn't know, your life was completely different. What I'm saying is, if you've got the virus, and the chance is you're going to get ill and you're going to die at some point anyway, so you know, that's what I'm saying about weighing things up, saying well, would I rather just die not knowing. (HIV-negative man)*. An illustration of denial and hiding from a suspected diagnosis: *If it's a death sentence, and you're gonna know you're gonna die, you find out then you can't hide it, I can hide it for years, it's in the back of my mind but I don't reallywant to know so let's have a party anyway. Em, yeah, it's just total denial, fear, basic facing up to something that's hard to face, it's not easy. (Body Positive focus group, HIV-positive man) Och, well, you know, your denial veneer starts to crack a bit, you know—you think, well, I have . . . I've never really not done something because I wanted to do it, you know? [HIV risk-related behaviour] If Imet a guy and Iwanted to have sex with him, I have done so, you know? And I make no apologies for that, that's just the way I am, and*	

			I'll make my peace with that with myself and mypartner, et cetera. But . . .Maybe sometime you do have to pay the ferryman, I don't know. (HIVuntested man) Feelings regarding future HIV tests. *I: What's good about not knowing? P: Nothing's good about not knowing, em, if you don't know, then I think em, you can carry on, em, because you don't know, so it's all a possibility that you don't know, em, you could carryon with what you're doing, em, you don't need to take all these drugs, you don't need to go for all these bloody check ups, you don't need to go and get these blood tests done everyweek, em, yes, if you don't know, you get on with it. If I'd got to the stage where I reallybelieved that Iwas ill, then Iwould want to know, I personally would want to know. I: Why at that stage? P: Because I think at that point it's a case of you can't kid yourself on anylonger, you know, you can't lie to yourself anylonger, you just know there's something wrong with you, so get up off your arse and do something about it, em, (.) you know, people sort of, you know, you can try and prevent illness, and: prevent HIV with the condoms and everything else (HIVuntested man)* 4) Testing decisions were not static: 'I mean I think that there are three times that I chose to test over the years, and there's probably been lots of times that I've chosen not to. *(HIV-negative man)*	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Godin et al. **Year:** 2000 **Citation:** Godin, G., Naccache, H. & Pelleter, R., 2000. Seeking medical advice if HIV symptoms are suspected. Qualitative study of beliefs among HIV-negative gay men. *Canadian Family Physician*, 46(4), 861 - 868. **Quality Score:** -	**What was/were the research questions:** “What are the beliefs associated with seeking medical advice promptly when symptoms of HIV infection are suspected among HIV-negative gay men?” **What theoretical approach:** NR **How were the data collected:** - **What methods:** Three focus groups (5-7 people) - **By whom:** A health professional and a community worker (one of the authors) explained the study’s aim and directed the 2-hour tape-recorded semistructured discussion. - **What setting(s):** Health services - **When:** 'February 1998	**What population were the sample recruited from:** HIV- gay men living in Quebec city **How were they recruited:** Purposive sample. Men aged 18 to 45 years were invited to participate in the study by the staff of MIELS-Québec, a community organization. Subjects were recruited in bars, at the university, and at social and recreational gay associations. Participants were recruited in bars through personal contact. An announcement stating the objective of the focus groups was also sent to various gay associations (social, recreational, and university) inviting interested men to participate in the discussion groups **How many participants were recruited:** 20 **Were there specific exclusion criteria:** NR	**Brief description of method and process of analysis:** Tapes were transcribed, then double coding and reconciliation. Categories and sub-categories were generated as defined by the belief system adopted. The representativeness of the themes extracted was confirmed by community members who reviewed the findings. **Key themes (with illustrative quotes if available) relevant to this review:** 1) To be informed about one's health. Seeking advice promptly was seen as beneficial medically. It also helped avoiding uncertainty about one's health. 2) Anxiety and fear: alleviation through testing. *"I don’t understand not wanting to consult. I would not be able to say to myself, 'I won’t consult because I am afraid to learn that the result of the test is positive; I will be anxious in any case, so instead of living with this anxiety, I would rather face the truth.” If the result is negative, the balloon will deflate. If the result is positive, I will have to learn to live with this situation as any other problem in life.'"* 3) Facing reality. Reasons reported for not seeking medical advice promptly following appearance of symptoms: most agreed it would force them to face reality and radically change their lives. *“If tomorrow morning I learn that I have the HIV virus, what do I do? I am in the middle of my studies; do I stop my education? I have a good job; do I quit my employment? I have to make major changes in my life.” (Young participant)* Another participant: *“Delaying consulting a physician will let me continue to live the same way. I will not have to make major changes in my life; I will not have to wear condoms;* *I will not have to deal with any stress; I will not have to question myself.”* 4) Physician-patient relationships: Several men were worried about having to find an	**Limitations identified by author:** “Results reported in this study represent the opinion of a group of seronegative gay men living in a French Canadian community. They do not represent the spectrum of opinions in other cultural settings or in other groups, such as women or intravenous drug users.” **Limitations identified by review team:** No in-depth interviews (unlike all others qualitative studies in this review): this may be a limitation, given the personal and sometimes intimate nature of the topics of discussion. Relatively superficial findings and analysis overall. **Evidence gaps and/or recommendations for future research:** "Further investigation is needed to better understand the attitudes

		Were there specific inclusion criteria: Being an HIV- gay man	understanding and competent doctor whom they trusted. Several participants were concerned that some physicians were unreceptive and had prejudices against gay men. *“Physicians are human beings, and some of them are not very receptive; they are prejudiced against gay men. It is important to find a good doctor. In medical school they don’t learn how to deal with homosexuality.”* Risk of quality of the relationship between MSM and their physicians being affected, which might create an additional obstacle to testing. “*If I felt from the beginning that I was not accepted, the relation that I will develop with my physician would start off on the wrong foot.”* 6) Fear of ridicule. When showing symptoms akin to mild illnesses (eg. flu) participants worried that physicians would not take them seriously, would not understand their preoccupation. 7) Disclosure of sexual identity: Many participants found talking about sexual behaviours and risky sex to physicians was difficult. It could be an important barrier, especially if a physician seemed uncomfortable with the situation.. 8) Fear of positive test results: barrier to testing. Feeling unable to deal with positive test results: barrier to testing. By not knowing their status, some men who continue to live in denial (believe that they were still healthy.) *“There is also the risk of being confirmed as seropositive, the fear of the reality… to have to receive a diagnosis.” “If a person is not able to face a positive result, he is going to tell himself that he prefers not knowing the result because he is not able to deal with this answer that he dreads. It is easier for him to not know and live with magical thoughts.”*	and beliefs of family physicians regarding early medical intervention in management of HIV infection" **Source of funding:** the Fonds de la Recherche en santé du Québec (FRSQ) and the Conseil québécois de la recherche sociale (CQRS).

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Hult et al. **Year:** 2009 **Citation:** Hult, J.R., Maurer, S.A. & Moskowitz, J.T., 2009. "I'm sorry, you're positive": a qualitative study of individual experiences of testing positive for HIV. *AIDS Care*, 21(2), 185-188. **Quality Score:** +	**What was/were the research questions:** "To describe the experience of testing positive for HIV for people in the San Francisco Bay Area" **What theoretical approach:** Stress and Coping theory **How were the data collected:** - **What methods:** In-depth interviews; quantitative questionnaires (2 hour long, seven times over 18 months) - **By whom:** NR - **What setting(s):** NR - **When:** October 2004 - March 2006	**What population were the sample recruited from:** People who tested positive for HIV in the San Francisco Bay Area **How were they recruited:** Through local HIV testing sites, and enrolled in the “Coping, HIV and Affect Interview” longitudinal cohort study **How many participants were recruited:** Data reported for the first 50 participants recruited **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** NR	**Brief description of method and process of analysis:** The narratives were analysed first by coding each individual interview, and then by comparing codes across interviews. The first 20 interviews were sufficient to create a coding protocol and saturate the codes. The remaining 30 interviews, in which no additional codes emerged, were then divided among the investigators, coded, and exchanged for verification. Disagreements were resolved through discussion. **Key themes (with illustrative quotes if available) relevant to this review:** Most participants said that their positive test result was delivered in a straightforward way, using expressions such as “I'm sorry, but you tested positive”. Seven (14%) of the 50 participants said that the provider's delivery of the test results made the situation more “difficult, upsetting, or disturbing”. *"The thing that I didn't like was he said, “Well this shouldn't be a surprise. We discussed your high risk behaviors,” which I was not very happy they handled it that way."* Five participants (10%) mentioned that their provider was upset, nervous or crying when they gave them their results. This sort of emotional states also made the situation uncomfortable: *"When he came back, he was crying. He told me that, “I'm sorry, you tested positive.”... And, he's crying, I'm like, “Okay, I need to calm myself down,'cause I gotta take care of him!”".* The use of an “impersonal” or “scripted” language was reported as a problem by three participants (6%):*"I was surprised there wasn't much conversation . . . the person who did it just handed me couple of brochures about places where I could go.* But the experience of receiving the test results was not always negative: twelve participants (24%) described	**Limitations identified by author:** NR **Limitations identified by review team:** The synthesis identifies relevant themes, but does not offer much detail about the processes and dynamics at play. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** National Institute of Health; National Center for Reseach Resources; NIH Roadmap for Medical Research

			positive aspects, such as feeling “calmed” and “comforted”. Seven participants (14%) acknowledged that providers expressed concern about their emotional state after giving the results and either talked to them about their feelings or called in a counsellor to talk to them. Five participants (10%) described providers as encouraging and reassuring about their future and health. [NB: data about the actual emotional response to the results not extracted]	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Lee and Sheon **Year:** 2008 **Citation:** Lee, S.H. & Sheon, N., 2008. Responsibility and risk: accounts of reasons for seeking an HIV test. *Sociology of Health and Illness*, 30(2), 167–181. **Quality Score:** ++	**What was/were the research questions:** How are the reasons for testing constructed through interaction in actual HIV test sessions **What theoretical approach:** NR **How were the data collected:** - **What methods:** Audio-recordings of 49 HIV test counselling sessions - **By whom:** Data from clients was collected by the councellors. The conversations were recorded for analysis by the researchers - **What setting(s):** Recorded standard counselling sessions (25) at two sites, rapid sessions (24) at two other sites. All sites were based in Northern California, and offered offered free, drop-in HIV and STD testing primarily for MSM. - **When:**	**What population were the sample recruited from:** Councellors and MSM clients from test sites in North California **How were they recruited:** At the test site (no more detail) **How many participants were recruited:** 67- Counsellors n=19, clients n=48 **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** NR	**Brief description of method and process of analysis:** The recorded sessions were analysed by employing the methodology of conversation analysis **Key themes (with illustrative quotes if available) relevant to this review:** A majority of the clients (71.4%) presented routine testing as their reason for testing. Other reasons included: specific risk incident 3/6.1%; Partner's request 2/4.1%; End or beginning of a relationship 3/6.1%; Partner diagnosed as HIV-positive 3/6.1%; Symptoms of STD 3/6.1%. Clients present themselves as reasonable and responsible people who understand HIV health risks and are in control of them. 1) Clients focus on presenting the normal and routine nature of their testing. While routine testing is a "good faith" reason for getting the test, patients often responded in ways that suggest that they did not treat it as such. Several participants said that their decision to test was not motivated by a specific concern. The use of terms like 'regular upkeep' suggest a 'health maintenance' approach to testing. Clients present themselves as reasonable people who get tested regularly, as opposed to testing in response to particular incidents or in a state of panic. Several respondents minimised how significant deciding to test was. By presenting testing as a habit, clients portray themselves as sensible and responsible people who take care of themselves on a regular basis. 2) When introducing a specific risk in the reason for testing discussion, patients accompany this with mitigating circumstances that stress their knowledge about and control over the risk. A few clients brought up specific risks when referring to reasons for testing. Participants commonly presented their testing as routine, discussed a specific risk, and re-presented their testing as part of a routine and not as a	**Limitations identified by author:** NR **Limitations identified by review team:** For further research, could have suggested validating and/or enriching findings through use of other methods (eg. observational) **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** Center for AIDS Prevention Studies at UCSF, grant funded by National Institute of Mental Health (NIMH) and grant funded by the National Institute for Child and Human Development (NICHD)

	2003 (standard sessions) 2005 (rapid sessions)		response to the risk. In this way, clients presented their discussion of risk within the normality of testing and did not make it sound as the main reason for testing.	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Lekas et al. **Year:** 2005 **Citation:** Lekas, H.M., Schrimshaw, E. & Siegel, K., 2005. Pathways to HIV testing among adults aged fifty and older with HIV/AIDS. *AIDS Care*, 17(6), 674–687. **Quality Score:** -	**What was/were the research questions:** “What are the factors associated with HIV testing among older adults?” **What theoretical approach:** NR **How were the data collected:** - **What methods:** Semi-structured face to face in-depth interviews - **By whom:** Master’s level clinical interviewers - **What setting(s):** At the investigators’ research offices. - **When:** From the fall of 1996 through the fall of 1997	**What population were the sample recruited from:** Older HIV infected men and women (above 50) **How were they recruited:** Participants were selected from a larger sample (n /63) who participated in a study of late middle-age and older adults’ psychosocial adjustment to HIV/AIDS. Further case selection was based on representative case sampling (Shontz, 1965). “That is, while the eligibility criteria set the broad parameters for inclusion, participants were also selected to ensure the sample had considerable variability in age, gender, time since diagnosis and disease stage.” Self-referrals. Participants were recruited from community-based health and social services organisations, support groups, advocacy organizations and drug treatment centres in New York City. Flyers about the study and how to contact the researchers were	**Brief description of method and process of analysis:** All content related to HIV testing experience was retrieved. The authors then read this material to identify the barriers which impeded HIV testing and the triggers which prompted HIV testing among these older adults. Following this, the three readers developed a set of codes for the different types of obstacles and facilitators encouraging older adults to get tested, that were subsequently used to code the text. **Key themes (with illustrative quotes if available) relevant to this review:** Adults fifty and over followed distinct pathways to testing, depending primarily on which risk subgroups they belonged to. 1) knowing that one had engaged in risky behaviours, was a necessary but not sufficient condition for seeking HIV testing. 2) To confirm doubts/eliminate uncertainty: some older gay and bisexual men who were well informed about HIV transmission claimed that they suspected or even knew they were positive, and were tested to confirm their suspicion. 3) Many had friends and partners who had tested positive, which also encouraged them to get tested. Some of these men who tested positive in the 1990s explained that being aware of risk exposure, they had periodically tested since the 1980s. In both time periods, the primary incentives were to eliminate uncertainty about their status. 4) to be able to take better care of their health: *"I was promiscuous enough to know when testing came along that yes, I do want to be tested. The more I knew about my health status, the better I could manage. This was sort of the guiding philosophy. I knew or supposed that I would be positive. . .. I thought that I wanted to know as much as I could about having [HIV] / In order to better take care of myself."* 3) Hopelessness and uncertainty: AIDS as a	**Limitations identified by author: “**First, in the absence of a comparison group of younger HIV-infected adults, we cannot determine to what extent the different pathways leading to HIV testing are age-related.” 2) “The purposive sampling strategy used and the semi-structured nature of the interviews do not permit us to provide reliable estimates of the prevalence of each barrier and facilitating factor to testing.” 3) “The retrospective nature of the data constitutes another study limitation worth considering. However, we suggest that the recall bias that often undermines the reliability of retrospective data may be significantly reduced in this study because of the extreme salience of an HIV diagnosis” 4) “the small selfselected sample, while diverse and of a rare and seldom studied population, should not be

		distributed within the organisations and staff were requested to post flyers or directly offer potentially eligible clients/members a flyer. **How many participants were recruited:** 35 **Were there specific exclusion criteria:** The 27 participants (out of the 65), who, although age 50 or older at the time of the interview, had tested positive for HIV infection before the age of fifty, and/or did not have the date of diagnosis **Were there specific inclusion criteria:** (1) had tested positive for HIV antibodies; (2) were currently fifty years of age or older; (3) attributed their infection to either sexual behaviour or intravenous drug use; (4) were either African American (non-Hispanic) or White (non-Hispanic) and born within the U.S., or if Latino, were Puerto Rican and had resided in the U.S. for 4 years or more; and (5) were cognitively competent as assessed with a brief	"death sentence": some of the older gay and bisexual men who tested in the 1980s had initially been reluctant to test because they saw a positive HIV test as a death sentence. Since there was no treatment for AIDS, they saw no advantage in knowing their HIV status. Contrary to those who sought testing as soon as possible, these participants did not think they had any control over their health. In such cases, this sense of hopelessness, often increased by seeing partners and friends die from AIDS, was the primary obstacle to testing. Eventually, most of these adults were led to test due to physical symptoms and being encouraged by medical providers who were aware of their sexual orientation and sexual behaviour. *"I knew they [results of HIV test] would be positive . . . .[Why did you wait until '87 (to get tested)?] Well, first off, there isn't that much to be done about it. I wasn't happy with what I was hearing about AZT. Ah, and I was perfectly healthy. Ah, and I wasn't having sex. So, it's not like now, you know. I read someone is diagnosed in 1993, now he's on protease inhibitors already. Ah, it wasn't like that. It was a death sentence. It really was . . . .[What circumstances lead to that test in 1987?] My doctor said, 'You'd better go get tested, get tested.' I had a form of herpes that I, that is associated with AIDS or HIV positivity. I was suffering. Oh, was I suffering. (613)"* Hopelessness and uncertainty: *Well, I, I was quite sure I was HIV-positive. My lover was diagnosed with KS [Kaposi's Sarcoma] . . . .[How would you describe, or could you give reasons to why from 1983, when (Lover's Name) had KS to, you got tested in '87?] A variety of things. One, there was nothing you could do about it anyway. Ah, I mean even [Lover's Name] was just about to go into the first Pentam [Pentamidine] study in December of '86, alright? And that was the first thing available. Two, there were no confirmatory tests. You know, you couldn't be sure of what the results meant. And three, dealing with one thing at a time was quite enough. Ah, I think it would have been much more difficult had I know that I was infected while he was ill.*	viewed as representative of the population.**”** **Limitations identified by review team:** These are retrospective accounts, referring to reasons for testing sometimes more than 20 years after testing. Respondents' recollections might be incomplete or biased. This was acknowledged but maybe insufficiently defended: 'the extreme salience' of an HIV diagnosis could as well alter the exactitude of the experience, for instance. Also, people's reasons of testing in the 1980s may not be illustrative of current reasons for testing: this is not necessarily a limitation, but it could have been acknowledged. No double coding reported. **Evidence gaps and/or recommendations for future research:** "As our data were collected when protease inhibitors were just becoming widely available, it would be

		screening measure	*(610)* 4) Denial of exposure: Being familiar with the modes of transmission of the virus and the most common symptoms associated with HIV infection did not automatically lead respondents to acknowledge their exposure to risk, and therefore, that they should seek testing. Some of these men denied the risk for years in some cases. In retrospect, they associated their denial with not feeling psychologically ready to deal with a positive test and its consequences. Some justified their denial by minimizing the severity of their risk behaviours, as opposed to other gay men who engaged in high-risk behaviours. “Not viewing oneself ‘in a position of jeopardy because I primarily engaged in oral sex’ or not putting oneself in the ‘category of totally promiscuous gay men’ were expressions used to distance themselves from gay men who engaged in what they viewed as high risk behaviours” (Researcher). Others originally thought symptoms they knew were HIV-related came from less threatening causes such as stress. Being encouraged to get tested by one’s physician or one’s family, or wanting to protect one’s sexual partner from infection were facilitators contributing to the gradual breakdown of these mens’ denial and to their decision to test. “When asked to describe the circumstances that led to his getting tested in 1996, a gay White man who was recently diagnosed at age 56 explained that for two years he had attributed his ongoing weight loss to ‘stress, nerves, a crazy job’, and only decided to get tested when his family expressed their concern about his fifty-pound weight loss”: *I had a habit of not facing things, too. [Yeah, could you talk a little bit about that because you kind of mentioned it before. You said that you /] Ah, I don’t know. I’m just / everything could happen to somebody else but me. I, I’ve been always like that with everything. So, I was aware of what was going on in the community, but I figured I led such a / like / sort of dignified life or whatever. And it’s, you can’t be that stupid. And I should / I should have recognized . . . . I’m not a bad patient. I just / ‘Oh, that doesn’t apply to me. The world is coming to an end, but it*	interesting to examine whether the efficacy of the new combination therapies has decreased the dread of being HIV-positive, and therefore, has weakened this particular barrier to testing. 2) Nevertheless, further research is needed to determine whether younger adults encounter similar or different barriers and facilitating factors on their road to testing 3) Future research with larger more representative samples, building on the insights gained here, are strongly encouraged." **Source of funding:** National Institute on Aging

			doesn't bother me.' [What did your family see that they said, they thought] The weight loss. [The weight loss] Tremendous. Tremendous. I should have seen it myself. I really should have. But I don't look at things very / realistically, I guess. (622) A 53-year-old gay White man who tested HIV-positive at age 52 admitted that he should have suspected that he was probably infected five years before actually testing. When asked why he waited until 1995 before taking the test he replied: *Well, that's a big question right there. That's a big question. A lot of things. I mean, denial. I didn't really want to know. And ah, ah, I felt, you know, at that time in my life, I had all I could deal with. I had a lot going on. I was dealing with everything that I had to deal with that I was aware of. And I wasn't looking for other issues to have to deal with. So, it's easier just to not know because not knowing, I didn't really have to do anything . . . . [What were some of the circumstances that finally led you to pursue testing in '95?] Well, the only reason I got tested was that I had gotten involved in a very qualitative relationship in which it started in May of 1995. . . . the reason I really got tested was because of him. (607)*	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Mimiaga et al. **Year:** 2007 **Citation**: Mimiaga, M.J. et al., 2007. Men who have sex with men: perceptions about sexual risk, HIV and sexually transmitted disease testing, and provider communication. *Sexually Transmitted Diseases*, 34(2), 113-119. **Quality Score:** ++	**What was/were the research questions:** What are the barriers and facilitators related to sexually transmitted diseases (STDs) and HIV screening among at-risk Boston men who have sex with men (MSM). **What theoretical approach:** NR **How were the data collected:** - **What methods:** one-on-one, open-ended, semistructured interview & written quantitative survey - **By whom:** "one of two trained interviewers" - **What setting(s):** Fenway Community Health (FCH), a freestanding healthcare and research facility specializing in HIV/AIDS care and serving the needs of the lesbian, gay, bisexual, and transgender community in the greater Boston area - **When:**	**What population were the sample recruited from:** At risk Boston MSM **How were they recruited:** Modified respondent-driven sampling (RDS) method. An initial set of 4 study participants, known as “seeds,” were recruited through key informants at community-based organizations for MSM in Boston. Seeds are “subgroup members from whom the desired data are gathered; they are study staff recruited respondents, to help identify other subgroup members (i.e., individuals who engage in the same types of behaviors) to be included in the sample.”19 Additional seeds were recruited through an advertisement on an Internet MSM sexual web site. Selected seeds were evaluated for their commitment to the goals of the study and were motivated to recruit 3 eligible peers within their social network. Seeds were asked to recruit up to a	**Brief description of method and process of analysis:** 1) Content analysis. Thematic codebook with NVIVO. 2 analysts then individually reviewed the coded transcripts to determine emerging themes and then together agreed on final themes. ongoing discussion between coders and study investigators allowed for further theorizing and making interconnections between research questions, coding categories, and crude data. 2) Demographic survey data were entered into a Microsoft Access database and analyzed with SPSS. Chi-squared global tests of independence were used to test independent associations between variables. Mean group comparisons were made using one-way analysis of variance (ANOVA). **Key themes (with illustrative quotes if available) relevant to this review:** Fear of a positive finding, thinking oneself invulnerable to infection, and fear of stigma and rejection from both healthcare providers as well as peers: most important individual barriers. Structural barriers to testing: not knowing where to access MSM-friendly, anonymous, and/or low-cost testing facilities; being obliged to go specifically to an STD clinic for testing; being obliged to answer too many questions; or having to disclose details of sexual activity to obtain a test. REASONS FOR TESTING: 1) event-driven: experiencing symptoms, having engaged in at risk sexual practices, or learning that a partner was infected; 2) prevention-driven: testing as part of routine care; and 3) socially driven: entering a new relationship/being tested with a new partner, being encouraged by, and often accompanied by, a friend(s), or family member, and following peer norms. The prevention-driven and socially driven categories appeared more often in discussion of HIV testing	**Limitations identified by author:** "Although the use of RDS helped to obtain an ethnically diverse sample, the initiation of the process through the selection of seeds recommended by local AIDS service organizations meant that the cohort was more gay-identified with a higher prevalence of HIV infection than the wider Greater Boston area MSM population. Thus, some of the strategies to enhance HIV and STD screening that emerged from the comments of this study population such as local advertising may not be as relevant for MSM who are not gay-identified (e.g., men on the down low)." **Limitations identified by review team:** Data from qualitative study lacked richness and depth, with little context. However, it should be acknowledged

	between January and early April 2005	maximum of 3 participants, who in turn were asked to recruit a subsequent wave of up to 3 participants, and so on, until the target sample size of 50 had been reached. **How many participants were recruited:** 50 **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** self-reported as being 18 years of age or older, a Massachusetts resident, and a man who has had anal or oral sex (protected or unprotected) with at least 3 male partners in the prior 12 months.	compared with STD testing. Less frequently mentioned reasons for being tested for HIV: participation in a research study, exposure to advertisements, or recommendations by hospital or prison staff. PERCEIVED MOTIVATORS FOR TESTING Most participants provided answers similar to personal reasons for testing, as listed previously. Another common theme that was the desire to know one’s own status. For some, 1) this meant being reassured of a negative result; however, 2) others believed their MSM peers got tested because they “just want to know” and desire “peace of mind,” no matter the result. 3) A few participants also mentioned that access to anonymous, free, and culturally sensitive testing was an incentive to test. 4) Two younger participants believed that older men tested more because they tend to be more careful with their health and better educated about options, 5) whereas one younger respondent perceived testing as being more normative among his peers as a result of aggressive media campaigns. REASONS FOR NOT TESTING 1) Not experiencing symptoms, 2) not considering themselves at risk 3) dislike of urethral swabs, 4) lack of access to free and anonymous testing, and 5) not knowing how to go about getting a test. 6) Two participants described encounters with clinicians who were reticent to give STD tests routinely, discouraging patients from having them unless they had a particular reason to be concerned. This was experienced as a dilemma for men who felt uncomfortable disclosing sexual behaviours to health professionals. PERCEIVED BARRIERS TO TESTING The most common barriers mentioned were individual factors: 1) fear of knowing, 2) denial of risk, 3) being addicted to drugs or alcohol, 4) unwillingness to alter sexual activities 5) Lack of knowledge, specifically not knowing where or how to get tested and not knowing that treatments are available. 6) 2 respondents were also worried about confidentiality. Younger men were seen as less attentive to their health or as not viewing themselves at risk. 7) Social stigma was also considered to be an	that the study focused more on diversity than depth **Evidence gaps and/or recommendations for future research:** "Further studies of less gay-identified communities may be needed to derive more comprehensive suggestions as to how to enhance HIV and STD screening in diverse populations." Source of funding: HIV/AIDS Bureau, MA, Department of Public Health and the Communicable Disease Bureau, STD Prevention Division of the Massachusetts Department of Public Health.

			important barrier to testing by 18% of participants; 8) concerns about discrimination by healthcare personnel were reported by 4%. 9) Antigay bias and the fear of social rejection within their communities were reported by one respondent 10) Men who do not identify as “gay” or who are actively hiding their sexual activity with other men may face greater barriers to testing. 11) Several respondents cited “being on the down low” as a reason why some avoid testing. Nevertheless, one respondent thought that MSM who are concurrently in relationships with women might be more vigilant about testing. TESTING SETTING NEEDS: When asked about an ideal testing scenario: Overall, participants desired a testing environment that was community-based, friendly, culturally competent, gaypositive, and that normalized sexuality and STD/HIV testing. They preferred to see providers that were compassionate, respectful, and nonjudgmental, and wanted counseling and informational materials available on site. Anonymous testing was especially important to younger people who might want to avoid having parents find out (through insurance documents). Some perceived hospital clinics as undesirable , because “overly clinical”. Similarly, clinics that were conspicuously for STDs and/or HIV were not appreciated as much. Some said that accessible clinics with walk-in hours would encourage testing. Although most participants who tested recently expressed satisfaction with their experiences, suggested improvements to services included: shorter waiting time for results, less painful specimen collection (e.g., alternatives to the urethral swab and needles such as oral testing), avoid the need to answer sexual behaviour questions, home-testing kits, and being able to call in for results. Recommendations included being able to get an emergency appointment and normalizing testing by making it part of a routine examination. Many participants also emphasized the importance of having adequate supports on site for testing. Some suggested having HIV-infected peers on site to share their experiences as	

			potentially helpful, and sites should offer counselling support at all stages of testing: during specimen collection, during the waiting period, and when receiving results.	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Paparini et al. **Year:** 2008 **Citation:** Paparini, S., Doyal, L. & Anderson, J., 2008. 'I count myself as being in a different world': African gay and bisexual men living with HIV in London. An exploratory study. *AIDS Care*, 20(5), 601–605. **Quality Score:** – **Linked study:** Doyal, L., 2009. Challenges in researching life with HIV/AIDS: an intersectional analysis of black African migrants in London. *Culture, Health and Sexuality,* 11(2), 173–188.	**What was/were the research questions:** To explore the experiences of a group of black African men who define themselves as gay and are living with HIV in the UK **What theoretical approach:** NR **How were the data collected:** - **What methods:** Semi-structured interviews - **By whom:** NR - **What setting(s):** Non-clinical areas within hospital - **When:** February 2006 - February 2007	**What population were the sample recruited from:** African MSM in the UK **How were they recruited:** The project was announced, and volunteers sought, in voluntary organisations for people living with HIV, e-networks of black gay/bisexual men and specialist HIV clinics across a number of London hospitals. **How many participants were recruited:** 8 **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** African men who report having sex with men living in the UK	**Brief description of method and process of analysis:** Verbatim transcripts were subjected to thematic analysis, using a "modified" grounded theory approach. **Key themes (with illustrative quotes if available) relevant to this review:** Getting tested. Opportunities for testing were much greater in the UK, but the choice to use them was still difficult. About 50% of the men decided to have the test either as a routine check or because of doubts about their partner's behaviour. The rest did so because of health problems. Some participants had delayed testing even after being offered by health professionals. The most common reasons argued for this were related to anxiety and prejudice about HIV Receiving test results: Most men were shocked by the test results –only one was not. A positive result was linked to fear and worry about their partners. Status disclosure: disclosure was very difficult because of stigma associated to their sexual identity, particularly among other Africans and "back home". Most reported having disclosed their status only to a few close friends and relatives.	**Limitations identified by author:** Limited sample and difficulty of access to a highly stigmatised group. "For these reasons our sample is likely to reflect the views of those men who were most confident about their situation, and should not be considered to be representative [of the wider African MSM population living with HIV in the UK]." **Limitations identified by review team:** There are no quotes to support synthesis and little contextual information. Participants' voices are absent. Limited data of relevance for this review is presented. **Evidence gaps and/or recommendations for future research:** NR **Source of funding:** The Derek Butler Charitable Trust

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Prost et al. **Year:** 2007 **Citation:** Prost, A. et al., 2007. “There is such a thing as asking for trouble”: taking rapid HIV testing to gay venues is fraught with challenges. *Sexually Transmitted Infections*, 83(3), 185-188. **Quality Score:** ++	**What was/were the research questions:** What is the feasibility and acceptability of offering rapid HIV testing to men who have sex with men in gay social venues? **What theoretical approach:** NR **How were the data collected:** - **What methods:** In-depth interviews and focus group discussions - **By whom:** Researcher - **What setting(s):** Clinic setting for service users and staff, own venue for gay venue owners - **When:** between November 2005 and March 2006.	**What population were the sample recruited from:** Gay venue owners and service users (interviews); HIV testing clinic staff, positive gay men (focus groups) **How were they recruited:** Purposive sample; gay men were recruited from a patient group at a London GUM **How many participants were recruited:** 24 **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** NR	**Brief description of method and process of analysis:** Transcripts were read repeatedly and independently by three of the authors. They were then coded and analysed by two of the authors using a framework approach: after familiarisation with the data, a thematic framework was identified, focusing on acceptability barriers, enhancers and feasibility issues. **Key themes (with illustrative quotes if available) relevant to this review:** 1) Concerns about confidentiality and privacy; Confidentiality and privacy Retaining confidentiality when testing for HIV in social venues was seen as crucial. The stigmatising impact of HIV persisted and informed men’s concerns that being seen to access rapid tests in social venues could constitute an automatic assumption of risky sexual behaviour. Achieving confidentiality was regarded as problematic because venues were not designed to provide required levels of isolation and, if a positive HIV test result arose, there would be no privacy for men leaving the venue in a distressed state. The need for privacy *‘‘You need a quiet corner or an area. I think there’s an issue about confidentiality as well. Because if it’s actually right in the centre of the bar it’s not actually private. You’re not actually getting confidential, it’s not actually ethical […] I would want to be somewhere where there was privacy, so that while I was having the test or discussing it or whatever, it would be private, no one else could crash it…’’* (GM2) Lack of confidentiality when receiving a positive HIV diagnosis *‘‘I might like to do it, I might agree and get a positive result, andin the end I might walk out in tears. Now if other people know there’s a testing facility in there, people may think, oh look he’s just been diagnosed positive…the one that’s crying and leaving the pub.’’* (SP) Stigma around being seen taking	**Limitations identified by author:** NR **Limitations identified by review team:** Analysis: might have included more comparisons and accounted for possible disagreements between groups. Doesn’t report if saturation was reached. **Evidence gaps and/or recommendations for future research:** "Further work to enhance the acceptability of rapid HIV testing in gay social venues should explore four main areas. (1) Formative research must be conducted to define the best ways of ensuring privacy, confidentiality, hygiene and professionalism in venues used for rapid HIV testing. 2) Research must investigate alternatives to testing in pubs/clubs, where alcohol and drug use is pervasive, and in saunas,

			an HIV test in a social *venue ‘‘If people see me taking a test, that means that they will, by implication, think that I’m risky, uh, you know, that I have risky sex or things like that.’’ (GM4)* (2) HIV tests are ‘‘too serious’’ to be taken in social venues; Clubs and pubs were seen as inappropriate venues to deal with such serious events as HIV test. Men viewed clubs and bars as places associated with fun and pleasure, hence saw them as incompatible with thinking about serious health related issues. Respondents repeatedly said that men testing in social venues would not be in the right frame of mind to think about the potential consequences of a test. Also, many participants felt that men would not be in a position to give informed consent for testing when under the influence of alcohol or drugs, let alone deal with a positive test result. Some of the NHS staff taking part in focus groups said that men generally found interventions like syphilis testing and hepatitis B vaccination in social venues acceptable, but that HIV testing was different and more serious. Dissociating fun and health ‘‘*You’ve psyched yourself up to go out or go to a venue where you’re going to have potential sexual interaction with somebody, then it’s sort of like… your mindset isn’t in your HIV thing, is it?’’ (HIV-positive MLH, R4) ‘‘A nightclub is probably not the most auspicious environment for that […] people don’t go to the nightclub, you know, because they want to be reflective about their sex life.’’ (GM2)* The impact of alcohol and drugs *‘‘When you’ve got someone in an altered state already, putting them and giving them a diagnosis such as that would, when they’re already on whatever combination of drugs or alcohol, it may be… it’s not the right way to receive an HIV diagnosis.’’ (MLH, R1)* Inappropriate environments to receive a positive HIV diagnosis *‘‘At the end of the day, you don’t want sort of Kylie blaring out like that and hearing loads of people laughing and cheering and then saying ‘‘oh, I’m terribly sorry, it’s positive.’’ […] It’s just, I think it’s a bit insensitive.’’ (VO5) ‘‘If the risk of this person having a positive result was really high then*	where men are less likely to be open to engaging in healthseeking behaviour. (3) Staff offering rapid HIV testing in social venues should be trained to foresee potentially hazardous post-test behaviours and make appropriate referrals to GUM services. (4) Research must investigate alternatives to testing in pubs/ clubs, where alcohol and drug use is pervasive, and in saunas, where men are less likely to be open to engaging in healthseeking behaviour." **Source of funding:** Grant from the Pan-London NHS HIV prevention commissioners.

			maybe it is a better idea to get them to a clinic and do it sort of somewhere a bit more controlled […] I just think there is such a thing as asking for trouble…'' (VO4) (3) issues relating to post-test support and clinical standards; Post-test follow-up and service standards Concerns about the feasibility of providing adequate post-test support in the context of a busy social venue were paramount in men's accounts. Such concerns were driven by fears that men would not be supported after receiving a positive result, and that service providers' ability to contain strong post-test reactions such as suicidal ideation would be undermined in non-clinical settings. Because of concerns related to post-test support, respondents thought that men would be more likely to use a rapid HIV testing service in a social venue if they expected a negative result. Respondents also post-test behaviour issues—for instance, the possibility that negative testers might use their results as a serosorting strategy to engage in unprotected anal intercourse, or that positive testers might have unprotected sex as a destructive reaction after their diagnosis. Also, respondents felt that providing good clinical standards in commercial or community venues would be very challenging. VOs, for instance, felt that hygiene and safety standards would be difficult to maintain in clubs and saunas. Respondents also talked about social venues being dirty because of sexual activity, and felt that having HIV testing in venues where sex occurred was potentially unsafe. Potential lack of post-test support in non-clinical settings. Potential lack of post-test support in non-clinical settings *''In a [GUM] clinic, all that [support] mechanism can be offered to the person on the day of the test, whereas in a commercial venue, it's not inconceivable that the person may just disappear off and never be seen or heard of again... until their body's found on Brighton beach.'' (MLH, R2) Attracting low-risk testers ''If I thought I was negative, I would definitely use that [service].'' (GM3) ''There are guys who come into the clinic for… for them it is just a*	

			run-of-the-mill thing and they show up because, there it is, 3 months ago, and it's about time to do it, in which case you know, 20-min rapid test in a bar is probably… it'd suit them right down to the ground'' (VO4) Post-test behaviour *''In venues where men pick up other men, there will be a risk that if you met somebody, that you might, sort of, have a test and then think, ah we're both clear, we can both therefore have unsafe sex …'' (VO1) ''I think the knee-jerk reaction of getting a positive result in a bar is to get pissed, the knee-jerk reaction in a sauna would be to go and have sex.'' (VO4) Safety issues ''If you're gonna prick someone's hand and draw blood and they're gonna go to places where there is sexual activity going on, you know… you're creating a wound. That can't be good for you.'' (VO1)* 4) Impact on venues: Although venue owners were generally supportive of rapid HIV testing, they also felt that having tests available in bars or shops could repel some customers. Alternative service models suggested by VOs included offering HIV testing as part of a more general sexual health service based in a quiet venue or a ''health bus''. Owners also discussed the possibility of developing a community- led education service to publicise testing in gay venues. In this case, peer educators or health advisers would offer men appointments for HIV testing within social venues, but the testing itself would be carried out in a community location converted into a clinic. Positive association for venue owners—being seen as pro-active for the gay community *''I think it [rapid HIV testing] would be a good thing if anything because it seems that I'm prepared to do something for the gay community other than fleece them off their money.'' (VO2) Negative impact on the venue ''In terms of the venue owners, I guess some of them might be a bit cautious about erm killing the atmosphere with people sobbing in a corner…'' (VO4)* Negative association of venue with HIV test results *''There could obviously be the possibility that if somebody has a test and it comes up as positive, em… Then they're forever gonna remember that place, the place that, you know,*	

			they found out some quite dreadful news, and that’s possibly not the most beneficial thing that you want your store to be remembered for…’’ (VO5) Alternative service delivery models: an appointment system or a general health service for MSM *R1: An acceptable routine and one that I think would actually work…would be an educational and information intervention along with an appointment system here on a Saturday night MC: But not doing the test? R1: But not doing the test and that but doing the testing on a Sunday […] in the venue, but open up the venue specifically for it. ‘‘Having a range of diagnostic tests doesn’t blow your confidentiality or blow you out of the water, if you’re coming out of the room because you could have had one of many tests […] and that could be general health stuff.’’ (SP)*	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Remien et al. **Year:** 2009 **Citation:** Remien, R.H. et al., 2009. Lack of understanding of acute HIV infection among newly-infected persons—Implications for prevention and public health: The NIMH multisite acute HIV infection study: II. *AIDS and Behavior*, 13(6), 1–8. **Quality Score:** ++	**What was/were the research questions:** What are the understandings of acute HIV infection (AHI) among individuals diagnosed with acute/early HIV infection in 6 US cities **What theoretical approach:** NR **How were the data collected:** - **What methods:** Each participant completed 2 qualitative in-depth interviews (1-3h and 90 mins long, respectively) and a structured quantitative survey (data from quantitative survey not extracted). - **By whom:** "Columbia University-based qualitative team" - **What setting(s):** Private office settings - **When:** NA	**What population were the sample recruited from:** HIV-positive (with acute/early infection) **How were they recruited:** NA **How many participants were recruited:** 34 **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** 18 years of age or older, had sufficient English proficiency to complete the study measures, and had documented evidence of acute or early HIV infection	**Brief description of method and process of analysis:** For data analysis, the qualitative team devised a preliminary list of codes based on pre-established interview themes (for example, the five narratives listed above). After reviewing several transcripts, they added codes reflecting themes that arose from the data not captured by the original codes (for example, respondents' previous and current access to health and social services). The final coding scheme consisted of 10 parent codes and 30 sub-codes. The coding team, which consisted of one Masters level and two PhD-level researchers, initially coded four interview transcripts independently and then met as a group to discuss and reach consensus on the final codes. Subsequent interviews were coded by two coders, who independently marked the transcripts and then met to compare and discuss codes until consensus was reached. Master codes for each complete interview were entered into NVivo Version 7 by a member of the coding team. The team used thematic analysis to create finer gradations to understand similarities and differences across themes and participants. **Key themes (with illustrative quotes if available) relevant to this review:** 1) Reason for testing: symptoms: six respondents mentioned being aware that their symptoms could be a sign of AHI at the time of their occurrence. The following quotes show how this knowledge could lead to AHI test seeking: *'When I arrived at [the doctor's office] and told her of course that I had a fever, and she said, ''You have a rash on your face.'' And I didn't know that at the time. And I said to her, ''Oh, that's a very bad sign.'' I said that—because I had a feeling, okay, this might be connected with HIV. I was familiar with the acute*	**Limitations identified by author:** "The majority of the sample was comprised of gay men recruited in urban environments. We do not know how these findings generalize beyond this population. The participants who had the most knowledge about AHI were gay men who were integrated into the gay community. Also, this was a select sample of persons diagnosed with acute or early HIV infection, whereas most people with HIV are not diagnosed until later in their disease course. [...] Another limitation is that we did not include care providers and counselors as participants in this research." **Limitations identified by review team:** Not transparent about sampling strategy. (Limitations for review: limited data on views about testing)

			symptoms’ (54 year old gay man, San Francisco). ‘I had high fever, and a rash all over, and I knew these could be symptoms for an STD. So I went in for a test’ (31 year old gay man, Los Angeles). Several respondents said they wished they had known about AHI symptomatology, which would have helped them seek testing sooner and also would have given them the opportunity to prevent transmission to others 2) Understanding of AHI Testing Procedures. General lack of awareness of the different HIV testing technologies available. Most respondents reported significant confusion about the series of tests that led to their diagnosis. Participants found the repeat tests and indeterminate results especially confusing. When another man was asked if he knew what the ELISA and Western Blot tested for, he responded*: ‘Well, they’re saying that the, you know, I guess, with the Western Blot, it’s more sensitive. So, they can determine, I guess, in early stages that, that I am positive. …whereas ELISA isn’t as, as strong as a Western Blot. So, since the viral, since it’s, you know, I guess my T-cell count, or whatever it is, isn’t, I guess, out there, or it hasn’t really spread so much through my body…it can’t really determine’ (22 year old gay man, New York City).* When asked specifically if the ELISA and Western Blot tested for the virus itself or tested for antibodies, this man said, ‘I do not know.’ Several other respondents expressed confusion about the meaning of the various HIV test results and the stages of HIV disease. Puzzlement around viral load and CD4 count was especially common. A few respondents thought that their high viral load meant that they were at the end of the HIV disease progression, not the beginning. One 32 year old gay man from Providence, when told that his viral load was around 500,000, believed he was near death and began drafting goodbye letters to friends and family. Not until several weeks after his diagnosis did he come to understand that he was in an early stage of HIV infection. Several participants indicated the need for awareness raising and educational campaigns about HIV testing	**Evidence gaps and/or recommendations for future research:** NA **Source of funding:** National Institute of Mental Health

			technologies, AHI, and HIV prevention implications. One respondent suggested that many people are unaware of testing procedures available for AHI, specifically that an antibody test is different from a direct test for the virus*: ‘Like me, a lot of people don’t know the different between an antibodies test and a viral load test. […] We need education about viral load versus the HIV test, that’s the antibodies, because somebody could have a negative test and be positive, which is what happened to me most likely. […] I think education about the window period and the difference between a viral load and an antibodies test is very important’ (37 year old gay man, San Diego).*	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Spielberg et al. **Year:** 2001 **Citation:** Spielberg, F. et al., 2001. Moving from apprehension to action: HIV counseling and testing preferences in three at-risk populations. *AIDS Education and Prevention*, 13(6), 524–540. **Quality Score:** ++	**What was/were the research questions:** "To examine determinants of HIV test-taking and to document preferences for HIV counseling and testing modalities among MSM, female and male IDUs, and female and male STD clinic clients" **What theoretical approach:** Informed by the AIDS Risk Reduction Model, which integrates the Health Belief Model, self-efficacy theory, and stage of change research. **How were the data collected:** - **What methods:** 5 focus groups (three at the needle exchange, one at the STD clinic, and one at the bathhouse, n = 34 participants) followed by 66 individual interviews (14 at the needle exchange, 29 at the STD clinic, and 23 at the bathhouse) - **By whom:**	**What population were the sample recruited from:** MSM attending bathhouses [only MSM data extracted here] **How were they recruited:** Sequentially at the venue. Offered $20 to participate. First focus groups, then interviews. **How many participants were recruited:** 27 **Were there specific exclusion criteria:** Individuals who tested for HIV in the last 3 months, those qhwo could not understand English, and those who were less than 14 years of age **Were there specific inclusion criteria** NA	**Brief description of method and process of analysis:** AIDS Risk Reduction Model (ARRM) helped inform and guide the data collection and analysis. Barriers and facilitators of testing were grouped into categories based on the levels at which these factors potentially could be modified, including through changes affecting “individual” motivation, “system” policies or programs, “testing” technologies, and “counseling” options. A topic list was developed for initial focus group use and evolved over time to incorporate issues raised by participants in successive focus groups. The final semi-structured, open-ended instrument incorporated these changes and then was kept consistent during subsequent interviews." [...] "Focus groups were videotaped and individual interviews were audiotaped. [...] Data were pooled for analysis. Tapes were reviewed by a minimum of two staff persons, and relevant text fragments were transcribed. Concise text extractions were analyzed, and a third staff member synthesized coding for relevant topics. Overarching themes across and within the three groups were identified by three of the authors. " **Key themes (with illustrative quotes if available) relevant to this review:** Individual barriers: Reasons for postponing testing: fear (especially of positive results), lack of support, and to avoid having to make life changes following a possible seropositive result. *“The only reason why it’s taken me a while to lead up to my first time, to get tested, ... it would require a big change in my life. I guess we’re all kind of afraid of change.” 30yo MSM* Additional issues included societal antigay stigma/homophobia and concerns about confidentiality. Sigtma of testing: *“Stereotypes, labels, perceptions . . . It would be easier [to test] if there weren’t such a negative image associated with it.”(20yo MSM)*	**Limitations identified by author:** Low participation rates at the bath houses and STD clinic; findings may not be generalizable to all clients at these sites, or to other populations at high risk outside Seattle. Question of mixing data addressed. **Limitations identified by review team:** Quotes are not contextualised (in appendix). Insufficient context and depth at times. **Evidence gaps and/or recommendations for future research:** "This study was not designed to identify differences based on racial/ethnic group, gender, or age. Additional evaluations should identify the relative importance of specific themes among various populations, as a necessary step in developing and refining

	"Trained interviewers" - **What setting(s):** Needle exchange program, STD clinic, bathhouse. - **When:** Summer of 1998		System barriers: Nearly half of MSM respondents reported concerns about named reporting and said they would only test if an anonymous option were proposed, fearing discrimination from friends, insurance companies, and employers. Counseling and testing barriers: A large number of respondents particularly disliked waiting times for results and for a scheduled tests Among the MSM, knowing that a recent sexual partner was HIV-positive often compounded anxiety. Individual facilitators: MSM who sought HIV testing did so because of a history of risk exposure: nearly half had a current or previous HIV-positive sex partner. Other facilitators included encouragement from peers, especially among MSM. Many of the MSM respondents used testing as a reminder to reduce their risk and to practice safer sex. System facilitators: The single most important factor to facilitate testing by the MSM group: the preservation of an anonymous testing option. MSM perceived in-person risk-reduction pretest counseling as *"repetitive, unnecessary, and in need of new messages".* Cost: *“I wonder about the availability to people in rural areas. I don’t know if they have the availability of free and anonymous testing to them, or do they have to go to private doctors, which is a whole different story? If you don’t have a lot of money, it might be very expensive to go to a private place for testing.”* Venipuncture *dislike “Never liked it . . . being stabbed by another person .. . too invasive . . . they are sucking out my blood”* Public health message saturation *“Except for advances in treatment it’s the same spiel it was the first time.” 30s, MSM “I think if you have the black and white Surgeon General’s warning, you just turn it off these days. I don’t want to be bombarded with it.” 40s* Waiting for results stress *“I was sick with waiting one week, that’s why I haven’t tested again.” 30s* Divided support for telephone counseling. Facilitators: Healthy behavior *“It’s the responsible thing to do, plus it’s good health-wise, I mean if you do become infected you need to know so you can take care of*	population-specific programs to overcome the most prevalent impediments to testing." **Source of funding:** University of Washington Center For AIDS Research New Investigator Award

			yourself" 40s, M, W, MSM Life planning *"[Helps] to plan ahead so that you don't get to the stage where you may be in a bad way already." 20s, M, A, MSM* Benefits of early treatment *"It's always good to know because if I did contract HIV I'd want to know as quickly as possible in order to start on all the different treatment programs and so on." 30s, M,W, MSM* Partner/Peer support *"My boyfriend at the time got tested and he forced me to do it . . . I mean I was glad that I did it. I went and my boyfriend sat with me when I got tested." 20s, M, W, MSM* Risk reduction *"I use [testing] as a monitoring device to remind myself to play safe." 30s, M, W, MSM* Convenience *"I wish [testing were offered] a variety of times. Not everybody works nine to five. So it's difficult for them to access it. It'd be nice if two or three times a week there were night hours." 20s, M, W, MSM "The easier the better. If I walk into a Gay City event, or the Cuff, and someone's there saying testing, and it's been three months or more, my arm's out, let's go." 40s, M, W, MSM* Community based *"[Counseling should be offered] wherever your community is. People's community might be . . . from the bath houses to on Broadway to skateboarder kids to other parts of town. Done by the community in their community. Where they feel comfortable and connected and a part of, as opposed to the white-doctored coat coming in and the door slamming shut. You feel much better when it's somebody you actually see on the street." 40s, M, W, MSM*	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Stoelb **Year:** 2006 **Citation:** Stoelb, B. L., 2006. Quantitative and qualitative aspects of HIV serostatus self-disclosure: their relationship to immune function, cortisol, and post-traumatic growth. PhD thesis, University of Miami. **Quality Score:** –	**What was/were the research questions:** For the study as a whole: to investigate the relationship of HIV status 'self-disclosure' to biological and psycho-logical outcomes. For the qualitative component: to explore participants' choices to be tested for HIV and the benefits they experienced from living with HIV/AIDS [only the qualitative component is extracted here]. **What theoretical approach:** Inhibition theory; cognitive change theory **How were the data collected:** - **What methods:** Participants were given written questions and recorded their answers to tape. - **By whom:** Trained graduate student, staff member or psychologist - **What setting(s):**	**What population were the sample recruited from:** HIV-positive MSM in Florida **How were they recruited:** Via a larger programme assessing the impact of cognitive behavioural therapy on stress. Adverts and flyers in community sites and referrals from clinics and HIV/AIDS organisations. **How many participants were recruited:** 81 **Were there specific exclusion criteria:** History of chemotherapy, whole-body radiation treatment for cancer, use of medications with immunomodulatory effects, history of illnesses associated with permanent changes in the immune system, intravenous drug use. Reading level below 5th grade or significant cognitive deficits. Suicidality, alcohol or drug dependence, panic	**Brief description of method and process of analysis:** [Extensive quantitative coding of interview data was carried out; this is not extracted here.] Transcripts read by study author and grouped into themes. Categories with low numbers of examples were grouped together with others. **Key themes (with illustrative quotes if available) relevant to this review:** Reasons for testing. Appearance of symptoms. *"... why I decided to be tested was because that year ... I had shingles."; "I was losing weight tremendously, so then I took the HIV test"; "I got deathly ill and I had to be taken to the hospital for that, for dehydration and diarrhea"; "I had a, already had a symptomatic candida thrush-thing in my mouth that re-occurred and the doctor suggested I get an HIV test"; "I was presented some symptoms, like chills and night sweats, and I was losing weight really fast, for no reason"; "my body had been aching and I'd been feeling ill [...]"; "I had horrible headaches and my neck, my glands were swollen"; "I went to go get tested because I had gonorrhea"; "I had been hearing from family members and friends that I was not looking well [...]"* Curiosity ("just because") or having a suspicion due to risky behaviours. *"I was going to a drug treatment centre and, you know ... I guess I wanted to know, like, I had an idea ... so I wanted to take the test to find out yes or no"; "I guess I decided to be tested just so that I would know whether I was positive or negative"; "And being that I was living the same lifestyle, partying, a lot of drugs, I just suspected that I might, you know, might have it"; "I always felt that it was more important to know than not to know, and I decided to get tested"; "And also I had engaged in some risky behaviour so I just needed to find*	**Limitations identified by author:** None specifically relating to qualitative component. Sample predominantly white and gay/bisexual-identified. **Limitations identified by review team:** Limited data on context and no exploration of differences within sample. Analysis is confined to coding of themes and does not explore interconnections. The qualitative component of the study was not the main focus. **Evidence gaps and/or recommendations for future research:** Several are stated but they relate to status disclosure to others (the main theme of the study) rather than to HIV testing. **Source of funding:** NR

	University-based behavioural medicine research centre - **When:** NR	disorder, psychosis, personality disorder affecting group participation. **Were there specific inclusion criteria:** HIV-positive, aged 18-65, self-identified as homosexual or bisexual	*out ... I was playing a Russian Roulette game, I knew that, I was with several different people, some was protected, some was unprotected."; "[I] decided to take the HIV test because after having sex with a questionable partner that I took home with me one night"*. Routine check-up or involuntary screening. *"I didn't take the HIV test by choice. I was in a coma, it was given to me"; "the immediate reason was because there was a life insurance policy I wanted to apply for and I know I needed to know before I applied for it"; "I would go to the doctor every six months to, to have my regular check-up done and he would always take an HIV test"; "I did not decide to be tested, I was tested against my will by my physician [...]"; "I was at a blood bank when I found out that I, that I was HIV-positive"; "I think, I went to donate some blood and the doctor told me that, that particular day I couldn't donate blood because he had something to tell me. And he took me in the back and he explained to me why I couldn't donate blood and he also told me that I had the virus"; "I had applied for life insurance and was turned down, and found out through the testing agency for life insurance, that they said I was HIV"; "Well, it wasn't my own decision, it was a requirement for immigration eleven years ago back in 1991"; "I tested positive from a blood transfusion"* Knowing someone positive. *"The reason why I tested is because some of the acquaintances or friends that I knew at the time started turning HIV-positive"; "because other friends and sexual partners had tested positive and had gotten sick and died in the previous years"; "my lover of three years tested positive"; "I decided to get tested for HIV because a previous partner said that he two years previously tested positive, and then told me two years after that"; "taking care of a friend of mine who passed away"; "My lover was positive"*. [Several participants also expressed benefits of HIV-positive status. Detailed data are not extracted here as they do not relate directly to testing, but participants cited personal growth, awareness of the value of life, and	

			being motivated to engage in positive actions.]	

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Woods et al. **Year:** 2008 **Citation:** Woods, W.J. et al., 2008. Building stakeholder partnerships for an on-site HIV testing programme. *Culture, Health and Sexuality*, 10(3), 249. **Quality Score:** +	**What was/were the research questions:** What is the process of how a local health department established a viable VCT programme to test for HIV and other sexually transmitted infections (STIs) in a club setting? What are the lessons learned from that process, and what are the implications for developing similar programmes for other clubs? **What theoretical approach:** NR **How were the data collected:** - **What methods:** in-depth interviews - **By whom:** 3 interviewers (as part of a process evaluation) - **What setting(s):** Inside the gay club - **When:** August 2002 and March 2003	**What population were the sample recruited from:** Club management, VCT programme management, counselors and clients of a gay club **How were they recruited:** NA **How many participants were recruited:** 10 **Were there specific exclusion criteria:** NR **Were there specific inclusion criteria:** NR	**Brief description of method and process of analysis:** Secondary analysis of data from in-depth interviews conducted for an evaluation of an on-site HIV/STI VCT programme offered by the city health department inside the club. The analysis consisted of several stages. In the first stage, the investigators developed a coding scheme and trained the interview staff to code the transcripts and to then test for inter-coder reliability, a process in which pairs of staff coded the same transcripts and then checked for code agreement; disagreements were resolved through consensus. These coded data were used in a report to the State funding agency. The second phase of the analysis was an iterative process. in which the investigators reviewed the funder report and returned to the original data to identify quotes and confirm the developing stakeholders' model of inter-organizational collaboration. A third phase included a further review of the original data for confirmation of the final model. **Key themes (with illustrative quotes if available) relevant to this review:** Views from three broad stakeholder types: (i) Key Facilitating Stakeholders (the HIV director and the club health promotion director); The HIV director valued VCT at sex settings as an important part of his jurisdiction's response to the HIV epidemic. (ii) Supportive Stakeholders (health department administration and club executive management); (iii) Operational Stakeholders (club shift managers and staff, programme managers and counsellors, and clients). one client noted: *"Sometimes I know they're there, and sometimes I forget they're there" (37-year old Hispanic patron).* On the other hand, it can be what draws a man to the club, as a 31-year old, white patron who had been to other clubs,	**Limitations identified by author:** The model presented here may not translate readily in all its details to other places. it is important to remember that cultural differences should be considered when planning a VCT programme (Flowers et al., 2000). Attitudes toward VCT vary across regions, countries and continents, as does the access to and availability of medical care; these factors will greatly influence the acceptability and appropriateness of a VCT programme in a club. **Limitations identified by review team:** No description of sampling strategy. Secondary analysis of data collected for different purposes: not acknowledged and discussed as possible limitation. Saturation not reported. Lack of substantive data to

			spoke about coming to this club for the first time for the sole purpose of testing with a friend. The evaluation revealed generally high levels of patron satisfaction with the testing services. Patrons noted the comfort and convenience they felt by having VCT in the club. *I had never been tested for AIDS before or HIV and I thought it might be a good idea to just get tested, since it was so readily available" (34-year-old, African American patron).* Concerns about VCT's risk of compromising on club's eroticism: Patrons do not want to compromise the club's eroticism or have it take on characteristics of a clinical or policed environment.	inform attitudes to VCT. Little explicit evidence that the VCT programme is actually successful in terms of testing uptake. (Relevance to review: Relatively limited views on testing data) **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** The University-wide AIDS Research Program High Risk Initiative (PE00-SF-144) (PE00-SF-144) funded the UCSF Center for AIDS Prevention Studies to conduct the evaluation. Additional funding for the secondary analysis was provided by the National Institute of Mental Health (R21 MH71155).

Study Details	Research Parameters	Populations and sample selection	Outcomes and methods of analysis/Results	Notes
Authors: Worthington & Myers **Year:** 2003 **Citation:** Worthington C and Myers T., 2003. Factors underlying anxiety in HIV testing: Risk perceptions, stigma and the patient-provider power dynamic. *Qualitative Health Research* 13(5), 636-655. **Quality Score:** ++ **Linked study:** Worthington C and Myers T., 2002. Desired elements of HIV testing services: test recipient perspectives. *AIDS Patient Care and STDs 16*(11), 537-548.	**What was/were the research questions:** "What factors underlie HIV testing anxiety, and what implications do such factors have for HIV testing provision, and diagnostic testing service provision generally?" **What theoretical approach:** NR **How were the data collected:** - **What methods:** Semi-structured interviews - **By whom:** "A skilled qualitative researcher" - **What setting(s):** 29/39 were interviewed in the metropolitan area in Ontario; 10/39 were interviewed in smaller communities in either Southern or Northwestern Ontario - **When:** NS	**What population were the sample recruited from:** Potential test recipients [NB. This includes non-MSM populations. Only data explicitly from MSM, or stated to be relevant to all groups in the sample, have been extracted here]. **How were they recruited:** Brochures were distributed by AIDS service organisations in 3 Ontario cities. Individuals that called to a toll-free number were then selected using stratified quota sampling according to HIV serostatus, region of residence, epidemiological risk category, ethnocultural background, age, testing experience, and testing venue. **How many participants were recruited:** 41 (2 omitted from analysis due to poor tape quality or inebriated state of participant, so 39 used). Of these, 18 were MSM (9 HIV+ and 9 HIV-).	**Brief description of method and process of analysis:** Grounded theory approach: author and analyst undertook a "cultural review" prior to thematic coding, then structured sampling strategy for the transcripts, then grouping of the transcripts until saturation was reached and finally thematic coding. Donabedian's structure/process/outcome framework was used for data analysis. **Key themes (with illustrative quotes if available) relevant to this review:** Risk: One of the reasons for testing for HIV was to be responsible about one's own and others' health. Health was perceived by many as a responsibility, and therefore testing as part of that responsibility. Respondents reported that testing leads to greater "power" and "control" over one's health." Stigma: In addition to feeling judged regarding HIV, several HIV test recipients reported feeling judged about other characteristics, namely, being an injection drug user, being gay, or being a member of a minority ethnocultural group. One test recipient commented on his experience of going for HIV testing as a gay man*: "The first one [HIV test experience], it's like, 'Another goddamn fag is spreading the plague carrier.' That's what I felt at the first, the first place here in [city] I'd been tested." "The doctor more or less treated me like shit, when he looked at my file and found out I was a homosexual and I was getting tested for HIV. You don't need someone like that to treat you like a lower, lesser being."* One HIV-positive, gay, Black man said of his decision to change physicians, *"Yeah, because he also made general references to Black people, you know, which I found offensive and much as he said he had gay friends and so on, it was only in a negative light."* He added, *"There's a lot of social stigma*	**Limitations identified by author:** NR **Limitations identified by review team:** Recruitment strategy subject to self-selection bias. **Evidence gaps and/or recommendations for future research:** There is a need to develop models of anxiety that move beyond a focus on psychological factors. Also, current social constructionist views of risk are simplistic and unable to incorporate the more sophisticated (statistical) understandings of risk held by the public. More research is also required to understand the power dynamic between clients and service providers, "where the control exerted over the professional interaction by the client has been investigated only tangentially".

		Were there specific exclusion criteria: NS **Were there specific inclusion criteria:** NS	*attached to it [HIV].""* Patient-provider power dynamic: sense of power or control (or lack thereof) that the test recipient feels in interactions around HIV testing with test providers, and within medical relationships in general.	**Source of funding:** Canadian National Health Research and Development Program and Social Sciences and Humanities Research Council, Ontario HIV Treatment Network, and the Canadian Institutes of Health Research

11.0 Appendix D. Studies excluded on full text

Table 7 shows the abstracts and exclusion codes for all studies which were excluded on full text (the key to the inclusion codes can be found under 'Full text screening checklist' in Appendix B above). Studies marked 'EX_quant. views' are those which were excluded as being studies of views which did not present qualitative data (this criterion was introduced after the screening checklists were finalised).

Table 7. Studies excluded on full text

Adams et al. (2003)	Background. People at high risk for HIV infection could be increasing their risk behaviors, especially now that improved treatments for HIV infection are available. Goal: The goal was to investigate whether risk behaviors, perceptions of personal risk for HIV infection, and attitudes toward HIV testing among high-risk persons in Oregon differed in 1996 and 1998. Study Design: Data from the HIV Testing Survey (HITS), a cross-sectional survey administered to HIV-negative men who have sex with men (MSM), heterosexual adults at high-risk for sexually transmitted diseases (STD), and intravenous drug users (IDUs) at high risk for HIV infection in 1996 (HITS-I), were compared with data from a similar group surveyed in 1998 (HITS-II). Results: Proportions of participants reporting specific risk behaviors remained relatively constant in 1996 and 1998. Personal risk of HIV infection was perceived as low by 54% of HITS-II participants and 61.2% of HITS-I participants (odds ratio [OR], 1.2; 95% confidence interval [CI], 0.9-1.7). IDUs in HITS-II were more likely than IDUs in HITS-I to perceive their risk as low (OR, 2.1; 95% CI, 1.2-3.7). Conclusion: Persons at high risk might underestimate their risk for HIV infection while practicing risky behaviors. The prevalence of risk behaviors in these populations could be considered the baseline against which to measure future prevention efforts	EX_1
Agate et al. (2005)	In 1999, the Broward County Health Department and local community faith-based organizations collaborated to develop Churches United to Stop HIV (CUSH). CUSH has provided HIV prevention services to over 32,000 people, trained over 2,850 faith leaders, conducted over 1,000 risk assessments and provided HIV counseling and testing for over 825 people and technical assistance for 48 churches, including the development of a training manual. We report the development of this innovative program that demonstrates how collaborations between public health and faith-based organizations can connect science with communities	EX_1
Anagrius et al. (1998)	In 1986 Swedish STD clinicians decided on a national policy of offering HIV tests routinely to all their patients. During the period July 1986 through December 1994, 224,722 tests were performed. HIV tests for one or more specific reasons were carried out on 7% of the patients, and 20% requested the test solely because of anxiety. The remaining 73%, accepted the test as part of the clinical routine without giving any specific reason. Of those offered a test, 54% had been tested at least once before. Twenty-three per cent did not accept the test. Among those tested, 373 persons (0.2%) were found to	EX_1

	have a newly detected HIV infection. Contact tracing was the reason for testing in 11%, whilst 32% were tested for other specific reasons, 29% requested testing for no stated specific reason and 28% had been tested as a routine. Of all the tested men who reported sex with men, 7% proved to be HIV-positive. The 373 persons with newly detected HIV infection constituted 14% of the total newly detected cases in Sweden during the period in question	
Arumainayagam et al. (2009)	An assessment of the need to increase access to an outreach venue, the local sauna in Walsall, UK, frequented only by men who have sex with men, was undertaken. A case-notes review of the clients who attended the monthly outreach sessions at the sauna in the year 2007 was performed. Among the 287 men seen at the 12 outreach sessions, 37% had a sexually transmitted infection (STI). Of those tested positive, 88% had never had a previous STI. Twenty-one men had syphilis and a further six tested positive for HIV. Hepatitis B vaccination was completed for 41% of the clients seen. Those who tested positive for an STI said they would not have attended a conventional setting but accepted screening at the sauna. This confirmed the need to increase access at this outreach venue, and further funding has now been provided to have outreach sessions twice a month	EX_quant. views
Awad et al. (2004)	Rates of HIV antibody testing remain at approximately 45% of the general population. To more effectively design interventions to increase testing, comprehensive information is needed to understand the barriers to HIV testing. A measure of barriers to HIV testing was developed using the major barriers identified in the literature on barriers to health care utilization (Melnyk, 1988), and tested with a diverse group of individuals at high risk for HIV, including heterosexuals, men who have sex with men, injected drug users, and sex workers. An exploratory factor analysis indicated that the factor structure was replicated over 2 years of data collection. Three factors-Structural Barriers, Fatalism/Confidentiality Concerns, and Fear-emerged for both years. The reliabilities ranged from .75 to .87, indicating moderate to high internal consistency	EX_quant. views
Bailey et al. (2009)	Results of a community HIV testing pilot (fasTest) targeting men who have sex with men (MSM) in Brighton are reported and service users are compared with those testing in genitourinary medicine (GUM) clinics. FasTest offers rapid HIV testing in a weekly evening drop-in session staffed by GUM professionals in a community organisation. It was prospectively evaluated from November 2004 to March 2006 using a self-completed paper questionnaire assessing demographics, previous use of GUM, HIV testing history and sexual behaviour. Follow-up through GUM/HIV services was monitored. A simplified questionnaire was completed by MSM accessing the GUM clinic over the same time period. Men were included in the analysis if they identified as gay or bisexual or had recent sex with a man, tested for HIV and received a result. In both the fastest and GUM groups, men reported high rates of unprotected anal sex in the last 3 months. fasTest clients were significantly younger and less likely to test positive for HIV. This difference was independent of age and HIV testing history. There was no difference in rates of recent infection between the two. We conclude that	EX_7

	community HIV testing is feasible and reaches the target group of high risk MSM.	
Bingham et al. (2002)	Evaluated the prevalence of unrecognized HIV infection, barriers to testing, and reasons for nonuse of condoms among Black men who have sex with men (BMSM) aged 15-22 yrs. Of the 16% of participants who were infected with HIV, nearly all were unaware of their infection. Few reported testing frequently for HIV, and many reported engaging in behaviors that could transmit HIV because they perceived themselves or their partners to be at low risk for infection. Findings underscore the urgency of expanding and improving prevention efforts for young BMSM by increasing the demand for and availability of HIV-testing services and by providing high-quality prevention counseling that includes assessment and clarification of perceived risks for infection.	EX_quant. views
Bingham et al. (2008)	Background: We aimed to describe the use of voluntary HIV counseling and testing services, risk behaviors, and risk factors for unprotected anal sex (UAS) among men who have sex with men (MSM) who attended a bathhouse in Los Angeles during 2001-2002. Methods: Using 2 cross-sectional study samples, we compared (in order below) 458 of 640 MSM who used voluntary HIV counseling and testing in the bathhouse with 398 MSM surveyed upon exit. Within each group, logistic regression identified factors associated with UAS at their most recent bathhouse visit. Results: Of 640 MSM, 71 (11%) tested HIV-positive for the first time. Of the 50 HIV-positive MSM who completed a survey, 50% tested because of the convenient services. Similar proportions of MSM in both survey samples reported UAS (7%-8%) during their recent bathhouse visit. Risk factors associated with UAS in both survey samples were UAS with men outside the bathhouse and greater numbers of partners within the bathhouse. Conclusions: Comprehensive prevention services provided within bathhouses may reduce undiagnosed HIV infections among MSM, and targeting HIV prevention at the bathhouse may reduce risks with partners both inside and outside the bathhouse. Adapted from the source document	EX_quant. views
Binson et al. (2005)	The aim of this study was to examine the meaning of significantly higher proportions of positive test results through outreach HIV/sexually transmitted infection testing programmes at gay bathhouses compared with clinic programmes among high-risk men who have sex with men. We conducted a random digit dial survey of men who have sex with men in New York, Los Angeles, Chicago, and San Francisco. Half of the men in the sample did not test in the past year. Among those who did not test, a sizeable minority (17%) reported engaging in high-risk sexual behaviour with a casual or secondary partner. Over half of these non-testing, high-risk men went to bathhouses. These findings strongly support the potential value of locating outreach-testing programmes in bathhouses. Although further studies are necessary, such programmes have the potential to increase testing among the high-risk segment of the population. This is particularly noteworthy given that many men among those who do not test regularly engage in high-risk behaviours	EX_7

Blank et al. (2005)	Objective: To explore the impact of a holistic approach for syphilis control to improve the sexual health and well-being of men who have sex with men (MSM). Goal: The New York City Department of Health & Mental Hygiene (NYC DOHMH) developed Hot Shot! to address a variety of general MSM health issues, including syphilis, gonorrhea, chlamydia, and human immunodeficiency virus (HIV)/acquired immunodeficiency virus. Results: Between November 2003 and June 2004, 9 Hot Shot! events were held throughout NYC. Services delivered at events included STD/HIV screening; relevant adult vaccinations, cardiovascular health screenings; and mental health, tobacco, and other drug use assistance. Of 1634 attendees, 445 persons accessed >= 1 service; 4 persons were newly diagnosed with syphilis and 7 with HIV. Conclusions: The Hot Shot! approach to syphilis control can facilitate STD education, screening, and treatment of MSM while addressing comprehensive health issues. Future integrated health service delivery programs may be more successful by using stable venues for events to ensure continuity of care for MSM	EX_11
Boyd et al. (2005)	Objectives To establish whether there were ethnic differences in demographic characteristics, the stage at HIV diagnosis and reasons for and location of HIV testing between 1998 and 2000 in a large ethnically diverse HIV-1-infected clinic population in south London in the era of highly active antiretroviral therapy. Methods A retrospective review was carried out of all persons > 18 years old attending King's College Hospital with a first positive HIV-1 test between 1 January 1998 and 31 October 2000, and of a random sample of patients attending St Thomas' hospital with a first positive HIV-1 test in the same period. Demographic data, details of reasons for and site of HIV test, clinical stage, CD4 lymphocyte count and HIV-1 viral load at HIV diagnosis were abstracted from the local database and medical records. Comparisons were made according to ethnic group (white, black African and black Caribbean) and over time (1998, 1999 and 2000). Results Of the 494 patients with new HIV-1 diagnoses between January 1998 and December 2000, 179 (36.2%) were white, 270 (54.7%) were black African and 45 (9.1%) were black Caribbean. There were significant differences across the ethnic groups in HIV risk group, reasons for and site of HIV testing, and clinical and CD4 stage at diagnosis. Among whites, 72.6% were men who had sex with men, 3.4% injecting drug users and 21.2% heterosexuals, compared to 2.2%, 0.4% and 93.3% among black Africans, and 28.9%, 0% and 68.9% among black Caribbeans (P < 0.001). Black Africans were more likely to present with an AIDS diagnosis (21.3%) and a lower CD4 cell count [223 cells/mu L; interquartile range (IQR) 88-348] compared to both whites (9.9%; 358 cells/mu L; IQR 151-508) and black Caribbeans (17.9%; 294 cells/mu L; IQR 113-380), who were intermediate between whites and black Africans in their stage of presentation. There was a statistically nonsignificant trend with time, between 1998 and 2000, towards earlier diagnosis based on the CD4 cell count in whites (323 and 403 cells/mu L) and black Caribbeans (232 and 333 cells/mu L), but a later diagnosis in black Africans (233 and 175 cells/mu L). The majority of black Africans were HIV-tested as a result of suggestive symptoms or antenatal screening (58.4%) rather than because of perceived risk (40.5%), in contrast to the situation in whites (24.1% vs. 71.7%, respectively) or black Caribbeans	EX_1

	(34.5% vs. 65.5%, respectively) (P < 0.001). We found no significant differences across ethnic groups in age, HIV-1 viral load or year of HIV diagnosis. Conclusions Black Africans continue to present with more advanced HIV disease than whites or black Caribbeans, with no evidence of any trend towards earlier diagnosis. Future educational campaigns designed to promote the uptake of HIV testing among black Africans and black Caribbeans will need to address the multiple barriers to testing, including misperception of risk, stigma and ready access to testing	
Broadhead et al. (1997)	Public health reports This record was compiled by CRD commissioned reviewers according to a set of guidelines developed in collaboration with a group of leading health economists. A peer-driven intervention (PDI) was compared with a traditional outreach intervention (TOI) as an HIV prevention programme for injecting drug users (IDUs). With a PDI, IDUs play a more active role in the process of recruitment and education of their peers. To study the effectiveness and cost-effectiveness of the new model (PDI) as compared with a traditional approach (TOI) to HIV prevention. This study was a cost-effectiveness analysis carried out from a government perspective. The study population consisted of injecting drug users in the United States. This was a community-based study set in eastern and central Connecticut. The study ran from 1994 to 1997. No date information was given for the cost or resource use data. The effectiveness data were derived from a single study. This was a quasi-experimental study in which each of the two interventions was run in a different location. It was not practical to randomise. The study ran for two years at the PDI site and three years at the TOI site. Each IDU was followed-up at six months. This study relied on the data from the follow-up. There was a large loss to follow-up but the percentages were not reported. This was a cost-consequences study. Only the labour costs were included in this analysis (payments to recruiters for the PDI and outreach workers' salaries for the TOI). Unit costs and quantities were reported separately. The costs of operating the storefront were the same across sites and were therefore excluded. Discounting was not relevant. As no date information was reported, the cost data are assumed to have been collected during the study (1994 to 1997). Indirect costs were not included. US dollars ($). No sensitivity analysis was reported. Although the economic analysis compared the cost per recruit, for the TOI, the total cost appears to have been divided by the number of interviews (413) while the number of subjects recruited was reported to be 233. The PDI recruited 317 during the same study period. The total cost of the TOI was $194,400 over 24 months. For the PDI, a cost of $16 per recruit was reported. The summary findings were a cost per recruit of $470 for the TOI and $16 for the PDI. The other apparent benefits of PDI, such as reduction in risk behaviour, were not incorporated into this cost-effectiveness calculation. The PDI outperformed the TOI in recruitment and prevention education. The PDI was also significantly less costly. A PDI is not a replacement for a TOI. This study suggests an economical way of combining the skills of outreach workers and peers in a collaborative programme. 9722809	EX_7
Buchacz et al. (2009)	The HIV epidemic in the United States continues to affect racial/ethnic minorities disproportionately and is increasing among men who have sex	EX_7

	with men. Late HIV diagnosis remains common. To reduce HIV transmission and facilitate early linkage to care and antiretroviral treatment, the Centers for Disease Control and Prevention recommends universal voluntary HIV screening for all persons ages 13 to 64 years in public and private care settings. Recent studies demonstrate dramatic reductions in morbidity and mortality with widespread use of highly active combination antiretroviral therapy (cART), and some document improved outcomes when cART is initiated with CD4 cell count > 350 cells/mm3. As patients live longer, they are increasingly affected by chronic diseases, notably cardiovascular and renal disease, diabetes, and non-AIDS-defining cancers. Providers should ensure patients undertake preventive lifestyle changes (eg, smoking cessation, exercise, weight loss, dietary modification) and undergo recommended screening tests to reduce their risk for these important comorbidities. copyright Current Medicine Group LLC 2009	
Buchbinder (2009)	After the disappointing news reported at the 2008 (15th) Conference on Retroviruses and Opportunistic Infections regarding HIV vaccines, microbicides, and herpes virus suppression trials, the 16th conference this year brought welcome advances in the HIV prevention field. In particular, substantial progress is being made in approaches to preexposure prophylaxis in preclinical and clinical trials, and an efficacy trial of a vaginal microbicide appeared to provide women in Africa and the United States with modest protection against HIV acquisition. This review covers presentations on the epidemiology of HIV infection in specific global populations, strategies to improve the uptake of HIV testing, lessons from previous negative prevention trials, and progress in the development of new biomedical interventions. [References: 8]	EX_11
Campsmith et al. (1997)	Background. This article describes the testing behavior for human immunodeficiency virus (HIV) antibody among an urban population of men who have sex with men (MSM) and the reasons given for not being tested for HIV. Methods. A random digit dialing telephone survey of men living in selected neighborhoods of Seattle, Washington, was conducted from June through August 1992. Results. Of 603 MSM interviewed, 82% had ever been tested for HIV; 19% of tested men were seropositive. MSM who were older, nonwhite, with lower income, or not currently sexually active were less likely to have been tested. Among nontesters, 57% believed their risk of infection was too low to justify testing; 52% said they had not tested due to fear of learning the result, Testers and nontesters had similar rates of unprotected sexual behavior, Conclusions. Most MSM who had not been tested for HPV believed they were not at risk of infection and/or were fearful of learning the result, To increase the proportion of MSM who test, public health agencies may need to emphasize that unexpected infection does occur and that new therapies are available for those testing positive. Innovative programs may be necessary to reach those who have not yet decided to be tested. (C) 1997 Academic Press	EX_quant. views
Carey et al. (2008)	BACKGROUND: Sexually transmitted infection (STI) clinics provide an opportune setting for HIV prevention efforts. This randomized controlled trial evaluated a unique, two-step approach to sexual risk reduction at a publicly-	EX_1

	funded STI clinic. METHODS: During an initial visit, patients completed an audio-computer assisted self-interview (ACASI), were randomized to and received one of two brief interventions, obtained medical care, and completed a post-assessment. Next, two-thirds of the patients were assigned to attend an intensive sexual risk reduction workshop. At 3, 6, and 12 months, patients completed additional ACASIs and provided urine specimens to assess behavior change and incident STIs. RESULTS: During a 28-month interval, 5613 patients were screened, 2691 were eligible, and 1483 consented to participate and were randomized; the modal reason for declining was lack of time (82%). Consenting patients included 688 women and 795 men; 64% of participants were African-American. The sample was low-income, with 57% reporting an annual income of less than $15,000; most participants (62%) had a high school education or less, and 51% were unemployed. Sexual risk behavior was common, as indicated by multiple sexual partners (mean=32.8, lifetime; mean=2.8, past 3 months), unprotected sex (mean=17.3 episodes, past 3 months), and prior STIs (mean=3.3, lifetime; 23% at baseline). Bivariate analyses confirmed our prediction that HIV-related motivation and behavioral skills would be related to current sexual risk behavior. All patients received a brief intervention; patient satisfaction ratings were uniformly high for both interventions (all means >or=3.7 on 4-point scales). Fifty-six percent of invited patients attended the intensive workshop, and attendance did not differ as a function of brief intervention. Patient satisfaction ratings were also uniformly positive for the workshop interventions (all means >or=3.6). Return to follow-up assessments exceeded 70%. CONCLUSIONS: Results demonstrate that implementing an HIV preventive program in a busy, public clinic is feasible and well-accepted by patients. Ongoing evaluation will determine if the interventions reduce sexual risk behavior and lower incident STIs	
Centers for Disease Control and Prevention (1998)	Extending acquired immunodeficiency syndrome (AIDS) case surveillance systems to include confidential (name-based) reporting of human immunodeficiency virus (HIV) infections provides data representing recent HIV transmission patterns. These data may improve the ability of public health agencies to plan and evaluate HIV prevention and treatment services. Thirty-two states conduct name-based HIV infection case surveillance as an extension of AIDS case surveillance, and such surveillance is being considered in other states. Some community representatives and public health officials, however, are concerned that HIV infection surveillance may deter some at-risk persons from seeking HIV testing. This report describes the results of a survey conducted to assess deterrents to HIV testing in populations at risk for HIV infection during 1995 and 1996. The findings indicate that in these populations knowledge of state HIV reporting policies was low, and fear of a positive HIV test result and a lack of perceived risk for HIV infection were the most common deterrents to testing in all risk groups. However, untested men who have sex with men (MSM) who resided in states with name-based reporting cited concerns about reporting as a reason they had not tested more often than untested MSM in states without name-based reporting	EX_quant. views
Centers for	In the United States, human immunodeficiency virus (HIV) and acquired	EX_11

Disease Control and Prevention (2007)	immunodeficiency syndrome (AIDS) disproportionately affect men from racial/ethnic minority groups. Approximately half of the HIV/AIDS cases among non-Hispanic black and Hispanic males reported by 33 states using name-based HIV surveillance during 2001-2005 were among men who have sex with men (MSM). Each year, approximately 100 gay pride events are held in cities across the United States to celebrate diversity, demonstrate solidarity of the gay community, and heighten awareness of topics of importance to the gay community. These events are attended by several hundred to several hundred thousand MSM. Certain gay pride events are focused on celebrating solidarity in the minority gay community and are attended primarily by MSM from racial/ethnic minority groups. These events offer an opportunity for community-based organizations (CBOs) and health departments to provide HIV-prevention education and outreach. In 2004, CBOs and health departments, with technical assistance from CDC, began conducting rapid behavioral assessments at gay pride events and at minority gay pride events. This report describes the results of assessments and rapid HIV testing conducted at 11 events in nine U.S. Cities during 2004-2006; most of these events were attended primarily by MSM from racial/ethnic minority groups. A total of 543 attendees who participated in the assessments reported at the time of the event that they had not had HIV infection diagnosed previously. Of these, 133 (24%) were tested for HIV during the event, and eight (6%) of those tested during the event had a positive rapid test result. All eight were subsequently confirmed to be HIV-positive by Western blot testing. Testing at gay pride events provides an opportunity to identify new HIV infections among MSM outside of health-care settings, particularly those from racial/ethnic minority groups	
Centers for Disease Control and Prevention (2009)	In the United States, black men who have sex with men (MSM) account for a disproportionate number of new cases of human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS). From 2001 to 2006, the number of HIV/AIDS cases among black MSM aged 13--24 years in 33 states increased 93%. In 2006, more new AIDS cases among black MSM were diagnosed in the South than in all other U.S. census regions combined. In November 2007, the Mississippi State Department of Health (MSDH) reported to CDC an increase in the number of young black MSM who received diagnoses of HIV infection at a sexually transmitted disease (STD) clinic in Jackson, Mississippi. MSDH and CDC conducted a survey of 29 young black MSM in the three-county Jackson area who received diagnoses of HIV infection during January 2006--April 2008 to characterize risk behavior and HIV testing behavior. This report summarizes the results of that survey, which found that, during the 12 months before receiving their HIV infection diagnosis, 20 (69%) of the 29 participants had unprotected anal intercourse, but only three (10%) of the 29 thought they were likely or very likely to acquire HIV infection in their lifetimes. Additional investigations are needed to determine whether this sample is illustrative of other groups of black MSM at high risk for HIV infection, especially in the South. Targeted interventions that decrease HIV risk behaviors among black MSM should be developed, implemented, and evaluated to reduce HIV transmission	EX_7
Charlebois et al.	To meet federal recommendations to collect case reports of HIV infection,	EX_1

(2005)	California has adopted a non-name code system to conduct HIV surveillance. The objective of this study was to evaluate among HIV test takers the acceptability and preferences for the 3 major types of HIV infection reporting-name, name-to-code, and non-name code. Interviewer-administered exit surveys with spoken scripts and matching printed materials clearly outlining the 3 HIV reporting options were conducted among HIV test takers immediately following appointments for pretest HIV counseling and blood collection. The study enrolled 208 HIV test takers at 14 publicly funded HIV testing sites in 4 California counties (Los Angeles, Riverside, Fresno, and Santa Clara). Overall with respect to which would be the most acceptable system, 67% reported non-name code, 19% reported name-to-code, and 12% reported name-based HIV reporting (P < 0.0001). A second sample of 226 exit surveys taken I year following implementation of California's non-name code HIV infection reporting system continued to show a significant preference for non-name code HIV infection reporting. Significant independent predictors of a preference for coded IIIV reporting in both the pre- and postimplementation period were men who have sex with men (odds ratio [OR] = 5.7, 95% Cl: 1.2-26 in the preperiod) and having just taken an anonymous HIV test (OR = 3.6, 95% CI: 1.4-9.3, P = 0.009 preperiod). Were the state to adopt name-based HIV reporting, significantly fewer individuals report being likely in the next 12 months to have a confidential HIV test than report being likely to have an anonymous HIV test (51% likely confidential vs. 76% likely anonymous, P < 0.0001). This analysis documents strong support, among HIV test takers in California, for a non-name coded HIV reporting system and indicates a high probability of a shift away from confidential testing toward anonymous testing under a scenario of name-based reporting. This shift is of concern as confidential HIV testing is the basis of US HIV surveillance systems	
Chesson and White (2007)	Objectives: To explore how the cost effectiveness of a behaviour-change prevention programme for sexually transmitted infection (STI) varies with the phase of an STI epidemic. Methods: A model of STI transmission and standard methods of cost-effectiveness analysis was used to examine the cost effectiveness of a hypothetical, behaviour-change intervention initiated at various phases of an STI epidemic. Results: The intervention was more cost effective when initiated in earlier phases of the epidemic rather than later phases, under a range of scenarios. However, the relative impact of the timing of the initiation of the STI prevention intervention on the cost effectiveness was quite small compared with other important factors, such as the cost and impact of the intervention and the lifetime medical cost of the STI. Conclusions: Earlier initiation of an intervention can improve the cost effectiveness of the intervention, although this result does not hold for all possible scenarios.	EX_1
Chippindale et al. (1998)	Patient records in a central London genitourinary medicine (GUM) clinic relating to HIV testing were examined and compared for the 3 months immediately before and after World AIDS Day (WAD) in 1994, according to gender and sexual orientation, and the reasons given for testing.	EX_quant. views

	Additionally, patient-identified risk was compared with counsellor-identified risk in each case in 1994. Findings were compared with data from the initial HIV awareness campaign in 1986-87. In the 1994 study period, there were no significant differences in overall numbers attending or gender of test-seekers before and after WAD, or proportions of heterosexual, bisexual and gay test-seekers across the time periods. Within each of these groups, gay test seekers were significantly more likely to be HIV-positive than heterosexuals, although there were no differences in numbers found positive in each group before and after WAD. Thirty-five per cent (n=268) reported a history of safer sex only, 32% (n=247) said 'sometimes', and 33% (n=249) said 'no'. Overall, the main reasons given for HIV test-seeking included having part of a sexual health screen, having episodes of unprotected sex and/or casual partners, concern over partner's status/monogamy, and intravenous drug user (IDU) contact. Reasons for testing in 1994 reflected greater awareness of HIV transmission compared to 1986-87, although only one-third of those tested reported a history of safer sex	
Chopra et al. (1999)	A 31-year-old man presented with acute pain in his left arm and hemorrhagic vesicles that followed his left 8th cervical nerve. A diagnosis of herpes zoster was made, and the patient was treated with valacyclovir. He refused testing for antibodies to HIV because he denied being at risk. Two months later he returned with postherpetic neuralgia and postherpetic hyperhidrosis in the distribution of the vesicles, which had since resolved. Serology for HIV at this visit was positive, and the patient admitted to having Sexual relations with prostitutes. Six months later the patient was being treated with triple antiretroviral therapy, and all signs and symptoms of postherpetic zoster had resolved. This case report documents the need for HIV testing in patients with unusual presentations of herpes zoster even if they initially deny being at risk	EX_1
Cohen et al. (2004)	Journal of acquired immune deficiency syndromes This record was compiled by CRD commissioned reviewers according to a set of guidelines developed in collaboration with a group of leading health economists. The study examined 26 interventions for the prevention of human immunodeficiency virus (HIV). The interventions were grouped into four broad categories: individual interventions that included counselling and testing, counselling without testing, discordant couple counselling, videos in sexually-transmitted disease (STD) clinics, group counselling, partner notification, and school-based education; community and social network interventions that included opinion leader programmes, street outreach, and community mobilisation; biomedical interventions that included drug treatment programmes, STD screening and treatment, HIV antiviral treatment, and male circumcision; and structural interventions that included condom availability, needle exchange, needle deregulation, alcohol tax increases, youth supervision programmes, and mass media campaigns. The aim of the study was to compare the relative cost-effectiveness of different HIV prevention interventions in local populations. The perspective of a public health system was adopted in the study. Cost-effectiveness analysis. The population and, hence, HIV prevalence rates used in the studies to derive model parameters for each intervention varied significantly. The setting was the community. The	EX_1

	economic study was carried out in the USA. The effectiveness data were derived from studies published between 1989 and 2003. In terms of resource use, data for some interventions were from studies published between 1993 and 2001; the authors did report the dates for the others. The price year was not reported. The effectiveness data were derived from a review of the literature. To estimate the number of HIV infections prevented, the authors used a Bernoulli process model for assessing the interventions that prevent HIV transmission through sexual acts. They also used a similar Bernoulli process formula for assessing the interventions that prevent HIV transmission through needle exchange. For other interventions, the authors assumed that the reductions in HIV incidence were proportional to the reductions in incidence of gonorrhoea. Details of the modelling for each intervention were described in the article. The time horizon for the study was one year. The models initially produced outcomes for different time periods. However, these were then standardised to one year on the assumption that effects less than a year would continue for a year; effects found for durations longer than a year were interpolated linearly. The major outcomes estimated were: the pre-act HIV transmission probabilities of male-to-female vaginal sex, female-to-male vaginal sex, male-to-male anal sex, injection with an infected needle, injection of a needle used by an HIV-infected person, and proportionate reduction in sexual transmission as a result of condom use; the number of sexual partners of high-risk heterosexuals within 3, 6 and 12 months; the number of sexual partners of men who have sex with men (MSM) within 3, 6 and 12 months; the number of sexual acts per year between high-risk heterosexuals; the number of sexual acts per year between MSM; the rates of condom use before and after the intervention; the number of sexual partners before and after the intervention; the number of sexual encounters before and after the intervention; the rates of needle exchange; the rates of STD reduction; and HIV prevalence of men and men's partners, women and women's partners, and MSM. Not reported. Not reported. Not reported. The effectiveness evidence used in the model was derived from 42 primary studies. Not reported. Not reported. The summary measure of benefit was the number of HIV infections prevented. This was obtained from the models for each intervention. Discounting was not relevant as the time horizon was one year. The cost/resource boundary adopted was that of the public health system. The costs included the total cost to the public heath system of implementing the intervention. The lifetime costs of treating HIV were not included in the total costs. These were left to form a threshold for the cost-effectiveness ratio of an intervention. The costs for some interventions were derived from the review of published studies, while those for other interventions were taken from figures at the Louisiana Office of Public Health and/or the Los Angeles County Department of Health. For each intervention, the costs per person reached and the number of people reached were reported. These were then multiplied to derive the total costs of the programme. Discounting was not relevant as the time horizon was only one year. The price year was not reported. The indirect costs were not included in the analysis. US dollars ($). The costs were treated deterministically. To evaluate the robustness of the estimates used in the decision model, the authors conducted 1-way and 2-way sensitivity analyses. Model parameters such as HIV prevalence, cost per person, rate	

	of condom use, number of sexual partners, the rate of sex and needle sharing, and STD incidence were systematically varied. The method used to select the ranges was not reported. The reported numbers of HIV infections prevented (duration) for each intervention were for different time periods. They were only adjusted to 12 months for each intervention when calculating the cost-effectiveness ratio. For individual interventions: counselling and testing, combined HIV+ and HIV-, resulted in 1.56 HIV cases prevented (6 months); counselling and testing, client centred, 1.01 (12 months); counselling without testing, single session, 0.06 (6 months); discordant couple counselling, 4.66 (6 months); videos in STD clinics, 2.52 (7 months); group counselling, multiple sessions, 0.02 (3 months); group counselling, multiple sessions, 0.29 (2 months); partner notification for HIV+ partner, not reported; partner notification for HIV- partner, 11.56 (6 months); school-based education, multiple sessions, 0.0027 (7 months); and group counselling for youth, multiple sessions, 0.0044 (2 months). Community and social network interventions: opinion leader programmes resulted in 0.38 HIV cases prevented (2 months); street outreach, 0.13 (12 months); street outreach 41.9 (24 months); community mobilisation, 2.13 (24 months); and community mobilisation (Mpowerment), 7.43 (12 months). Biomedical interventions: drug treatment programmes resulted in 0.4 HIV cases prevented (12 months); STD screening and treatment in HIV clinics, 9.04 (12 months); STD screening and treatment in the general population, 0.51 (12 months); HIV antiviral treatment, 26.16 (12 months); and male circumcision, 4.39 (12 months). Structural interventions: condom availability resulted in 136.48 HIV cases prevented (36 months); needle exchange, 1.89 (3 months); needle deregulation, 13.98 (9 months); alcohol tax increases, 67.83 (12 months); youth supervision programmes, 0.0023 (6 months); and mass media campaigns, 2,296.47 (84 months). The total costs for the interventions were not reported. Only the costs per person reached were reported. Incremental cost-effectiveness ratios of each intervention, compared with the absence of the intervention, were calculated. The measure of benefit used was the one adjusted to 12 months. No incremental analysis was performed to compare the different interventions. The interventions with a cost-effectiveness ratio below $60,000 were as follows: individual interventions, discordant couple counselling ($16 000) and videos in STD clinics ($1,300); community and social network interventions, opinion leader programmes ($8,100), street outreach ($52,000) and community mobilisation (Mpowerment; $12,000); biomedical interventions, STD screening and treatment in HIV clinics ($12,000); and structural interventions, condom availability ($22,000), needle exchange ($13,000), needle deregulation ($2,700), alcohol tax increases ($1,500) and mass media campaigns ($18,000). The sensitivity analyses showed that the study results were quite sensitive to variations in prevalence of HIV infection and the cost per person reached by the intervention. The results of the sensitivity analysis were reported extensively. The methods developed in the study provided a means to understand the general patterns of relative cost-effectiveness of different interventions. The authors found that this cost-effectiveness varied between interventions by several orders of magnitude. The authors' findings suggested that a comparison of the estimates of the cost-effectiveness of HIV interventions provides insight that could help local communities	

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Coleman and Ford (1996)	This paper draws out and distils three key themes that have emerged from a substantial bibliographical review of a range of HIV intervention programmes, implemented throughout the world between years 1987 and 1995. Specifically, the paper assesses (1) to what extent intervention programmes have been tailored to meet the requirements and needs of specific target groups; (2) to what extent intervention programmes are supported by social and psychological theory of attitudinal and behavioural change, and also to what extent the results and findings from the interventions have amended existing theory; and, finally, (3) the range of methodologies employed in evaluating intervention programmes and also to what extent behavioural measures have been used in examining a programme's effectiveness. In light of these themes, the paper presents and discusses the principal factors thought to contribute towards the effectiveness of HIV intervention programmes. [References: 124]; An extensive review of the evaluation literature on global human immunodeficiency virus (HIV) prevention programs implemented during 1987-95 identified three key areas of focus: 1) the extent to which interventions have been tailored to meet the needs of target populations; 2) the extent to which programs are supported by social and psychological theories of attitudinal and behavioral change; and 3) assessment of the methodologies used in program evaluation, especially behavioral measures. The literature reveals a shift over time from interventions aimed at the general public to those tailored to the needs of four risk groups: young people, homosexual/bisexual men, commercial sex workers, and intravenous drug users. Only a minority of programs were based on a specific theoretical approach to behavioral change, and there has been little refinement of existing psychosocial theory; however, awareness of the inadequacy of purely cognitive, information-giving approaches has increased. A trend toward inclusion of an evaluation component has enhanced program design. The ideal evaluation strategy would include explicit theoretical grounding, both process and outcome evaluation methodologies, baseline testing of attitudes and behaviors, use of equivalent control groups, evaluation of both cognitive and behavioral impacts, post-test	EX_7

	measures of behavioral change, and longitudinal evaluation of sustained change over time. The literature indicates that prevention programs should involve a significant pre-planning component to assess the nature and extent of salient behaviors. Most effective have been multifaceted efforts that encompass not only knowledge acquisition, but also social skills, role-plays, communication techniques, assertiveness training, and improvements in self-efficacy. Finally, community participation (especially with hard-to-reach or stigmatized groups) and establishment of referral linkages to local health care agencies have been critical to program success. [References: 124]	
Colfax et al. (2004)	Through sequential cross-sectional surveys, the researchers examined intent to use home HIV test collection kits, actual use and barriers to use among persons at high risk for HIV infection. Common reasons for not using kits among participants aware of home test kits were concerns about accuracy, lack of in-person counselling and cost. Despite high rates of anticipated use, kits have had minimal impact on the testing behaviour of persons at high risk for HIV infection. Increasing awareness of kits, reducing price and addressing concerns about kit testing procedures may increase kit use, leading to more HIV testing by at-risk individuals	EX_1
Courtenay-Quirk et al. (2003)	As improved medical treatments have extended the lives of persons with HIV, prevention programs increasingly address these persons' ability to adopt and sustain HIV risk reduction behavior. Little is known about which HIV-seropositive persons would most likely use prevention programs or what program topics would best meet the needs of this population. A diverse sample of HIV-seropositive men who have sex with men (MSM, N = 206) rated their interest in a variety of program topics addressing physical and mental health issues. Topics specific to HIV prevention were of interest to most MSM, but the level of interest was generally lower than for other topics. Compared with White MSM, African American MSM had higher overall interest in programs addressing safer sex and programs addressing serostatus disclosure. Higher active coping was related to more interest in a broad range of program topics for HIV-seropositive men, programs addressing safer sex, and programs addressing serostatus disclosure. Risk behavior was not associated with program interests. Gaining a better understanding of interest in a variety of program topics among persons living with HIV is an important step in enhancing HIV transmission prevention programs	EX_2
Coyle et al. (2007)	Relatively little is known about how individuals (apart from gay and bisexual men) decide to have an HIV test and how, once they have presented for testing, they make decisions about proceeding through the testing trajectory. This paper reports on a qualitative study in which 55 mainly heterosexual respondents with low HIV risk were interviewed about their experiences of decision making around HIV testing. Reasons for deciding to be tested centred on a desire for reassurance and the circumstances of the respondents' current relationship. The most common relationship reason focused on a desire to confirm HIV status before beginning sexual relations or engaging in unprotected sex with a partner. Although some respondents recognized that other individuals had influenced their decision to be tested,	EX_1

	few said that pre-test counselling had been influential in this respect. Instead, it was said to have promoted feelings of 'ownership' of a decision which had already been taken prior to counselling. The potential effects of HIV testing on HIV risk behaviour were also examined and a non-significant increase in unprotected sex was reported between the month before the test and the month after. The implications of these findings for the provision of HIV testing services are explored	
Daigle et al. (1996)	The objective of this study was to report prevalence rates of adherence by HIV-seropositive individuals to medical recommendations for the treatment of HIV infection, a behavioral pattern referred to as AIDS secondary prevention. We report cross-sectional data (n = 2,593) from two household-based and two bar-based samples of gay/bisexual men, gathered in 1992 in Tucson, Arizona, and Portland, Oregon. The main outcome variables were prevalence of HIV antibody testing and adherence to recommended secondary prevention behaviors to prevent onset of AIDS symptoms. Approximately one-third of the gay/bisexual men in these samples do not know their current HIV status. Of the gay/bisexual men who do know that they are HIV-seropositive, approximately three-fourths adhere to each of the secondary prevention recommendations, as appropriate to their stage of disease progression. In a multivariate logistic model, three variables distinguished between HIV-seropositive men who did and did not adhere: perceived antiviral treatment norms (OR = 1.4, CI = 1.1-1.7), perceived efficacy of secondary prevention treatments (OR = 1.4, CI = 1.1-1.7), and quality of the relationship with one's health-care provider (OR = 2.5, CI = 1.6-4.0). These findings indicate that efforts to support AIDS secondary prevention behaviors can occur not only through health education to change the perceptions of at-risk communities about the options available to delay the onset of opportunistic infections among HIV-seropositive individuals but also by enhancing effective doctor/patient communication	EX_quant. views
de la Fuente et al. (2009)	Background: The purpose of this study was to estimate the prevalence of human immunodeficiency (HIV) testing in the general population; to analyse factors related to voluntary testing; and to describe the main reasons for testing, the kinds of health services where testing takes place and the relations between self-risk perception and HIV testing. Methods: A probability sample survey of health and sexual behaviour in men and women aged 18 - 49 years and resident in Spain in 2003 (n=10 980) was used. A combination of face-to-face and computer-assisted self-interview was used, and bivariate and multivariate logistic regression analyses were performed. Results: Some 39.4% (40.2% in men and 38.5% in women) had ever been tested, blood donation being the main reason for men and pregnancy for women. In the multivariate analysis, HIV testing was associated with foreign nationality, high educational level, having injected drugs and having a large number of sexual partners. In men, it was also associated with age 30 - 39 years, having had sex with other men and having paid for sex. About 29.3% of men and 32.8% of women had their last voluntary HIV test in primary healthcare centres, whereas only 3.4% of men and 3.6% of women had last been tested in sexually transmitted infection/HIV diagnostic centres. About 20.2% of men and 5.5% of women with risk behaviours had never been	EX_1

	tested. Conclusion: The proportion of men with risk behaviours who have never had an HIV test is unacceptably high in Spain. Scaling up access to HIV testing in this population group remains a challenge for health policies and research	
Delpierre et al. (2008)	We analysed mortality, morbidity and trends in the characteristics, including risk factors of late testing, in 6805 the patients newly diagnosed for HIV infection between 1 January 1996 and 1 July 2006. The proportion of individuals in high risk groups of infection, as MSM, has decreased over time whereas the proportion of those in low risk of infection, as heterosexual persons in couple with children, has increased. This population is mainly diagnosed late with major consequences on morbidity and mortality	EX_7
DiFranceisco et al. (1998)	A common assumption is that outreach-based HIV counseling and testing services reach a clientele with a higher HIV seroprevalence than clinic-based counseling and testing. To examine this assumption, we analyzed Wisconsin's anonymous counseling and testing client records for 62,299 contacts (testing episodes) from 1992 to 1995. Bivariate analysis of counseling and testing service setting (outreach-based or clinic-based) and HIV test results suggested that outreach contacts were 23% (odds ratio [OR], 1.23; 95% confidence interval [95% CI], 1.0-1.5) more likely to test HIV- seropositive than clinic-based contacts. Relations between HIV test outcome and variables for client age, race, gender, previous testing history, mode of risk exposure, and region, as well as service setting, were examined by logistic regression. An inverted relation between service setting and seropositivity (OR, 0.65; 95% CI, 0.50.8) indicated that, within some subpopulations, outreach contacts were significantly less likely to test HIV-positive than clinic-based contacts. Analysis of interactions among the covariates identified race as a critical codeterminant in the relation between service setting and test outcome. These results support retargeting outreach services to enhance their overall effectiveness. Specific recommendations include the need for aggressive strategies to better 'market' HIV counseling and testing to nonwhite populations, and to focus resources more selectively on gay/bisexual men of all races	EX_7
Do et al. (2006)	We sought to determine the prevalence, trends, and correlates of recent HIV testing (within the past year) among young Asian and Pacific Islander men who have sex with men (API MSM) in two U.S. cities. We conducted serial, cross-sectional, interviewer-administered surveys of 908 API MSM aged 15-25 years, sampled from randomly selected MSM-identified venues annually from 1999 to 2002. The prevalence of recent testing increased from 63% to 71% between the first and fourth year. Recent testing was most significantly associated with ethnicity and with knowledge of testing sites to which respondents felt comfortable going. Other correlates of recent testing included gay identity, comfort with sexual and API identity, having a main partner, social support, and recent unprotected anal intercourse. API MSM who had ever traded sex for material goods or shelter were as likely to have tested recently. HIV prevention campaigns should increase the awareness and availability of culturally appropriate testing sites and urge more frequent testing by young API MSM	EX_quant. views

Dorr et al. (1999)	Although past research has examined correlates of HIV testing, much of it has focused on demographic differences between tested and nontested individuals. The present study examined psychosocial differences between individuals seeking a voluntary HIV test at a college student health center and individuals who have never had an HIV test. Variables included in the model were four components of the health belief model (perceived susceptibility, perceived severity, perceived benefits, perceived barriers), as well as perceived norms, consideration of future consequences, and risky sexual behavior. Results suggest that individuals seeking an HIV test perceived more benefits of having a test, tended to perceive fewer barriers to having a test, were higher in consideration of Future Consequences, and engaged in riskier sexual behavior than individuals never having had an HIV test. Implications for both HN testing interventions and the health belief model are discussed	EX_1
Dougan et al. (2007)	It is more than 25 years since the first case of AIDS was reported in the United Kingdom. In December 1981 a gay man was referred to a London hospital with opportunistic infections indicative of immunosuppression. National surveillance began the following year, in September 1982, with the notification of deaths and clinical reports of AIDS and Kaposi's sarcoma plus laboratory reports of opportunistic infections. Since then epidemiological surveillance systems have evolved, adapting to, and taking advantage of advances in treatments and laboratory techniques. The introduction of the HIV antibody test in 1984 led to the reporting of HIV-positive tests by laboratories and the establishment of an unlinked anonymous survey in 1990 measuring undiagnosed HIV infection among gay men attending sexual health clinics. The widespread use of highly active antiretroviral therapies (HAART) since 1996 has averted many deaths among HIV-positive gay men and has also resulted in a large reduction in AIDS cases. This led to a need for an enumeration of gay men with HIV accessing NHS treatment and care services (1995 onwards), more clinical information on HIV diagnoses for epidemiological surveillance (2000 onwards) and the routine monitoring of drug resistance (2001 onwards). Twenty-five years after the first case of AIDS was reported, gay and bisexual men remain the group at greatest risk of acquiring HIV in the United Kingdom. Latest estimates suggest that in 2004, 26 500 gay and bisexual men were living with HIV in the United Kingdom, a quarter of whom were undiagnosed. In this review, we examine how national surveillance systems have evolved over the past 25 years in response to the changing epidemiology of HIV/AIDS among gay and bisexual men in the United Kingdom as well as advances in laboratory techniques and medical treatments. We also reflect on how they will need to continue evolving to effectively inform health policy in the future	EX_11
Evans and Farquhar (1996)	Objectives: To assess user and potential user views on the appropriateness, nature and quality of genitourinary medicine (GUM) provision in Bristol, UK and to develop a model for ongoing user consultation by GUM providers and purchasers. Design: This qualitative study was based on semi-structured interviews with service users, potential users, community informants and NHS professionals. Participants: 76 current, past or potential users, 10 community informants and 11 NHS professionals were interviewed. African-	EX_2

	Caribbean women and men, homeless men and women, lesbians and gay men, men and women living with HIV and women working in the sex industry were recruited to maximise the diversity of the sample. Results: The interviews demonstrated that participants commented positively on many aspects of the service available. The research also identified a number of areas where the service could be improved. Many users emphasised their initial difficulty in finding out about the department and the need for greater publicity and outreach. Users reported coming to the clinic with high levels of anxiety and negative preconceptions about the GUM service. Specific issues were identified for different groups of users. There was a strongly expressed need from a number of women and African-Caribbean men for completely single sex clinics. Conclusions: The research identified a number of issues of importance to service users that had not been identified in the department's own questionnaire surveys. The results support the premise that qualitative interviews can be successfully employed to access a diverse sample of users, and can offer insights significantly beyond those available from structured patient questionnaires	
Evers et al. (2006)	Investigated the effectiveness of an AIDS educator as a function of his HIV status and sexual orientation. A 2x2 factorial design was employed with 61 male and 75 female heterosexual 18-23 yr old undergraduates. Ss viewed 1 of 4 videotapes of an AIDS educator who introduced himself as either HIV-positive or negative and either heterosexual or homosexual. The videos were identical except for the introduction. Results show that all videos increased knowledge about AIDS. However, students' perceptions of risk increased only when they believed the educator was HIV-positive and heterosexual. Intentions to get tested for HIV increased when they perceived the educator as HIV-positive but declined when they thought he was HIV-negative. Results suggest the sexual orientation and HIV status of educators can impact their effectiveness. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	EX_1
Fenton (2007)	Despite aggressive prevention efforts, >1 million people in the United States are currently estimated to be living with human immunodeficiency virus (HIV) infection, with or without progression to acquired immunodeficiency syndrome (AIDS). Although men who have sex with men remain the group at highest risk, updated prevention strategies need to take into account the changing face of the epidemic, notably, the increasing burden of the disease among African Americans and young people. One of the major obstacles to current efforts in the United States to prevent HIV infection is the high rate of transmission among people who do not know they are infected. Many Americans still receive a diagnosis of advanced HIV disease, including AIDS, <= 1 year after HIV infection is diagnosed, suggesting that they have been HIV-positive and unaware of their serostatus for 5-10 years. Promoting access to and receipt of HIV testing is one of the Centers for Disease Control and Prevention's 4 main strategies for advancing efforts to prevent HIV infection. Making HIV testing a routine part of medical care would lead to earlier diagnosis of infection. This would in turn improve the prognosis for the infected individual and reduce the risk of onward transmission, particularly if effective counseling, education, and treatment are provided upon diagnosis.	EX_7

	New recommendations aimed at making HIV testing more routine in health care settings should have a substantial impact on these efforts, but it is crucially important that our strategies reflect the changing face of the epidemic	
Fenton et al. (2008)	Objectives: To detect and quantify current risk factors for HIV seroconversion among gay men seeking repeat tests at sexual health clinics. Design: Unmatched case control study conducted in London, Brighton and Manchester, UK. Methods: 75 cases (recent HIV-positive test following a negative test within the past 2 years) and 157 controls (recent HIV-negative test following a previous negative test within the past 2 years) completed a computer-assisted self interview focused on sexual behaviour and lifestyle between HIV tests. Results: Cases and controls were similar in sociodemographics, years since commencing sex with men, lifetime number of HIV tests, reasons for seeking their previous HIV tests and the interval between last HIV tests (mean= 10.5 months). Risk factors between tests included unprotected receptive anal intercourse (URAI) with partners not believed to be HIV-negative (adjusted odds ratio (AOR) and 95% confidence interval 4.1, 1.8 to 9.3), where increased risk was associated with concomitant use of nitrite inhalants, receiving ejaculate and increasing numbers of partners. Independent risk was also detected for unprotected insertive anal intercourse (UIAI) with more than one man (AOR 2.7, 1.3 to 5.5) and use of nitrite inhalants (AOR 2.4, 1.1 to 5.2). Conclusions: HIV serodiscordant unprotected anal intercourse remains the primary context for HIV transmission among gay men, with increased risk associated with being the receptive partner, receiving ejaculate and use of nitrite inhalants. Although the HIV transmission risk of URAI is widely acknowledged, this study highlights the risk of UIAI and that nitrite inhalants may be an important facilitator of transmission when HIV exposure occurs	EX_7
Fernandez et al. (2006)	Context and Purpose: This study examined the predictors of HIV testing and factors associated with intention to accept a free HIV test among 244 Hispanic migrant/seasonal farmworkers in South Florida. Methods: Time and space sampling procedures were used to recruit participants in public venues. Bilingual staff interviewed eligible respondents in these settings. Findings: Despite high rates of sexual risk, only 21% of respondents had been tested for HIV. The majority of those tested were females tested during prenatal care. In multivariable, logistic regression analyses, being female (odds ratio [OR] = 3.73), having at least 12 years of education (OR = 4.46), earning more than $201 per week (OR = 2.76), and ever having used marijuana (OR = 3.31) were positively associated with having been tested for HIV, while not being documented (OR = 0.24) and having rated one's health as "very good" or "good" (OR = 0.42) were negatively associated with testing. The multivariable predictors of intention to accept a free HIV test were having visited a health care provider andlor an emergency room in the past 12 months (OR = 1.97), having been tested for HIV (OR = 2.36), preferring an HIV test that used a finger stick for specimen collection with results given in 30 minutes (OR = 4.47), and worrying "some" or "a lot" about getting HIV (OR = 3.64). Women (OR = 0.52) were less likely than men to intend to accept a free HIV test. Conclusions: Our findings highlight the	EX_1

	importance of routinely offering HIV testing to sexually active individuals in high HIV prevalence areas. They also suggest the need to make testing more accessible to migrant and seasonal farmworkers	
Fisher et al. (1996)	This paper reports on the development, implementation, and evaluation of a social marketing campaign designed to recruit clients for Project ARIES, an AIDS prevention study funded by the National Institute of Mental Health. Marketing channels employed for the campaign included advertising in the gay press, generating coverage in the mainstream press, distributing materials to HIV testing centers and other health and social service providers, and displaying posters in gay bars and baths. While these approaches all succeeded in eliciting inquiries from individuals engaging in high risk sexual behaviors, they differed in several respects, including their ability to reach specific subgroups that are often underserved by more traditional programs, such as men of color, younger men, and men who self-report as being closeted. Promotional materials displayed in gay bars and baths resulted in the highest percentage of callers who, after inquiring about the program, decided to participate in the counseling. Coverage in the mainstream press was the most successful in reaching closeted men, men who were less active in the gay community, and individuals who did not self-identify as gay. Display and classified ads in the gay press produced the highest number of initial inquiries. Finally, recruitment of participants via materials distributed to HIV test sites and other service providers was the most effective in reaching men who were HIV-positive	EX_2
Flowers and Church (2002)	This paper reviews the literature regarding levels of HIV antibody testing amongst gay men and rationales both for and against testing. Whilst marked differences it) levels of reported testing were identified (regionally, nationally and across time), some consensus was found regarding reasons both for and against HIV antibody testing. Reasons for testing included accessing medical treatments, planning for the future and hoping for peace of mind. Reasons against testing included the negative psychological and social consequences of positive test results. The findings of the review are discussed in terms of recent medical discourses, which provide a powerful rationale for the uptake of HIV antibody testing amongst all gay men where treatments are available. Critically, we illustrate the lack of current research that seeks to reappraise HIV testing in the light of new HIV treatments, and discuss the implications for both research and practice	EX_11
Flowers et al. (2003)	This article describes the relationship between HIV testing and a range of psychosocial, sexual and socio-demographic variables. Trained research staff distributed a self-report questionnaire in the gay bars of Glasgow and Edinburgh, in May 2000. Questionnaires were completed by 803 men (a response rate of 78%). We present the results of both bivariate and multivariate analyses identifying key variables associated with never having had an HIV test. Thus we outline some psychosocial barriers to HIV testing. Multivariate analysis indicated that the most important factor associated with never having tested was fear of a positive result; this was particularly true for those men who reported higher levels of risky sexual conduct. We discuss the relevance of these findings in terms of presenting a psychosocial agenda	EX_quant. views

	which demands that stigma and the social exclusion of HIV-positive people should be addressed before gay men are encouraged to seek HIV testing	
Ford (1996)	Nurses in all areas will increasingly come into contact with people concerned about HIV infection. Although pre- and post-test counselling should be performed by those specially trained for it, sound knowledge about the physical, psychological, emotional and social effects of HIV will help nurses offer reassurance and advice	EX_11
Forsyth et al. (2008)	While most genitourinary (GU) medicine clinics achieve a high uptake for testing HIV in new patients, they may still miss testing those at highest risk. Point-of-care testing (POCT) and salivary samples are acceptable and feasible but have not yet been shown to increase uptake among high-risk patients (HRP). This study aimed to describe reasons why HRP decline HIV testing and whether offering POCT along with standard testing would increase the uptake of testing HIV in two London GU medicine clinics. Anonymous self-administered questionnaires were offered to all new and rebooked patients. Eight hundred and ninety-nine questionnaires were analysed of which 598 were HRP. Uptake of HIV testing was 77.1% among HRP and 65.8% among the rest. A total of 51.1% of HRP who declined HIV testing said they would be more likely to accept a POCT and 32.8% a salivary test. Introduction of rapid POCT for HIV would increase patient's choice and may increase the likelihood of HRP accepting an HIV test	EX_quant. views
Godin et al. (1997)	This study offers an explanation for the intention of 1,512 gay and bisexual men to be tested for the HIV antibody. Participants were recruited through 125 gay-identified venues (bars, bathhouses, community dances) across Canada. Self-administered questionnaires assessed respondents' intention to take the test in the next year, predictor variables (e.g., attitudes, the perceived social norm of the gay community, perceived behavioral control, and other constructs such as reasons for not being tested and importance of aspects of the test such as confidentiality), and sociodemographic variables. For this analysis, two groups were formed: men who had taken the HIV test in the past with negative or unknown results (Group A) and men who had not taken the test (Group B). The proportions of men who intended to take the test in the next year were 84.8% and 53.3% for groups A and B, respectively. For both groups, logistic regression indicated that the most important factors explaining intention were attitudes toward taking the test and perceived behavioral control. Additional variables specific to each group also contributed to explain intention. Thus, to enhance test-seeking among this population requires a consistent program of health education and facilitative policies	EX_quant. views
Gold and Karantzas (2008)	This study explored the thought processes that are associated with reluctance in gay men to be tested for HIV antibodies. The sample comprised 97 men who had not been tested for at least four years; 69 had never been tested. They were asked to imagine that someone had suggested that they be tested very soon and to identify, from the list provided, any negative thoughts prompted by this suggestion. The most commonly reported thoughts were that testing was unnecessary because	EX_quant. views

	risks had not been taken, that it was unnecessary because there were no symptoms, and that there was no urgency to be tested. Data were explored by means of factor analysis and comparisons across subgroups differing in risk level. The results are interpreted as indicating the use of rationalizations to buttress a decision not to be tested, the powerful influence on HIV decision-making exerted by salient perceptible features, and the 'status quo bias'. Techniques that could be used to encourage testing in gay men are discussed	
Golub (2004)	There are two competing hypotheses about the relationship between optimism versus pessimism and health behavior. On one hand, unrealistic optimism about invulnerability to health risks is hypothesized to cause decreased motivation for risk reduction and increased high-risk behavior. On the other hand, unrealistic optimism may provide individuals with specific health benefits, increase feelings of control over health status, and encourage positive health behaviors. This thesis examined the relationship between expectations about the likelihood of HIV infection and risk behavior among three cohorts of HIV-negative gay men. Study 1 examined a group of men who participated in a prospective natural history study of HIV infection, Study 2 investigated a cohort of patients presenting to clinic for non-occupational post-exposure prophylaxis (nPEP), and Study 3 examined a cohort of individuals receiving anonymous HIV antibody testing. Findings suggest different patterns of relationship between expectations and behavior for low- versus high-risk participants. For low-risk participants, pessimism was associated with higher levels of stress and negative affect (Studies 1 and 3), lower self-efficacy (Study 1), and more frequent thoughts about HIV, especially during sex (Studies 2 and 3). Among low-risk individuals, both extreme optimism and extreme pessimism appeared to motivate risk reduction, while more moderate expectancies were associated with lapsing into high-risk behavior (Study 1). For high-risk participants, both extreme optimism and extreme pessimism were associated with risk-taking, including increased substance use (Studies 1 and 2), especially before sex, and failure to complete the nPEP regimen (Study 2). In Study 3, unrealistic pessimism about HIV-status was associated with more high-risk behavior during the two-week waiting period for test results, and this relationship was especially strong for participants who had been low-risk prior to testing. It is possible that either extreme optimism or extreme pessimism about future infection may provide motivation to maintain risk reduction among low-risk individuals, but may provide rationalization to continue unsafe practices among high-risk individuals. Extreme pessimism appears to have an added cost while anticipating HIV test results. These findings have important implications for promoting risk-reduction within clinical settings. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	EX_7
Grant et al. (2006)	OBJECTIVES. We sought to examine the demographic, clinical, and behavioral characteristics; reasons for HIV testing; and factors that contribute to delays in entry into specialized HIV care after diagnosis of HIV infection among adolescents in an urban clinic in Georgia. METHODS. All of the data for this study were obtained solely by medical chart review. Demographic, clinical, behavioral, and HIV testing data were abstracted from	EX_1

	medical charts of 59 non-perinatally HIV-infected adolescents who were aged 13 to 18 years and entered care at the pediatric and adolescent HIV clinic of a Georgia hospital during 1999-2002. HIV-infected adolescents were compared by demographic, clinical, and behavioral characteristics as well as by circumstances surrounding HIV testing. Recent seroconversion was defined as having a documented negative or indeterminate HIV antibody test (confirmed) or a self-reported negative HIV test (probable) =6 months before HIV diagnosis. RESULTS. Of 59 HIV-infected adolescents, 35 (59%) were female and 56 (95%) were black/African American. Fifteen (25%) had =1 sexually transmitted infection when they entered care. All female (vs 38% male) adolescents were infected through heterosexual sexual intercourse; 9 (26%) were pregnant at the time of HIV diagnosis. Adolescents whose HIV was diagnosed at non-health care facilities entered HIV care much later than adolescents whose HIV was diagnosed at health care facilities (median: 108 vs 25 days). Approximately one half of adolescents had CD4 + T-cell counts 55 000 copies per mL at entry into care. Twenty-seven (46%) adolescents had a previous negative HIV test; 7 had confirmed recent seroconversion, and 3 had probable recent seroconversion. Among adolescents with a documented reason for testing, routine medical screening was the most frequent reason for HIV testing; few adolescents were documented as having self-initiated HIV testing. CONCLUSIONS. Strategies are needed to implement timely linkage to medical services of adolescents who receive a diagnosis of HIV infection at non-health care facilities and to increase HIV testing, prevention efforts, and recognition of recent HIV infection among sexually active adolescents. Copyright ¸ 2006 by the American Academy of Pediatrics	
Greensides et al. (2003)	Objective. The purpose of this study was to determine the levels of awareness and use of alternative HIV tests (home collection kit, oral mucosal transudate collection kit, and rapid tests) among people at high risk for HIV infection. Methods. Data were collected as part of an anonymous, cross-sectional interview study-the HIV Testing Survey (HITS)-conducted in seven states from September 2000 to February 2001. Three high-risk populations were recruited: men who have sex with men, injection drug users, and high-risk heterosexuals. Respondents were asked about their awareness and use of alternative HIV tests. Results. The overall awareness and use of the alternative tests was limited: 54% of respondents were aware of the home collection kit, 42% were aware of the oral mucosal transudate collection kit test, and 13% were aware of rapid tests. Among those aware of alternative tests, self-reported use of the tests was also low. The most common reasons given for not using alternative HIV tests were: preference for the standard test; concern that the results could be less accurate; and that alternative tests were not offered. Conclusions. The low levels of awareness and use of alternative HIV tests suggest that the potential for promoting testing among individuals at high risk for HIV by encouraging use of alternative HIV tests has not been fully realized. Alternative tests should be made more broadly available and should be accompanied by education about these tests for physicians and people at risk. Educational efforts should be evaluated to determine if promoting alternative HIV tests increases the numbers of people at risk for HIV who are tested	EX_quant. views

Grunseit et al. (1996)	This study defined and examined two groups of homosexually active men seeking an HIV-antibody test in a sample of 903 HIV-seronegative men who tested regularly. The 'event-related' (ER) group tested when circumstances motivated them. The 'time-related' (TR) group sought testing at regular time intervals not related to any particular event. Univariate and multivariate techniques were used to determine whether variables such as age, sexual identity, sexual relationships and practices distinguished between these two groups and were predictive of test frequency in the TR group. The results revealed the ER group was more likely to have a condom break in the last six months than the TR group, and the TR group was more likely to have had in excess of five HIV tests and to have been tested within the last six months. A discriminant function test did not reach statistical significance. Predictive of test frequency in the TR were current sexual relationships, safety (with respect to HIV transmission) of sexual practices with men, using HIV-testing as a preventative strategy, age and knowledge of safe sexual practice (R2 = 10.5%). These findings suggest that there is over-use of the test both by those whose practices are adequately minimising their risk, and some who may use the test as a substitute for safe sexual practice	EX_7
Gust et al. (2009)	Objectives: Participants who obtain an HIV test outside of an HIV vaccine efficacy trial could potentially unblind themselves which could result in differential behavior change and loss to follow-up based on assignment status. In a reanalysis of the VaxGen VAX004 data, the objectives were to determine: 1) the proportion of participants who were tested for HIV outside of the study (despite instructions not to do this) and reasons why; 2) demographic and risk factors associated with reported testing outside of the study; and 3) if outside testing was related to participant loss to follow-up. Methods: Analyses were restricted to men who have sex with men (MSM) who completed a survey at one or more annual visits in a randomized, double-blind, placebo-controlled efficacy trial of a bivalent rgp 120 vaccine conducted from 1998-2002. A generalized linear mixture model assessed associations with outside testing. Results: Despite instructions to the contrary, 16.9% (791/4670) of MSM reported being tested for HIV outside of the study, with the top two reasons being a) medical provider request (28.1%) and b) insurance requirement (17.1%). Increased odds of self-reported outside testing was associated with site location, reporting one or more sexually transmitted infections (STIs), joining the trial because of the belief that participation might confer some protection against HIV infection, engaging in unprotected anal sex, and being lost to follow-up. Decreased odds of self-reported outside testing was associated with perceived study arm assignment to vaccine or uncertainty about study arm assignment compared to placebo. Conclusions: To avoid biases such as differential risk behavior and loss to follow-up based on perceived assignment status, initiating additional procedures to reduce the likelihood of outside testing will be important to assure the validity of future study results	EX_7
Haidet et al. (2002)	To explore the conceptualization of risk by primary care physicians about behaviors associated with a relatively low risk of HIV transmission, we performed open-ended telephone interviews with 59 primary care physicians throughout the United States. During the interviews, physicians were asked	EX_1

	to respond to a series of clinical vignettes presenting situations where the risk of HIV transmission is relatively low or unknown. We performed a qualitative content analysis of physicians' responses to these clinical vignettes. We found that relatively few information-gathering statements were made in an effort to elicit the patient's perspective regarding risk, and that risk counseling by physicians often followed an 'all or nothing' heuristic that manifested itself as the advice to take maximum precautions under situations of any perceived risk, no matter how small. In addition, HIV testing was often incompletely explained. When combined with the all or nothing heuristic, this created advice that was potentially harmful by using testing as a means to achieve zero risk and forgo protective strategies in settings where patients may potentially be in the HIV-negative 'window' phase of infection. Published by Elsevier Science Ireland Ltd	
Handy and Kain (2008)	It is acknowledged that some gay/bisexual men and women prefer not to attend traditional genitourinary medicine (GUM) services. Point-of-care testing in the community may facilitate the testing of this group. Following the offer of funding from the Terrence Higgins Trust, three primary care organisations and two pharmaceutical companies, the Newcastle Primary Care Trust GUM clinic was able to offer outreach point-of-care HIV testing on one evening of each week, to an identified risk group in a city-centre location. This article reports on the findings of the study	EX_11
Handy et al. (2006)	Following concerns about asymptomatic people having to wait 2-3 weeks for a standard appointment for screening a new 'I'm OK?' drop-in, nurse-led clinic for the worried well was devised and evaluated after the first 21 weeks (509 patients). Without overt advertising the clinic has run to near capacity and has proved popular, with 98% stating that they would attend such a clinic in the future. The chlamydia detection rate was 9% in women and 4% in men, with one case of asymptomatic rectal gonorrhoea and two of HIV infection diagnosed allowing early treatment intervention. HIV testing was accepted by 94% of attendees and initial hepatitis B vaccination by 93% of homosexual/bisexual men. This approach deflects such routine cases, potentially allowing increased time at standard clinic sessions for those with clinical problems staffed by more experienced nurses and doctors. Its success has encouraged us to develop this concept as a cost-effective way of addressing 48-hour genitourinary medicine access. (PsycINFO Database Record (c) 2009 APA, all rights reserved) (journal abstract)	EX_1
Hart et al. (2002)	Objective: To investigate trends in homosexual men's sexual risk behaviour for HIV infection in Scotland. Methods: Cross sectional surveys in 1996, 1999, and 2002 were carried out in "gay" bars in Glasgow and Edinburgh, Scotland. 6508 men - 2276 (79% response rate) in 1996, 2498 (78%) in 1999, and 1734 (62%) in 2002. Results: In 1996, 10.7% of men surveyed and in 1999, 11.2% reported unprotected anal intercourse (UAI) with casual partners, compared with 18.6% in 2002 (p< 0.001). There was also a significant increase in men reporting that they "knew" their casual partners' HIV status, despite no increase in HIV testing among men who reported UAI with casual partners. In 2002, increases in UAI with more than one partner, in UAI with casual partners and in reporting seroconcordance remained	EX_7

	significant after adjusting for confounding factors including HIV testing status and demographic characteristics. Conclusions: High risk sexual behaviour among homosexual men in Scotland increased between 1999 and 2002. Men showed increased confidence of shared antibody status, despite no increase in HIV testing, or evidence of discussion of HIV status. Explanations for this must include consideration of a cultural shift in the perception of HIV and "prevention failure" on the part of governments and health agencies	
Hecht et al. (2000)	Objective: Name-based HIV reporting is controversial in the United States because of concerns that it may deter high-risk persons from being tested. We sought to determine whether persons at risk of HIV infection knew their state's HIV reporting policy and whether they had delayed or avoided testing because of it. Design: A cross-sectional anonymous survey. Methods: We interviewed 2404 participants in one of three high-risk groups: men who have sex with men (MSM), heterosexuals attending a sexually transmitted disease (STD) clinic, and street-recruited injection drug users (IDU). Participants were asked standardized questions about their knowledge of reporting policies and reasons for having delayed or avoided testing. We recruited in eight US states: four with name-based reporting and four without; all offered anonymous testing at certain sites. Results: Fewer than 25% correctly identified their state's HIV reporting policy. Over 50% stated they did not know whether their state used name-based reporting. Of the total, 480 participants (20%) had never been tested. Of these, 17% from states with name-based reporting selected concern about reporting as a reason for not testing compared with 14% from states without name-based reporting (P = 0.5). Comparing previously tested participants from states with name-based reporting to those from states without, concern about HIV reporting was given as a reason for delaying testing by 26% compared with 13% of IDU (P < 0.001), and for 26% compared with 19% of MSM (P = 0.06). Conclusion: Most participants did not know their state's HIV reporting policy. Name-based reporting policies were not associated with avoiding HIV testing because of worry about reporting, although they may have contributed to delays in testing among some IDU. (C) 2000 Lippincott Williams & Wilkins	EX_quant. views
Herek et al. (2003)	Data from a 1999 national telephone survey with a probability sample of English-speaking U.S. adults (N = 1,335) were used to assess how support for HIV surveillance policies is related to AIDS stigma and negative attitudes toward groups disproportionately affected by the epidemic. Anonymous reporting of HIV results to the government was supported by a margin of approximately 2-to-1, but name-based reporting was opposed 3-to-1. Compared with other respondents, supporters of name-based surveillance expressed significantly more negative feelings toward people with AIDS, gay men, lesbians, and injecting drug users. More than one third of all respondents reported that concerns about AIDS stigma would affect their own decision to be tested for HIV in the future. Implications for understanding the social construction of illness and for implementing effective HIV surveillance programs are discussed	EX_1

Heumann et al. (2001)	AIDS Care This record was compiled by CRD commissioned reviewers according to a set of guidelines developed in collaboration with a group of leading health economists. The technology considered was the implementation of referrals of high-risk seronegatives at human immunodeficiency virus (HIV) test sites in San Francisco to prevention services. The objective of the study was to determine the cost per HIV infection averted, based on the extent to which HIV prevention referrals are provided to and completed by high-risk persons. The analysis was performed from the perspectives of society and the San Francisco Department of Public Health (SFDPH). Cost-effectiveness analysis. The study population comprised high-risk seronegatives returning for test results by the SFDPH. The setting was primary care. The economic study was carried out in the USA. For the effectiveness data, the authors included studies published between 1993 and 1999 in their list of references. The cost data were obtained from a study published in 1997 and from programme managers at the SFPDH and at prevention programmes throughout San Francisco. The evidence was derived from completed studies. The authors calculated the number of HIV infections averted from the baseline incidence, the reduction in incidence due to prevention, and the number of HIV-negatives in the risk group completing referrals from all city test sites. The clinical and epidemiological data obtained from the review were: the HIV incidence rates, the effect of prevention services on the HIV incidence rates, referral rates, and completion rates. Not reported. Not reported. Not reported. Five published studies provided evidence of effectiveness. The authors used data from the included studies selectively. Not reported. The measure of benefit considered was the number of HIV infections averted. The cost/quantity boundaries adopted for the costing were those of the health care system and society. The quantities and the costs were not reported separately, and only total figures for main areas of expenditure were reported. The estimate of lifetime costs of HIV infection was taken from a published study. It was not stated whether any discounting was applied in the study. Broad expenditure items included HIV medical costs, cost of referring a patient to prevention, and the patient costs of attending the prevention service. A patient opportunity cost defined as "lost work time" was mentioned in the study. However, it was unclear whether this was valued. The resource consumption and unit costs of referring a patient to prevention were obtained from programme managers at the prevention services used by testing clients in San Francisco, and the patient costs were based on local averages. No indirect costs were included in the study. US dollars ($). The costs were treated deterministically. Variability in the data was examined. To obtain "best case" and "worst case" ranges for each parameter, the HIV incidence rates, effect of prevention on HIV incidence rates, referral rates, follow-through rates, marginal cost of the prevention service, and lifetime costs of HIV infection and acquired immune deficiency syndrome (AIDS) were examined. For the city-wide population of 6,266 high-risk seronegatives receiving test results, the provision of prevention referrals averts 2.0 infections per year. For the sexually-transmitted disease (STD) clinic population of 289, the programme averted 0.01 infections. The total referral list and pamphlet production costs were $9,140. The total training costs were $1,564 from the SFDPH perspective and $2,813 from a societal	EX_7

	perspective. The lifetime costs of HIV infection and AIDS used for the analysis were $130,000. An overall figure for the total costs, including all areas of expenditure, was not computed. The cost-effectiveness ratios were computed from the societal and the SFDPH perspectives. From the societal perspective, the cost per HIV infection averted was calculated as (all referral and prevention costs) minus (the number of HIV infections averted multiplied by the lifetime medical costs of treating a person with HIV), divided by the number of HIV infections averted. The same method was considered for computing the cost-effectiveness ratios from the SFDPH perspective, but without considering the lifetime medical costs of treating a person with HIV. The total cost per infection averted was $20,738 for the SFDPH, and there was an overall programme saving of $43,765 for society. Cost-effectiveness was estimated to be very sensitive to uncertainty in HIV incidence and the effect of prevention of HIV incidence. The cost per infection averted ranged from $5,833 to $44,505 for the SFDPH, and from a $105,754 net saving to a cost of $7,760 per HIV infection averted for society. The range in HIV treatment costs yielded wide variation in societal cost-savings (ranging from $108,953 to $810). The provision of human immunodeficiency virus (HIV) prevention referrals to high-risk seronegatives receiving antibody testing imposes significant costs, but has attractive cost-effectiveness when applied to a large high-risk population. The study suggested that San Francisco stands to benefit from systematically implementing Centers for Disease Control and Prevention CTRPCRS (Counseling, Testing, Referral and Partner Counseling and Referral Services) guidelines to provide prevention referrals to high-risk seronegatives. Failure to do so would, therefore, be an important missed public health opportunity. Holtgrave DR, Pinkerton SD. Updates of cost of illness and quality of life estimates for use in economic evaluations of HIV prevention programs. Journal of Acquired Immune Deficiency Syndromes 1997;16:54-61. Marx R, Hirozawa AM, Chu PL, Bolan GA, Katz MH. Linking clients from HIV antibody counselling and testing to prevention services. Journal of Community Health 1999;24:201-14. Marx R, Sebesta D, Hirozawa A, Liu Y, Khan J, Katz MH. HIV counselling and testing referrals given to high risk negatives increase prevention use (poster). XII World Aids Conference; 1998 Jun 28 - Jul; Geneva, Switzerland. 11571010	
Hightow et al. (2004)	Objective: This study assessed the extent of and characteristics associated with repeat HIV testing in persons presenting to a sexually transmitted disease (STD) clinic. Methods: The study population included all 101 newly diagnosed HIV-infected subjects and 411 matched HIV-uninfected subjects identified over a 5-year period in a publicly funded STD clinic in the southeastern United States. Results: Of the 508 subjects (99%) with available records, 160 (32%) had tested previously. Age, race, return for posttest counseling, and the client's stated reason for coming to the clinic were associated with repeat testing. Among the 160 subjects who had tested previously, self-identifying as a man who has sex with men or having a history of incarceration was strongly associated with HIV seroconversion (adjusted odds ratio [OR], 51.82; 95% confidence interval [CI], 9.10-295.13; adjusted OR, 83.98, 95% CI, 17.26-408.69, respectively). Presenting for STD-related reasons (STD symptoms or requesting an STD check) had a negative association with HIV seroconversion (adjusted OR, 0.07; 95% CI,	EX_7

	0.01-0.90) compared with presenting for the sole purpose of requesting an HTV test. Conclusions: Repeat HIV testing is common among patients receiving services at an STD clinic. The role of repeat testing in HIV prevention efforts is complex and poorly understood. Results from this study could be used to identify and target those testing previously at highest risk for contracting HIV for risk-reduction interventions	
Hopkins et al. (1998)	Controversy over HIV reporting in Washington State raised concerns that name-to-code reporting might reduce HIV testing. We assessed HIV testing and the influence of reporting among people at risk for HIV. An anonymous survey was conducted 9 months after HIV reporting began. Recruitment for men who have sex with men was at bars; high-risk heterosexuals at a sexually transmitted disease clinic; and injection drug users at needle exchange sites. Eighty-nine percent of 267 participants had been tested for HIV at least once but only half reported testing regularly. Injection drug users and men who have sex with men were more likely than HRH to report regular testing. Main reasons for delaying testing were thinking that HIV exposure was unlikely or not wanting to think about being HIV-positive; concern about government reporting was cited by only 2%. Over half the respondents hadn't heard about the new name-to-code HIV reporting mechanism, although 69% thought there was some type of HIV reporting. Only 18% correctly identified the mechanism of HIV reporting. HIV prevention programs should focus on the most common reasons for delaying or avoiding HIV testing: believing that one has not been exposed to HIV, and the fear of learning that one is HIV-positive	EX_quant. views
Houston et al. (1998)	The purpose of this study was to examine the HIV-testing behaviour of Canadians aged 15 years and older. Questions on HIV testing were asked as part of a Canada-wide random digit dialling telephone survey conducted in December 1995 to January 1996 on health practices and attitudes toward health care in Canada (n=3123). Including blood donation and insurance testing, 40.4% of men and 30.4% of women had been tested for HIV. Excluding blood donation and life-insurance testing (voluntary testing), 17.8% of men and 15.6% of women had been tested. In multivariate analyses, factors independently associated with voluntary testing among men were: having had sex with a man (OR=16.8), injection drug use (OR=5.8), having had a partner at high risk(OR=2.5), having received blood or clotting factor (OR=2.3), being younger than 45 years of age (OR=1.8), living in a city of over one million (OR=1.7), and making less than $30,000 a year (OR=1.6). For women, factors independently associated with voluntary testing were having received blood or clotting factor (OR=3.9), having had a high-risk partner (OR=3.5), being younger than 45 years of age (OR=2.4), having had sex with a man (OR=2.3), and being unattached (OR=2.0). Results indicated that those at risk are more likely to be tested. It is of concern, however, that many of those reporting risk factors have not been tested. A better understanding of HIV testing behaviour is needed to improve the planning and evaluation of prevention and counselling services	EX_7
Hutchinson et al. (2006)	AIDS The authors concluded that there is strong evidence that rapid testing considerably increases the proportion of patients who receive their human	EX_7

	immunodeficiency virus test results. These conclusions appear to be supported by the data presented. However, details of review methods and a validity assessment were not reported, which makes it difficult to assess the reliability of the evidence. This record is a structured abstract written by CRD reviewers. The original has met a set of quality criteria. Since September 1996 abstracts have been sent to authors for comment. Additional factual information is incorporated into the record. Noted as [A:....]. To evaluate the effects of alternatives to conventional human immunodeficiency virus (HIV) counselling and testing (CT) on the receipt of HIV test results. Studies evaluating voluntary HIV-CT interventions that included rapid, oral fluid, urine, home testing, or other methods of testing for the HIV, and which eliminated the need for a return visit for test results and were conducted in the USA, were eligible for inclusion. Studies that evaluated mandatory HIV-CT testing and studies set in perinatal or occupational settings were excluded. The included studies evaluated rapid testing (using the SUDS and Oraquick HIV-I Rapid Antibody Test), oral fluid enzyme-linked immunoassay (non-rapid), telephone post-test counselling and home collection tests. All but one study compared alternative tests with conventional serum enzyme-linked immunoassay; one study compared the delivery of test results by telephone versus in-person. The included studies varied with respect to study setting: sexually transmitted disease clinics, emergency departments, and HIV testing and outreach venues. All of the studies were set in urban areas of the USA. Inclusion criteria were not specified in term of the participants. All of the primary studies were in people with risk behaviours for HIV, including men who have sex with men, injecting drug users, homeless youths and high-risk heterosexuals. Studies that assessed receipt of HIV test results and reported (or made available) sufficient data to permit the calculation of an effect size were eligible for inclusion. In the review, the receipt of rapid test results was defined as the receipt of preliminary positive rapid test results. The review also assessed test acceptance, linkage into medical care and false-positive rapid test results. Studies with a control or comparison group were eligible for inclusion in the review. MEDLINE, EMBASE and AIDSLINE were searched from 1990 to March 2005 for English language reports. In addition, abstracts from the International AIDS Conferences (2000, 2002 and 2004) and National HIV Prevention Conferences (2003 and 2005) and reference lists from retrieved studies were screened, and experts were contacted. Abstracts and unpublished studies were eligible. The authors did not state that they assessed validity. The authors did not state how the papers were selected for the review, or how many reviewers performed the selection. Two reviewers independently extracted the data using a form and resolved any disagreements through discussion. For each study, the relative risk (RR) with 95% confidence interval (CI) was calculated. For studies in which the event rate was zero, 0.5 was added to each cell to enable the calculation of an RR. Where required, authors were contacted for sufficient data to calculate an effect size. Studies that reported data for separate populations or study settings were treated as separate independent studies. Pooled RRs and 95% CIs were calculated using a random-effects model (DerSimonian and Laird) when heterogeneity was suggested. The potential for publication bias was assessed using Begg's funnel plot. Statistical heterogeneity was assessed using the Q	

	statistic and its magnitude measured using the tau statistic. The meta-analysis was repeated after adjusting study weights to take account of control groups in studies contributing more than one effect size. A subgroup analysis was used to examine the effect on rapid testing intervention results of study setting, HIV status, study design (randomised or not) and type of control group (concurrent or historical). Fifteen studies reported in 13 articles were included in the review (n=21,096). These studies provided 17 measures of effect. Four studies reporting 8 measures of effect were randomised controlled trials (RCTs). Nine studies reporting 14 measures of effect were non-randomised studies with either concurrent or historical control groups. The participants were significantly more likely to receive HIV test results after alternative testing compared with conventional testing (RR 1.61, 95% CI: 1.36, 1.90, p<0.0001). There was strong evidence of heterogeneity (p<0.0001). The results were similar after adjusting for over-representation of control groups. Intervention effects were largest for rapid testing (RR 1.80, 95% CI: 1.46, 2.22, p<0.0001; 12 studies; strong evidence of heterogeneity, p<0.0001), followed by use of the telephone to deliver results (RR 1.38, 95% CI: 1.24, 1.47, p<0.0001; 2 studies; no evidence of heterogeneity) and home collection testing (RR 1.28, 95% CI: 1.07, 1.53, p<0.01; 1 study). Rapid testing interventions showed higher rates of receipt of HIV tests when set in emergency departments (compared with sexually transmitted disease clinics and outreach settings), for HIV-negative participants (compared with HIV-positive participants), in non randomised trials (compared with randomised trials), and among studies using historical controls (compared with concurrent controls). Of these meta-analyses, only analyses involving HIV-positive participants and RCTs showed no significant heterogeneity. There is strong evidence that rapid testing considerably increases the proportion of patients who receive their HIV test results. The review addressed a clear question that was defined in terms of the intervention, outcomes and study design. Several relevant sources were searched and attempts were made to minimise publication bias. The inclusion of only English language reports appears reasonable in view of the restriction to studies conducted in the USA. Study validity was not assessed, thus the results from these studies and any synthesis might not be reliable. The methods used to select studies and extract the data were not described, so it is not known whether any efforts were made to reduce reviewer errors and bias. The studies were combined in a meta-analysis regardless of study design. However, statistical heterogeneity was assessed and various potential sources of heterogeneity (including study design) were examined and discussed. The forest plot indicated that although heterogeneity was present all studies showed a similar direction of treatment effect; the authors discussed the implications of this. The authors' conclusions appear to be supported by data in the review, but the absence of reporting of review methods and validity assessment means it is difficult to assess the reliability of the evidence. Practice: The authors did not state any implications for practice. Research: The authors stated the need for further research to record the frequency of false-positive rapid test results and the effect of false-positive results on patients, and a need to assess other outcomes including test acceptance and linkage to care and preventive services. 16868440	

Jepson et al. (2000)	Objectives: To carry out a systematic review to examine factors associated with the uptake of screening programmes and to assess the effectiveness of methods used to increase uptake. In particular, the following questions were addressed: What factors (i.e. determinants) were associated with uptake of screening for different diseases? What interventions were shown to increase uptake of screening programmes (or informed uptake) within populations?	EX_1
Johnson et al. (2008)	This supplemental issue of the Journal of Homosexuality presents research that explores a variety of health care issues encountered by lesbian, gay, bisexual, transgender and intersex (LGBTI) population groups in the United States over the 10-year period from 1993 to 2002. Topics include access to health care, utilization of care, training of medical and mental health providers, and the appropriate preparation of clinical offices and waiting areas. Authors used a variety of community-based public health research methods, including participant and provider surveys and retrospective chart reviews of patients, to develop this body of research, providing a recent-historical perspective on the complex health care and health-related needs of sexual and gender minorities. Particularly for transgender and intersex populations, the state of research describing their health care needs is in its infancy, and much remains to be done to design effective medical and mental health programs and interventions	EX_11
Johnson et al. (2009)	Objectives. We sought to assess risk exposures, health care access, and screening rates for HIV and sexually transmitted infections (STIs) among men who have sex with men (MSM) in Massachusetts. Methods. We used a modified respondent-driven sampling method to collect data between March 2006 and May 2007. Overall, 126 MSM completed a survey. Results. Seventy percent of participants reported unprotected receptive anal intercourse with at least 1 nonmonogamous male partner; 50% reported having had a previous STI. Although 98% had visited a health care provider in the previous year, 39% had not been screened for STIs during the previous 2 years. Bisexual respondents were less likely to have told their health care providers that they engage in male-to-male sexual contact (OR=4.66; P<.001), less likely to have been tested for STIs during the previous 2 years (OR=6.91; P<.001), and more likely to engage in insertive anal intercourse without a condom with an HIV-infected partner (OR=5.04; P<.005) than were non-bisexual respondents. Conclusions. Clinicians need to assess sexual risk-taking behaviors and more routinely screen for STIs among sexually active men regardless of disclosure of a history of having sex with men. (Am J Public Health. 2009;99:S187-S192. doi: 10.2105/AJPH.2007.127464)	EX_1
Jones et al. (2009)	Due to the lack of education and the stigma attached to HIV testing, African American men are less likely to seek outreach services; therefore they are often unaware of their HIV status. Stigmatization of homosexuality in	EX_7

	communities of color may also influence the availability of HIV/AIDS education and services; compounded with the fact that access to appropriate health care may be limited in these communities. While infection rates among African American men having sex with men (MSM) are well documented, research on effective interventions is not, and is particularly limited for these men who are substance users and participate in the sex trade for drugs. This article explores and documents the experiences of African American MSM in a southeastern metropolitan city who are involved in the commercial sex trade, and presents the results of a focus-group investigation conducted specifically to gain input about accessing outreach services. (PsycINFO Database Record (c) 2009 APA, all rights reserved) (journal abstract)	
Kalichman et al. (1996a)	Social learning theory-based models have recently provided the foundation for a series of twelve controlled human immunodeficiency virus (HIV) risk reduction intervention studies that have examined sexual behavior change. These interventions have been tested with adolescents, gay and bisexual men, inner-city women, college students, and seriously mentally ill adults. We report the first meta-analysis of these intervention studies. We found that, as expected, the mean weighted effect of HIV-risk reduction interventions on behavioral outcomes was positive and strongly significant (d+ = 0.25). Moreover, the studies' effect sizes were consistently positive, ranging from 0.11 to 0.53, and were largest when the outcomes were measured close in time to the intervention. We discuss other methodological challenges that, if solved, should enhance the success of future HIV-risk reduction interventions	EX_2
Kalichman et al. (1996b)	Substantial numbers of persons at risk for HIV infection do not seek HIV testing and factors influencing testing decisions are not well understood. To identify psychological characteristics of persons who remain unwilling to receive HIV testing, we surveyed patients of an inner-city sexually transmitted disease (STD) clinic (n = 181). Participants completed an anonymous survey and were grouped on the basis of HIV testing history and compared on measures of testing perceptions, attitudes, and decision making influences. Results showed that untested participants feared testing and had a sense of not knowing if they needed to be tested. In contrast, participants who were getting tested believed that testing would help them feel better about their health. Results also showed that participants lacked accurate information about some HIV testing procedures. We conclude that identifying concerns which inhibit seeking HN testing can be useful in developing effective methods of promoting HIV resting	EX_1
Kalichman et al. (1997)	HIV antibody testing is a critical facet of national AIDS prevention strategies and increasing numbers of persons are tested each year. Research has shown that a significant number of men who have sex with men are repeatedly tested for HIV antibodies, and many are tested regularly every 6 months. This study investigated the prevalence of repeat testing (having been tested three or more times) and regular testing (having been tested three or more times and getting tested every 6 months), and their association to testing attitudes and sexual behaviors. We found that 66% of	EX_quant. views

	253 HIV seronegative gay and bisexual men surveyed at a large gay pride festival had been repeatedly tested, and 47% were tested regularly. Repeat testing was associated with knowing people with HIV or AIDS, whereas regular testing was associated with younger age and not being in an exclusive sexual relationship. Both repeat and regular testers held more positive health-related attitudes about testing than nonrepeat and nonregularly tested men, respectively. Contrary to previous research, repeat testing was not associated with unprotected anal intercourse or unprotected oral sex. However, both repeat and regular testing were positively related to condom use during anal intercourse as well as having multiple protected anal intercourse partners. We therefore conclude that both repeat testing and higher rates of condom use reflect positive health attitudes and that repeat testing may function to meet the needs of some men who have sex with men	
Kaplan and Satten (2000)	This paper presents models for repeat HIV screening under conditions of constant low HIV incidence. The models reveal a direct link between the prevalence of undetected HIV infection and the screening interval between repeat HIV tests. We show how to select screening intervals that either achieve a given HIV prevalence level, or optimally balance the cost of repeat HIV testing against the cost of HIV infection. Alternatively, given an existing repeat screening program, the model implies that cost of infection for which the given screening interval is optimal. The method also suggests how to select an HIV testing technology. The models are applied to existing repeat testing programs in the U.S. Army and among legal commercial sex workers in the state of Nevada in the Far West of the United States	EX_1
Kelen et al. (1999)	Annals of Emergency Medicine This record was compiled by CRD commissioned reviewers accordingto a set of guidelines developed in collaboration with a groupof leading health economists. Emergency department-based HIV screening and counselling. To determine the cost-effectiveness of a voluntary HIV screening programme based in an emergency department (ED). Rapid HIV testing was compared with standard HIV testing. During phase 1, a standard HIV test was carried out. During phase 2, a rapid HIV test carried out in the hospital laboratory was available. During phase 3, a rapid HIV test carried out in an ED satellite laboratory was available. Cost-effectiveness analysis. Patients attending an emergency department. Hospital setting. This study was carried out at an inner-city university teaching hospital (Johns Hopkins Hospital), Baltimore, USA Effectiveness data were collected between the summer of 1993 and the summer of 1995. The price year was not stated. Effectiveness data were derived from a single study. No modelling was undertaken. Prospective cohort study carried out at a single centre. The measure of benefit was the number of patients who were confirmed as HIV-positive. Discounting was not applied due to the short period of the study (< 1 year). Quantities and costs were reported separately. The direct costs included the costs related to effort and laboratory testing. Costs were calculated on a per-approached patient, per-enrolled and counselled, and per-identified positive patient basis. The quantity/cost boundary adopted was that of the hospital. The estimation of quantities and costs was based on actual data. The price year was not	EX_1

	stated. Not included. US dollars ($). Not reported. Not reported. 78 out of 1,448 patients (5.4%) were HIV seropositive. The number of HIV-positive patients among those admitted and those discharged from the ED was 21 and 55, respectively. In phase 2, 2 patients (2.6%) were confirmed to be positive. In phase 3, 13 patients (3.3%) were confirmed as seropositive. Among the 467 patients who underwent rapid testing, 15 (3.2%) were confirmed to be HIV seropositive. Costs for the standard test per subject approached, per subject counselled, and per positive patient were $18, $39, and $601, respectively. Similar costs for the rapid test were $18, $36, and $1,124, respectively. The annualised direct cost of a programme running 8 hours per day for 365 days per year was an estimated $141,975, including testing and administrative costs. The cost and effectiveness results were not combined into a cost-effectiveness ratio. The authors believe that this study demonstrates the potential utility of offering voluntary HIV screening in the ED at a cost similar or better than that in other settings. These results should be confirmed by a study that examines standard practice and that targets screening at certain patient groups to increase cost-effectiveness. 1. Lurie, P, Avins, A L, Phillips, K A, Kahn, J G, Lowe, R A, Ciccarone, D. The cost-effectiveness of voluntary counselling and testing of hospital inpatients for HIV infection. Journal of the American Medical Association 1994;272(23):1832-1838. 2. Farnham P G, Gorsky R D, Holtgrave D R, Jones W K, Guinan M E. Counseling and testing for HIV prevention: costs, effects, and cost-effectiveness of more rapid screening tests. Public Health Reports 1996;111(1):44-53. 3. Holtgrave D R, Qualls N L & Graham J D. Economic evaluation of HIV prevention programs. Annual Review of Public Health1996;17:467-488. 4. Owens D, Nease R, Harris R. Cost-effectiveness of HIV screening in acute care settings. Archives of Internal Medicine 1996;156:394-404. 9922409	
Kellerman et al. (2002)	Objectives: We determined proportions of high-risk persons tested for HIV, the reasons for testing and not testing, and attitudes and perceptions regarding HIV testing, information that is critical for planning prevention programs. Methods: Cross-sectional interview study of persons at high risk for HIV infection (men who have sex with men [MSM]; injection drug users [IDUs]; and heterosexual persons recruited from gay bars, street outreach, and sexually transmitted disease clinics) among six states participating in the HIV Testing Survey (HITS) in 1995 to 1996 (HITS-I) and 1998 to 1999 (HITS-II). Results: Overall testing rates were lower in the HITS-I (1226/1599 [77%]) than in the HITS-II (1375/1711 [80%]) (p =.01). Persons <25 years old tested less frequently than those greater than or equal to25 years old (HITS-I: 71% vs. 78%, respectively, p =.007; HITS-II: 63% vs. 85%, respectively, p <.001). The main reasons for testing and not testing were the same in both surveys, but the proportions of reasons for not testing differed (e.g., "unlikely exposed to HIV" [HITS-I (17%) vs. HITS-II (30%), p <.0001], "afraid of finding out HIV-positive" [HITS-I (27%) vs. HITS-II (18%), p <.0001]). Attitudes regarding HIV testing differed among tested and untested respondents, especially among MSM. Conclusions: HIV testing rates were higher in the HITS-II, but testing rates decreased among the youngest respondents. Denial of HIV risk factors and fear of being HIV-positive were the principal reasons for not being tested. Availability of new HIV therapies	EX_quant. views

	may have contributed to decreased fear of finding out that one is HIV infected as a reason to avoid testing. The increased proportion of persons at risk who did not test because they believed they were unlikely to have been exposed highlights the need for prevention efforts to address risk perceptions	
Kellerman et al. (2006)	Although HIV information is widely available in this country, little is known about how commonly used HIV prevention activities reach persons at highest risk for HIV. In this paper, we describe the extent to which HIV prevention strategies reach a sample of high-risk persons and whether such exposure correlates with having been tested for HIV. Data are from the 2000 HIV Testing Survey, an anonymous interview study of men who have sex with men (MSM), injection drug users (IDU), and high-risk heterosexuals (HRH), recruited from appropriate venues in seven states and New York City. We report the proportion of persons exposed to three types of interventions: information (media messages, brochures), counseling or skills-building (group counseling, role play, calling an AIDS hotline), and prevention supplies (provision of condoms, bleach kits), stratified by HIV testing status (ever, never). Exposure to information interventions was high among 2491 respondents (85%-96%) and did not differ by testing status. Use of counseling or skills-building interventions varied by testing status for IDU (8% untested versus 41% tested, p < 0.01) and HRH (14% versus 20%, p = 0.03) but not MSM (15% versus 23%, p = 0.08). Among tested IDU, those receiving bleach kits were more likely to report consistent bleach use when injecting with nonsterile needles (25% versus 9%, p = 0.003). Exposure to HIV prevention information is high but exposure to counseling or skills-building interventions is less common and more prevalent among those previously tested. Prevention initiatives should focus on counseling and testing, skills-building, and prevention supplies	EX_7
Kellogg et al. (1999)	n/a	EX_7
Kim et al. (2007)	American Journal of Public Health The authors identified eighteen behavioural best-evidence interventions for reducing HIV-related risk behaviours or sexually transmitted disease, and also areas in which further research is required. Some aspects of this review were well-conducted but the inclusion of only studies reporting positive results biased the evidence presented, hence the conclusions cannot be considered reliable. This record is a structured abstract written by CRD reviewers. The original has met a set of quality criteria. Since September 1996 abstracts have been sent to authors for comment. Additional factual information is incorporated into the record. Noted as [A:....]. To identify interventions with the best evidence of efficacy in reducing the risk of human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) and sexually transmitted disease (STD). Studies that evaluated behavioural HIV/AIDS or STD interventions conducted in the USA or its territories were eligible for inclusion. Studies had to be targeted at individuals or small groups. Interventions delivered to communities or schools, substance abuse interventions, needle exchange programmes, interventions aimed strictly at HIV testing or partner	EX_7

	counselling and referral services, and policy interventions were excluded. Most of the staff delivering the interventions were non-peer 'facilitators' or 'group leaders', peers, counsellors and therapists matched to the participants targeted. The duration of the interventions ranged from 1 to 6 sessions. The interventions varied with respect to content; most included skill building (technical, personal and interpersonal). Interventions that explicitly targeted school-based youths were excluded. Most of the included studies targeted heterosexual adults; other studies targeted drug users, HIV-positive individuals and men who have sex with men (MSM). In most studies, the majority of participants belonged to minorities (including African Americans and Hispanics). Some studies included only women or adolescent females. All but one of the interventions were conducted in urban geographical areas, and most were conducted in people with relatively low socioeconomic status. Studies that reported relevant biological measures, HIV-testing behaviours, or sexual or drug-injection behaviours that were directly related to the risk of HIV transmission were eligible for inclusion. Studies were only included if they reported a pre-specified level of evidence; this was defined as a statistically significant (p<=0.05) and positive effect of the intervention for at least one relevant outcome, at least 3 months post-intervention and no significant negative effects. Randomised controlled trials and prospective studies with an appropriate, concurrent comparison group that made efforts to minimise bias were eligible for inclusion. The duration of follow-up in the included studies ranged from 3 to 12 months post-intervention. EMBASE, MEDLINE, PsycINFO and Sociofile, including AIDSLINE before December 2000, were searched in November 2004. Manual searches were also conducted for articles that had not yet been indexed (to January 2005) and for articles from 32 pre-specified journals in the last 6 months. In addition, reference lists, HIV/AIDS e-mail discussion lists and reviewed unpublished manuscripts submitted to the review team by the study authors were screened. Studies had to be published or accepted for publication between 2000 and 2004. Studies were only included if they met pre-specified best-evidence criteria for: study design (see 'Study Designs' section, and at least 50 participants in each intervention group); quality of implementation (assessing the outcomes at least 3 months after the intervention with at least 70% of enrolled participants retained in each arm; quality of analysis (use of cluster-level analysis where appropriate, intention-to- treat analysis); and strength of evidence (see 'Outcomes' section). Studies that were considered to show any fatal flaw were also excluded. The review group reached consensus on eligible studies. Members of the review team conducted the searches. The review group reached consensus on eligible studies. Pairs of trained reviewers extracted efficacy-related data. Any disagreements were resolved by discussion. Authors were contacted for missing data and formal documentation regarding the intervention. For each study, statistically significant outcomes were tabulated. The characteristics of the included studies were summarised in the text of the review. Differences between the studies were discussed in the text. Eighteen studies (n=12,446) were included. The sample size ranged from 175 to 4,295. Significant reductions were reported in unprotected sexual intercourse (12 studies), number of sexual partners (4 studies), injection drug-use or needle-sharing	

	behaviours (3 studies), sex-related risk behaviours among drug users (4 of 5 studies) and injection-related risk behaviours in drug users (3 of 5 studies). Significant increases were reported in condom use (8 studies). Four studies reported significant reductions in new cases of STDs at least 12 months post-intervention. The one study that assessed HIV incidence reported no significant reduction in the incidence associated with the intervention. Eighteen behavioural interventions with proven efficacy for reducing risk behaviours for HIV or STD were identified. Further research is required. The review addressed a clear question that was defined in terms of the intervention, outcomes and study design. Several relevant sources were searched but, although unpublished manuscripts were eligible, only studies reporting positive results were included and this introduces bias. In addition, it was not clear whether any language restrictions had been applied. Methods were used to minimise reviewer errors and bias in the study selection, validity assessment and data extraction processes. Only studies meeting pre-specified quality criteria were included. However, one of these quality criteria was that only studies showing a statistically significantly positive effect of the intervention in at least one outcome, and no negative effects, could be included. This was reflected in the fact that 100 studies met the eligibility criteria but only 18 were included once the criteria for best evidence were applied. This meant that the findings of the review were positively biased towards the interventions included, and any attempts to minimise publication bias were negated by these inclusion criteria. It is not possible to tell how many of the 82 excluded studies looked at the same interventions as the 18 included studies but found a negative effect or no effects. In view of the heterogeneity among the studies, a narrative review that summarised aspects of the interventions and characteristics of the participants appeared appropriate. Some aspects of this review were well-conducted but limiting inclusion to only studies reporting positive results biased the evidence presented, hence the conclusions cannot be considered reliable. Practice: The authors stated that providers of HIV prevention programmes could use the results of the review to select appropriate evidence-based interventions. The review provided contact details for all interventions classified as of proven efficacy. Research: The authors stated that the highest priority should be given to identifying effective interventions in populations that are most affected by (or at greatest risk of) the HIV/AIDS epidemic. Specifically: African American, Hispanic and other MSM of colour; young MSM, especially young African American and Hispanic MSM; substance-using MSM; transgender persons; HIV-positive intravenous drug users; and rural populations. Interventions of proven effectiveness (or adaptation of these interventions) should be evaluated in different real-world (as opposed to research) settings and in different populations, to determine their applicability. In addition, interventions that just failed to meet review criteria for 'best-evidence' should be more rigorously evaluated. Authors of future research should adhere to the Consolidated Standards of Reporting Trials and Transparent Reporting of Evaluations with Nonrandomized Designs. 17138920	
Kimbrough et al. (2009)	OBJECTIVES: We evaluated the use of social networks to reach persons with undiagnosed HIV infection in ethnic minority communities and link them	EX_11

	to medical care and HIV prevention services. METHODS: Nine community-based organizations in 7 cities received funding from the Centers for Disease Control and Prevention to enlist HIV-positive persons to refer others from their social, sexual, or drug-using networks for HIV testing; to provide HIV counseling, testing, and referral services; and to link HIV-positive and high-risk HIV-negative persons to appropriate medical care and prevention services. RESULTS: From October 1, 2003, to December 31, 2005, 422 recruiters referred 3172 of their peers for HIV services, of whom 177 were determined to be HIV-positive; 63% of those who were HIV-positive were successfully linked to medical care and prevention services. The HIV prevalence of 5.6% among those recruited in this project was significantly higher than the approximately 1% identified in other counseling, testing, and referral sites funded by the Centers for Disease Control and Prevention. CONCLUSIONS: This peer-driven approach is highly effective and can help programs identify persons with undiagnosed HIV infection in high-risk networks	
Kipke et al. (1997)	Research was conducted to identify subcultural peer groups within a homeless youth population and determine whether these groups differ with respect to drug use patterns and HIV risk. Using systematic sampling methods, 309 homeless youth (ages 13-23 yrs) were recruited from street and service sites. Drug use patterns and HIV risk profiles were found to vary according to group affiliation. Respondents in the punks and gay/bisexual groups were more likely to have a substance abuse disorder. Respondents in the "punker" group also were at increased risk for having unprotected sex and sharing needles. Respondents in the "gay/bisexual" and "hustler" groups were at increased risk for having survival sex. Yet, unlike the "gay/bisexual group," the "hustler" group was more likely to report being tested for HIV. These findings suggest that outreach and intervention strategies may need to be tailored to the specific norms, values, and behavioral risk profiles of each peer group. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	EX_7
Know et al. (2001)	Examined HIV treatment perceptions among gay males since the introduction of highly active antiretroviral therapies (HAART). 3,012 males (aged 16-71 yrs) completed questionnaires concerning demographic characteristics, sexual identity, sexual relationships with other males, sexual practice with casual and regular partners, HIV testing, effectiveness of HIV treatments, HIV transmission, and concerns of HIV infection. Results show that the majority of Ss believed that combination HIV therapy is effective in preventing serious illness in those infected with HIV; however, few Ss believed that treatments can cure HIV infections. HIV-positive Ss were more likely than non-positive Ss to reject notions of reduced infectivity. There was less uncertainty among non-positive Ss about undetectable viral load and transmission possibilities. Compared to HIV-positive Ss, non-positive Ss were more worried about HIV infection than in the past. Findings suggest that most males remain skeptical that HAART can cure HIV infection and prevent HIV transmission, but that some initial uncertainty is being replaced by a growing optimism about the efficacy of treatments. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	EX_2

Knussen et al. (2004)	The objective of this study was to determine the contributions of a range of psychosocial, demographic and behavioural variables to gay men's intentions to take an HIV test. A cross-sectional self-report survey was undertaken. Researchers approached patrons of all known gay bars in Glasgow and Edinburgh during May 2000. Questionnaires were completed by 803 men (response rate of 78%). Those with a stronger intention to test had previously tested, and they were younger, with two or more recent unprotected anal sex partners. They perceived their HIV status to be unknown, had less fear of a positive test result, and perceived more benefits of testing. Intention to test in those with two or more recent unprotected anal sex partners was attenuated if accompanied by increased fear of a positive test result. Results are considered in the context of the theories of reasoned action and planned behaviour. Intention to test is far from a unitary phenomenon, and the existence of various sub-groups within the gay population demands a new approach to both research and health promotion	EX_quant. views
Koblin et al. (2004)	BACKGROUND: Effective interventions are needed to prevent acquisition of HIV infection in men who have sex with men. To date, no behavioural interventions specifically for this risk group have been tested with HIV infection as the primary outcome. METHODS: This multisite two-group randomised controlled phase IIb trial tested the efficacy of a behavioural intervention in preventing HIV infection among 4295 men who have sex with men. The experimental intervention consisted of ten one-on-one counselling sessions followed by maintenance sessions every 3 months. The standard condition was twice-yearly Project RESPECT individual counselling. Twice-yearly follow-up visits included testing for HIV antibody and assessment of behavioural outcomes. FINDINGS: The rate of acquisition of HIV infection was 18.2% (95% CI -4.7 to 36.0) lower in the intervention group than the standard group. Adjustment for baseline covariates attenuated the intervention effect to 15.7% (-8.4 to 34.4). The effect was more favourable in the first 12-18 months of follow-up. The occurrence of unprotected receptive anal intercourse with HIV-positive and unknown-status partners was 20.5% (10.9 to 29.0) lower in the intervention than in the standard group. INTERPRETATION: The results from the primary analyses allow us to rule out that the experimental intervention is associated with a 35% lower rate of HIV acquisition than in the standard group. The overall estimate of a difference of 18.2%, more favourable estimates of effect in the first 12-18 months, and similar effects on risk behaviours suggest that prevention of HIV infection among men who have sex with men by a behavioural intervention is feasible. Further work should be done to develop more effective interventions	EX_7
Koblin et al. (2006)	Objectives: We evaluated the correlates and contexts of HIV testing within the past year, subsequent risk reduction, and HIV seroconversion among young men who have sex with men (MSM). Methods: Young men aged 23 to 29 years were approached, interviewed, counseled, and tested for HIV at 181 randomly sampled MSM-identified venues in six U.S. cities from 1998 through 2000. Analyses were restricted to 2,797 MSM who reported never testing HIV-positive. Results: Of the 2,797 MSM, 1,281 (46%) either never previously tested or had not tested in the past year (never/remote testers);	EX_quant. views

	1,516 (54%) had tested in the past year (recent testers); and 271 (10%) tested HIV-positive as part of the study. Of 1,885 recent sex partners reported by HIV-infected participants, 68% were partners of never/remote testers. Of recent testers, 50 % tested anonymously, 51 % tested because of specific risks, 59% were counseled, 47% reported reducing their risks after testing, and 8% tested HIV-positive (percent HIV-infected by race: blacks, 24 %; Hispanics, 6 %; whites, 4 %; Asians, 1 %). Conclusion: Nearly half of young MSM participants had not tested in the past year and HIV-infected never/remote testers accounted for approximately two thirds of recent partners potentially exposed to HIV. Of those who had tested recently, many MSM, especially those who are black, had already acquired HIV. To reduce HIV transmission and facilitate early diagnosis and entry into care, increased HIV testing among young at-risk MSM in the United States, especially those who are black, is needed	
La Croix and Russo (1996)	The objectives of this paper are threefold: first, to develop a taxonomy of potential benefits from voluntary, routine HIV-antibody testing of hospital patients; second, to inform attending healthcare workers, hospital patients and policy makers of the potential benefits from such testing; and third, to make inferences about whether such testing is warranted by a cost-benefit criterion. Benefits stemming from information about a patient's HIV serostatus accrue to: (1) healthcare workers if extra precautions reduce their HIV-exposure rate; (2) the patient if knowledge of HIV serostatus allows life-extending prophylactic treatment to be initiated; and (3) the patient's sex partners if the patient is less likely to transmit HIV after undergoing HIV testing. Using recent estimates on the value of life, hospital-specific HIV-prevalence rates, the effectiveness of prophylactic treatment, rates of HIV exposure and conversion by healthcare workers, and reduction in high-risk sexual behaviors by seropositive patients, we estimate the benefits of testing as the value of statistical life saved. The opportunity cost of HIV testing is calculated as the reported cost of a standard HIV-test protocol with pre- and post-test counseling. Information about a patient's HIV serostatus provides small expected benefits to healthcare workers ($3.34) because the risk of HIV transmission is small; benefits to attending healthcare workers are insufficient to warrant routine HIV testing on a stand-alone basis even in high HIV-prevalence hospitals. However, an HIV-seropositive test result provides large expected benefits to the patient ($11,202) and to the patient's sex partners ($5271). Adding these nonrivalrous benefits, we find that routine, voluntary HIV-testing of hospital patients passes a cost-benefit test even in low HIV-prevalence hospitals. Four major qualifications of the cost-benefit analysis should be considered. (1) The benefits to some parties can only be achieved if the patient's serostatus is disclosed to them. (2) The net benefits may be negative if HIV-testing induces riskier behavior. (3) The analysis does not incorporate the significant potential for third-parties (employers, insurers, healthcare workers) to use the test to impose costs on HIV-seropositive patients. (4) The sample of inpatients choosing voluntary HIV testing may not be representative of the overall hospital population. These unmeasured factors suggest that policymakers should exercise caution in implementing a voluntary HIV-testing program	EX_1

Lansky et al. (2007)	This article describes a conceptual framework for HIV behavioral surveillance in the United States. The framework includes types of behaviors to monitor, such as risk behaviors, HIV testing behaviors, adherence to HIV treatment, and care-seeking for HIV/AIDS. The framework also describes the population groups in which specific behaviors should be monitored. Because the framework is multifaceted in terms of behaviors and populations, behavioral data from multiple surveillance systems are integrated to achieve HIV behavioral surveillance program objectives. Defining surveillance activities more broadly to include behavioral surveillance in multiple populations will provide more comprehensive data for prevention planning, and lead to a more effective response to HIV/AIDS in the United States	EX_7
Lauby and Milnamow (2008)	To inform initiatives to increase HIV testing in nontraditional locations, this study examined locations where men who have sex with men (MSM) get their first HIV test and identified population segments with different test location patterns. Interviews were conducted with 451 MSM systematically recruited from 65 venues in Philadelphia. Of 408 men ever tested for HIV, 29% took their first test in a clinic or hospital, 23% in a doctor's office, 30% at an HIV organization, and 19% in a high-risk setting, including prison, shelter, or drug treatment facility. More than half (58.5%) had their most recent test in the same type of location as their first test. Men tested at HIV organizations were the most likely to receive information about HIV prevention. Low-income Black MSM were less likely to be tested at medical settings or HIV organizations. Segmentation analysis revealed other differences in testing locations by income, race/ethnicity, and sexual identity	EX_quant. views
Lemcke et al. (2007)	Aims: To describe the accumulated prevalence of HIV testing in the Danish population until and including the year 2000. Methods: The study was based on nationally representative data from the Danish Health Interview Survey 2000. Multiple logistic regression analysis investigated the association between HIV testing and background variables, such as gender, age, marital status, educational level, and sexual orientation. Results: Overall 28.5% of the Danish population aged over 16 years have "ever been tested for HIV". More females (29.4%) than males (27.6%) were tested; 12.6% might not be aware of their blood being HIV tested when donating blood. More males (17.1%) than females (13.8%) had donated blood after 1985. Although males 30-39 years old were the most tested, males 50-59 years old had the highest odds of having donated blood after 1985. Concerning education, the less education one had, the less likely one was to have been HIV tested. Of men having sex with men, only 44% were "ever HIV tested". Conclusions: Positive association between extent of HIV testing and some sociodemographic factors was seen. Heterosexuals are HIV tested at lower rates than men having sex with men. Yet, stronger promotion of HIV testing among men having sex with men is recommended. Targeting prevention efforts towards other known risk groups is also recommended	EX_7
Liang et al. (2005)	HIV rapid testing may enhance the effectiveness of a mobile HIV/sexually transmitted disease (STD) screening clinic in at-risk populations who normally do not seek care. Our goal was to determine the usability and post-test counseling rates of rapid HIV testing services for clients tested on a	EX_1

	mobile clinic. HIV Oraquick rapid HIV-1 testing (OraSure Technologies, Inc., Bethlehem, PA) (blood) was offered to clients seeking HIV/STI counseling and testing services from the street at predetermined locations in areas of high STD morbidity, drug use, and commercial sex work. Rapid test results were available on the same day at the van within 10 minutes. Disease intervention specialists (DIS) attempted to locate and counsel positive clients who did not stay for results. By comparison, when offered at the same time, 64.5% of clients preferred Oraquick to traditional serologic testing. The post-test counseling rate for clients tested for Oraquick was 89% for infected and 93% for uninfected. By comparison, 11% of infected clients and 40% of uninfected clients tested for traditional test were post-test counseled. Clients who tested for the traditional enzyme immunoassay (EIA) test were told to return to the van in 14 days for results and post-test counseling. In the adjusted model, we also found statistically significant differences comparing clients who choose Oraquick to traditional serologic tests. These data suggest that rapid HIV testing services may enhance the effectiveness of mobile STD/HIV clinics	
Lichtenstein (2000)	This qualitative study explored the dynamics of adolescent HIV risk through focus group interviews of male and female adolescents at an Alabama juvenile detention facility, key informant interviews, and through interviews of HIV-positive and -negative adults in institutional settings and public health clinics in Alabama. The interviews revealed that commodified or unprotected sex with multiple partners was a common risk activity for male and female adolescents, with a related high risk of sexually transmitted disease. The adolescents were aversive to condom use and lacked knowledge of the dynamics of HIV transmission. Bisexually behaving males who engaged in same-sex prostitution for money or drugs viewed female partners as the source of HIV infection. Illicit drug activity and risky sexual behavior were highly related to economic and status anxiety. Experiences of healthcare were often coercive or were undermined by negative perceptions of health professionals. These negative perceptions and avoidance or lack of access to healthcare compounded the already high risk of sexually transmitted disease for this group of adolescents	EX_2
Lightfoot et al. (2001)	Using a quasi-experimental design, this study examined how delivering a brief training to volunteers in church congregations impacted (a) church volunteers' persistence in delivering HIV antibody testing messages over time and (b) HIV antibody testing. behavior of the church volunteers themselves. Church volunteers attended a briefing regarding delivery of public health messages to others and the churches were assigned to either: (a) a trained condition, when 345 volunteers received an additional 3-hour training in diffusing HIV prevention messages, or (b) a comparison condition, where 199 volunteers received no Hn I-specific training Three months after the intervention, church volunteers in the HIV-trained condition reported delivering an HIV antibody testing and prevention message to mo,a community members than volunteers in the comparison condition. Those In the HIV-trained condition also reported significantly higher levels of comfort and self-efficiency in delivering HIV prevention messages than volunteers in the comparison condition. However, the trained volunteers did not	EX_1

	themselves get tested for HIV at higher rates than the untrained volunteers. Training church volunteers for community diffusion of HIV prevention message is an efficient strategy for diffusing HIV messages. (C) 2001 John Wiley & Sons, Inc	
Lister et al. (2005)	During 2001 and 2002 an anonymous outreach-screening programme in Melbourne, Australia, offered testing for gonorrhoea and chlamydia on-site at men-only saunas. Modifications were made to this screening programme to offer a comprehensive testing clinic for sexually transmissible infections (STIs), including HIV. The comprehensive clinic was evaluated after one year of operation, and comparisons were made with the earlier anonymous screening programme. The comprehensive outreach clinic made contact with fewer men (n = 557), however, men tested had a higher prevalence of gonorrhoea and chlamydia (17%), and all men tested positive for STIs/HIV were followed up. The findings and comparisons outlined in this paper may be used for different communities to decide what screening programme model best suits their individual situation: anonymous programme with fewer tests offered, confidential and comprehensive STI/HIV testing programme, or both. On the basis of our evaluation, we have opted to continue the comprehensive STI/HIV testing programme in local men-only saunas	EX_11
Mack and Bland (1999)	This article explores knowledge, attitudes, and behaviors regarding HIV/AIDS for persons aged 50-64 by using data from the 1996 Behavioral Risk Factor Surveillance System. It examines what percentage have been tested for HIV, where and why they have been tested, knowledge about condom effectiveness, and self-perceived risk. The purpose is twofold: First, it presents an epidemiologic analysis of HIV/AIDS-related attitudes and behaviors of adults aged 50-64; second, it explores whether theoretical models used on other groups fit well with this age group. The authors conclude that the conceptual model is less robust for this group and there is a substantial need for health promotion efforts directed at older adults	EX_1
MacKellar et al. (2002)	objectives: We compared recent risk behaviors and HIV seroconversion among young men who have sex with men (MSM) who were first-time, infrequent, and repeat HIV testers. Methods: Male adolescents and young men aged 15 to 22 years were randomly sampled, interviewed, counseled, and tested for HIV at 194 gay-identified venues in seven U.S. cities from 1994 through 1998. Analyses were restricted to MSM Who reported having never tested or last tested HIV-negative. Results: Of 3430 participants, 36% tested for the first time, 39% had tested infrequently (one or two times), and 26% had tested repeatedly (greater than or equal tothree times). Compared with first-time testers, repeat testers were more likely to report recent risk behaviors and to acquire HIV (7% versus 4%). Over 75% of repeat testers who seroconverted acquired HIV within I year of their last test. Compared With repeat testers, first-time testers reported similar use of health care but delayed testing for nearly 2 additional years after initiating risk. Conclusions: Many young MSM soon acquire HIV after repeated use of HIV counseling and testing services. Providers must strengthen practices to identify, counsel, and test young MSM and provide enhanced behavioral interventions for those with persistent risks	EX_quant. views

Maguen and Armistead (2000)	Prevalence of unprotected sex and HIV-antibody, testing were examined in a sample of Southern gay, lesbian, and bisexual youth (n = 117). In addition, a new, measure was tested in terms of its ability to distinguish youth who obtain HIV-antibody testing from those who do riot. Data were collected at a conference for these youth, as well as at a Gay and Lesbian Community Center in a Southeastern metropolitan area. Youth I reported engaging in a wide range of risk behaviors, yet less than one half had been tested for HIV Factor analysis was conducted for the new measure, which assessed beliefs about HN testing in youth, and each factor was significantly different for youth who had been tested compared to those who had not. Gay, lesbian and bisexual youth were at high risk for HIV infection and were often unreserved for HIV antibodies	EX_1
Maguen et al. (2000)	Purpose: To identify factors related to human immunodeficiency virus (HIV) antibody testing among gay, lesbian, and bisexual youth, Methods: Self-reported demographics, risk behaviors, variables related to the Health Belief Model, and HIV testing data were collected at a conference for gay youth, as well as at the Gay and Lesbian Community Center in a Southeastern metropolitan area (n = 117), Results: About one third of participating youth who reported engaging in anal and vaginal sex had done so without a condom. In addition, one in four youth reported at least one other HIV risk factor, Of youth engaging in sexual risk behaviors, one third had not been tested for HIV antibodies. Furthermore, 61% of the youth reported some type of drug use, and only 57% of those using drugs had been tested. To determine factors associated with HIV testing, a hierarchical logistic regression was conducted. A binary variable of HIV testing was regressed first on demographic variables, second on risk factors, and third on variables derived from the Health Belief Model. Results of the logistic regression revealed that unprotected anal sex and the Health Belief Model variables predicted having been tested for HIV. The final model explained 42% of the variance in HIV testing. Conclusions: Gay, lesbian, and bisexual youth are at high risk for HIV infection and are often untested for HN antibodies. (C) Society for Adolescent Medicine, 2000	EX_7
Malebranche et al. (2004)	Black men who have sex with men (BMSM) in the United States are disproportionately affected by HIV. Using a qualitative approach, the authors describe the healthcare experiences of BMSM in New York State and Atlanta, GA, exploring the social issues that influence barriers to care, communication, and adherence in medical settings. Racial and sexual discrimination socially displace BMSM, and are often compounded by negative encounters within medical institutions. The internalization of these experiences influences healthcare utilization, HIV testing, communication, and adherence behaviors among members of this population. Increasing the number of ethnic and sexual minority providers, expanding current definitions of cultural competency curricula at academic institutions, targeting future research efforts on BMSM, and improving the structural and communication barriers within healthcare settings should be incorporated into our HIV prevention and routine healthcare interventions for BMSM	EX_2
Manavi and	Before highly active antiretroviral therapy (HAART) was introduced, the	EX_7

Welsby (2005)	advantages to infected individuals of knowing their HIV status were minimal, and counselling before HIV testing was the recommended practice.1 This usually limited testing, by relying on people who were obviously at risk presenting themselves for testing. Such groups included injecting drug users and men who have sex with men and their sexual contacts. Targeting of these groups will become an increasingly less useful concept as HIV continues to spread into the population that is conventionally not at risk. Do we need to reconsider if routine voluntary counselling and testing is appropriate today?	
Martinez-Donate et al. (2009)	This study examined the reach and impact of a social marketing intervention to reduce HIV risk among heterosexually identified (HI) Latino men who have sex with men and women (MSMW). Repeated cross-sectional intercept surveys were conducted in selected community venues during and after the campaign with 1,137 HI Latino men. Of them, 6% were classified as HI Latino MSMW. On average, 85.9% of the heterosexual respondents and 86.8% of the HI MSMW subsample reported exposure to the campaign. Responses to the campaign included having made an appointment for a male health exam that included HIV testing and using condoms. Campaign exposure was significantly associated with HIV testing behavior and intentions and with knowledge of where to get tested. The campaign reached its underserved target audience and stimulated preventive behaviors. Social marketing represents a promising approach for HIV prevention among HI Latinos, in general, and HI Latino MSMW, in particular	EX_11
McCoy (2008)	Persons with unrecognized HIV infection forgo timely clinical intervention and may unknowingly transmit HIV to partners. In North Carolina (NC), unrecognized infection and late diagnosis are common. To understand more about the individual and structural factors associated with HIV diagnosis and presentation to care, this dissertation examined three sources of data from HIV-positive patients in NC. We analyzed data from 75 patients with acute HIV infection identified through the Screening and Tracing Active Transmission (STAT) program to understand more about motivations for testing during early infection. We found that nearly one-third of patients had a sexually transmitted co-infection at the time of HIV diagnosis. The prevalence of co-infection was highest in women compared to heterosexual men (PR=0.67, 95% CI 0.31, 1.45) and men who have sex with men (PR=0.34, 95% CI 0.15, 0.76). To understand the effect of perceived social support on late presentation to medical care, we examined data from the University of North Carolina Infectious Disease Clinic Clinical and Socio-Demographic Survey. We analyzed data from 216 HIV-positive patients and quantified the four functional domains of social support with a modified Medical Outcomes Study Social Support Scale. We found the median delay between diagnosis and entry to primary care was 5.9 months. Only positive social interaction support was associated with delayed presentation in adjusted models. The effect of low perceived positive social interaction on delayed presentation differed by history of a drinking problem (history of alcoholism HR=0.71, 95% confidence interval (CI): 0.40, 1.28; no alcoholism HR=1.43, 95% CI: 0.88, 2.34). Finally, we conducted a qualitative interview study of 24 HIV-positive patients entering care at the UNC ID clinic with	EX_1

	moderate to advanced immunosuppression to describe attitudes and beliefs about HIV testing and care. The primary barrier to HIV testing prior to diagnosis was perception of risk; consequently, most participants were diagnosed after the onset of clinical symptoms. While patients were anxious to initiate care rapidly after diagnosis, some felt frustrated by the passive process of connecting to specialty care. The first visit with an HIV care provider was identified as critical in the coping process. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	
McGarrigle et al. (2005)	Objectives: To estimate the prevalence of, and identify factors associated with, HIV testing in Britain. Design: A large, stratified probability sample survey of sexual attitudes and lifestyles. Methods: A total of 12 110 16-44 year olds completed a computer-assisted face-to-face interview and self-interview. Self-reports of HIV testing, i.e. the timing reasons for and location of testing, were included. Results: A total of 32.4% of men and 31.7% of women reported ever having had an HIV test, the majority of whom were tested through blood donation. When screening for blood donation and pregnancy were excluded, 9.0% of men and 4.6% of women had had a voluntary confidential HIV test (VCT) in the past 5 years. However, one third of injecting drug users and men who have sex with men had a VCT in the past 5 years. VCT in the past 5 years was significantly associated with age, residence, ethnicity, self-perceived HIV risk, reporting greater numbers of sexual partners, new sexual partners from abroad, previous sexually transmitted infection diagnosis, and injecting non-prescribed drugs for men and women, and same-sex partners (men only). Whereas sexually transmitted disease clinics were important sites for VCT, general practice accounted for almost a quarter of VCT. Conclusion: HIV testing is relatively common in Britain; however, it remains largely associated with population-based blood donation and antenatal screening programmes. In contrast, VCT remains highly associated with high-risk (sexual or drug-injecting) behaviours or population sub-groups at high risk. Strategies to reduce undiagnosed prevalent HIV infection will require further normalization and wider uptake of HIV testing. (C) 2005 Lippincott Williams Wilkins	EX_quant. views
McKay (2000)	Reviews literature supporting the development and implementation of effective HIV/STD interventions for different populations. Evaluation research indicating favourable behavioral outcomes for HIV/STD prevention interventions with adolescents, street youth, STD clinic patients, women, heterosexually active men, men who have sex with men, and communities is summarized. Research suggesting that HIV/STD prevention interventions can be cost-effective or result in cost-savings is also described. Based on the interventions reviewed, some common characteristics of behaviourally effective HIV/STD interventions are identified and discussed. These include: use of theoretical models; incorporation of behavioural skills training; emphasis on promoting condom use; helping clients create a personal sexual health plan; use of community/culturally appropriate strategies; use of peer educators and community opinion leaders; and appropriate intervention duration. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	EX_2
McQuitty et al.	We examined records of all HIV antibody tests performed at anonymous	EX_1

(1999)	publicly funded (PF) sites and by home collection (HC) testing for residents of San Francisco from August 1996 to December 1997. Although far fewer tests were performed by HC testing than at PF sites (715 versus 8712, respectively), a higher proportion of HC testers reported no prior history of HIV testing (33.1% versus 17.9%). HIV seroprevalence was higher among PF tests (1.8%) than among HC tests (0.9%). Compared with PF testers, HC testers were less likely to be gay men, lesbian or bisexual women, heterosexual women, African American, or Latino. HC testers were more likely to report sex with a known HIV-positive partner. HC testers were also more likely to reside in affluent neighborhoods. HC testing reaches some high-risk persons who may not otherwise seek PF testing, although, overall, the risk profile of HC testers appeared lower than that of PF testers. HC testing reaches some individuals who can financially afford HC testing, thus saving public prevention resources for hard-to-reach, high-risk populations	
Meyrick et al. (1999)	We aimed to investigate clinical practice in the offering of HIV tests and subsequent uptake in a central London genitourinary medicine (GUM) clinic. A random sample (n = 330) of attenders at 3 inner-London GUM departments was surveyed. Reasons for and rates of offering of HIV tests were recorded and analysed in relation to demographic, risk group information and uptake. The results were integrated with the latest unlinked, anonymous seroprevalence data for the clinic. After exclusion of patients known to be HIV-positive or to have recently undergone HIV testing, HIV tests were offered to 96% of homo/bisexual men, 55% of heterosexual men and 60% showed an inverse relationship between seroprevalence rates for heterosexual men/women (2.5% vs 1%) and rates of HIV test offering. A lack of research into the policy of offering HIV tests may have resulted in inconsistencies in practice. An evidence based policy should offer HIV tests in line with seroprevalence.	EX_quant. views
Mikolajczak et al. (2006)	The present paper focuses on reasons for not taking an HIV test among untested men who have sex with men (MSM). From an MSM web-based survey, 1627 MSM who had never tested for HIV were selected for the reported analyses. Results show that fear of a positive test result and the perceived consequences thereof, are reported as the most important reasons for not taking an HIV-test among at-risk respondents. The most important reasons for not taking an HIV-test among no-risk respondents are related to perception of low risk for HIV-infection. Implications for future interventions to promote HIV-testing are discussed	EX_quant. views
Mikolajczak et al. (2008)	In this article, the systematic development of an Internet HIV-prevention intervention, based on the Intervention Mapping (IM) protocol, is described. As such, the present article meets the recent calls for more detailed descriptions of the development of health promotion programs. In doing so, the different steps of IM are introduced and applied to the promotion of HIV-testing among sexually active Men who have Sex with Men. Particular attention is given to the Internet setting of the program, which is called "Queermasters". The additional value of IM to the development of Internet health promotion programs and the advantages of using the Internet for health promotion purposes are considered	EX_11

Millett et al. (2007)	(from the chapter) This chapter reviews the evidence relevant to HIV prevention among Black men who have sex with men (MSM) in the United States from peer-reviewed literature indexed in online databases. Three topic sections address the main areas of research in the field: (1) factors associated with HIV-positive status, HIV risk behaviors (e.g., unprotected anal sex, multiple sex partners, drug use), and HIV protective behaviors (e.g., HIV testing, condom use, help seeking) among Black MSM; (2) primary prevention of disease progression among HIV-positive Black MSM; and (3) HIV secondary prevention among Black MSM. In the first section, we discuss the descriptive studies that identify the demographic, behavioral, psychological, sociocultural, structural, and genetic or biologic factors associated with HIV-positive status, risk, and protective behaviors. These studies examine the specific individual, interpersonal, and contextual factors that affect HIV infection, HIV risk, or protective behaviors. In the second section, we discuss the effect of controlled HIV interventions to modify HIV risk behaviors among Black MSM and the components of effective interventions. Finally, we discuss patterns of health care access, mental health status, and sexual behaviors among HIV-positive Black MSM. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	EX_11
Mimiaga et al. (2009a)	Sex work has been associated with elevated risk for HIV infection among men who have sex with men (MSM) in many settings. This mixed methods study examined sexual risk among MSM sex workers in Massachusetts, collecting formative data on HIV risk behavior by sex worker type in order to gain a better understanding of how to tailor prevention interventions to this unique and high-risk subgroup of MSM. Two groups of MSM sex workers were recruited between January and March 2008: street workers (n = 19) and internet escorts (n = 13). Participants completed a semistructured qualitative interview and quantitative psychosocial assessment battery; interviews were conducted until redundancy in responses was achieved. Almost one third (31%) were HIV-infected. The majority of participants (69%) reported at least one episode of unprotected serodiscordant anal sex (either insertive or receptive) with a mean of 10.7 (SD = 42.2) male sex partners of an unknown or different HIV serostatus in the past 12 months. Salient findings included: (a) internet sex workers reported being paid substantially more for sex than street sex workers; (b) inconsistent condom use, high rates of unprotected sex, and low rates of HIV status disclosure with sex work partners for both internet and street workers; general perceptions of a lack of trust on the part of sex work partners (i.e., telling them what they want to hear), offers of more money for unprotected sex; (c) contextual differences in risk taking: internet sex workers reported that they are more likely to engage in sexual risk-taking with noncommercial sex partners than sex partners who pay; (d) HIV status and STI history: two street workers became infected in the context of sex work, and 25% of the entire sample had never been tested for sexually transmitted infections (STI); and (e) motivations and reasons for doing sex work, such as the "lucrativeness" of sex work, as a means to obtain drugs, excitement, power, "why not?" attitude, and because social norms modeled this behavior. Study findings can be used to generate hypotheses for designing and providing tailored primary and secondary prevention interventions for this at-risk subgroup of MSM. copyright 2008	EX_7

	The New York Academy of Medicine	
Mimiaga et al. (2009b)	Black men who have sex with men (MSM) are at increased risk for HIV infection in the United States compared to other MSM. The aim of this study was to investigate Black MSM's sexual mixing patterns and partner characteristics in relation to sexual risk taking, as a possible explanation for this observed increase in HIV incidence. Between January and July 2008, 197 Black MSM were recruited via modified respondent-driven sampling and completed optional pretest and post-test HIV serological testing, counseling, and a demographic, behavioral, and psychosocial assessment battery. Bivariate and multivariable logistic regression procedures were used to examine predictors of risky sex across partner types. Overall, 18% of the sample was HIV-infected; 50% reported unprotected intercourse with men, 30% with women, and 5% with transgender partners. Fifty-three percent identified as bisexual or straight, although all reported oral or anal sex with another man in the prior 12 months. Significant predictors of engaging in at least one episode of: (1) serodiscordant unprotected anal sex (UAS) with a male partner in the past 12 months: individuals at risk for social isolation (AOR = 4.23; p = 0.03), those with unstable housing (AOR = 4.19; p = 0.03), and those who used poppers at least weekly during sex (AOR = 5.90; p = 0.05); (2) UAS and/or unprotected vaginal intercourse with a female partner in the past 12 months: those with unstable housing (AOR = 4.85; p = 0.04), those who used cocaine at least weekly during sex (AOR = 16.78; p = 0.006), being HIV-infected (AOR = 0.07; p = 0.02), and feeling social norms favor condom use (AOR = 0.60; p = 0.05); (3) UAS with the participants' most recent nonmain male sex partner: use of alcohol and drugs during last sex by participant (AOR = 4.04; p = 0.01), having sex with a Hispanic/Latino male (AOR = 2.71; p = 0.04) or a Black male (AOR = 0.50; p = 0.05) compared to a White male, and lower education (AOR = 1.31; p = 0.02). Findings suggest that sexual risk behaviors of Black MSM differ across partner type and by the characteristics of their sexual networks and that this subpopulation of MSM are at high risk for HIV acquisition and transmission. Effective prevention strategies need to address the distinct sexual and behavioral risk patterns presented by different sexual partnerships reported by Black MSM	EX_7
Mimiaga et al. (2009c)	Testing for HIV and other sexually transmitted diseases (STD) remains a cornerstone of public health prevention interventions. This analysis was designed to explore the frequency of testing, as well as health system and personal barriers to testing, among a community-recruited sample of Black men who have sex with men (MSM) at risk for HIV and STDs. Black MSM (n = 197) recruited via modified respondent-driven sampling between January and July 2008 completed an interviewer-administered assessment, with optional voluntary HIV counseling and testing. Logistic regression procedures examined factors associated with not having tested in the 2 years prior to study enrollment for: (1) HIV (among HIV-uninfected participants, n 145) and (2) STDs (among the entire mixed serostatus sample, n = 197). The odds ratios and their 95% confidence intervals obtained from this analysis were converted to relative risks. (1) HIV: Overall, 33% of HIV-uninfected Black MSM had not been tested for HIV in the 2	EX_quant. views

	years prior to study enrollment. Factors uniquely associated with not having a recent HIV test included: being less educated; engaging in serodiscordant unprotected sex; and never having been HIV tested at a community health clinic, STD clinic, or jail. (2) STDs: Sixty percent had not been tested for STDs in the 2 years prior to study enrollment, and 24% of the sample had never been tested for STDs. Factors uniquely associated with not having a recent STD test included: older age; having had a prior STD; and never having been tested at an emergency department or urgent care clinic. Overlapping factors associated with both not having had a recent HIV or STD test included: substance use during sex; feeling that using a condom during sex is ''very difficult''; less frequent contact with other MSM; not visiting a health care provider (HCP) in the past 12 months; having a HCP not recommend HIV or STD testing at their last visit; not having a primary care provider (PCP); current PCP never recommending they get tested for HIV or STDs. In multivariable models adjusting for relevant demographic and behavioral factors, Black MSM who reported that a HCP recommended getting an HIV test (adjusted relative risk [ARR] = 0.26; p = 0.01) or STD test (ARR = 0.11; p = 0.0004) at their last visit in the past 12 months were significantly less likely to have not been tested for HIV or STDs in the past 2 years. Many sexually active Black MSM do not regularly test for HIV or STDs. HCPs play a pivotal role in encouraging testing for Black MSM. Additional provider training is warranted to educate HCPs about the specific health care needs of Black MSM, in order to facilitate access to timely, culturally competent HIV and STD testing and treatment services for this population	
Monasch and Mahy (2006)	Objectives: This chapter reviews data on the situation of young people and HIV/AIDS. It assesses whether young people have access to the information, skills and services required to reduce their vulnerability and whether there has been any reduction in HIV prevalence among 15-24-year-olds. Methods: We reviewed the data on knowledge, behaviour, life skills, access to services and HIV prevalence among young people from nationally representative household surveys, antenatal care surveillance reports, behavioural surveillance surveys, a global coverage survey and other special studies. Findings: In countries where HIV is concentrated among sex workers, injecting drug users or men who have sex with men, high-risk behaviour commences for most during adolescence, and large proportions of these high-risk populations are younger than 25 years. In countries with generalized epidemics, the epidemic is also driven by young people. Half of all new infections in sub-Saharan Africa occur among this group. Many young people do not have the basic knowledge and skills to prevent themselves from becoming infected with HIV. Young people continue to have insufficient access to information, counselling, testing, condoms, harm-reduction strategies and treatment and care for sexually transmitted infections. Other socioeconomic factors beyond the control of individuals need to be addressed. Countries that have reported a decline in HIV prevalence have recorded the biggest changes in behaviour and prevalence among younger age groups. Conclusions: The epidemic varies greatly in different regions of the world, but in each of these epidemics young people are at the centre, both in terms of new infections as well as being the	EX_1

	greatest potential force for change if they can be reached with the right interventions	
Mosen et al. (1998)	Lack of timely HIV testing leads to missed prevention opportunities and poor prevention counselling may be related to further disease spread. We examined the association of self-reported access to medical care with receiving HIV testing and preventive counselling services among a sample of patients with HIV disease prior to hospitalization. We conducted a cross-sectional interview of 217 Los Angeles patients hospitalized with HIV-related illness between 1992 and 1993 and abstracted clinical data from the medical record. Eighty-four per cent of patients received HIV testing prior to hospitalization, but only 33% received preventive counselling services. Only 48% of all patients rated outpatient medical care as somewhat or very easy to obtain. Controlling for severity of illness, better access to outpatient medical care (OR = 1.48; 95% CI = 1.02-2.15), having a regular source of care (OR = 3.40; 95% Cl = 1.29-8.97) and non-homosexual mode of HIV transmission (OR = 0.31; 0.12-0.83) were associated with receiving HIV testing services prior to hospitalization. Having a regular source of care (OR = 3.55; 95% CI = 1.37-9.22), being VA (Veterans' Administration) insured (OR = 6.16; 1.46-26.05), alder age (OR = 0.95; 95% CI = 0.90-0.99) and having a CD4 count between 101-200 (OR = 0.19; 95% CI = 0.06-0.63) were associated with receiving HIV counselling. Limited self-reported access to medical care is associated with fewer patients receiving HIV testing and counselling. Improving timeliness of HIV testing may require removing the barriers to medical care	EX_7
Moskovitz et al. (2009)	Objective In recent years, Internet-based or online counseling has emerged as an effective way to assess psychological disorders and discuss destructive behaviors with individuals or groups of individuals. This study explores the application of online counseling to HIV/STD risk-taking behavior among men who have sex with men (MSM). Methods PowerON, an organization that provides sexual health information to MSM exclusively online, used instant message technology to counsel MSM in real time through computer-mediated means. A sample of 279 transcripts of instant message exchanges between PowerON counselors and Gay.com users were recorded and qualitatively analyzed. Results Approximately 43% of the instant message sessions discussed information about HIV/STD testing. Risk-taking behaviors were addressed in 39% of the sessions. Information about HIV/STDs and general counseling were given in 23% and 18% of the counseling sessions, respectively. Conclusion The data showed these instant message sessions to be a potentially feasible forum for HIV/STD counseling. Practice implications Information ordinarily disseminated at health clinics could be successfully distributed through the Internet to MSM. [Copyright Elsevier B.V.]	EX_7
Moyer et al. (2007)	Concerned about reports of a 15% decline in HIV testing among high-risk youth in an earlier study in Pittsburgh, this study was initiated to explore reasons why young people are not getting tested for HIV, while gathering data on their respective level of risk taking behaviors. A total of 580 surveys were collected from youth aged between 14 and 24. Overall, 17% of youth	EX_quant. views

	were found to be at high to some risk for HIV infection, while many of them agreed they were not at-risk for HIV. Young MSM reported being afraid of testing HIV-positive. Young people continue to engage in high-risk behaviors and avoid HIV testing, and efforts are needed to identify these youth and equip them with the resources they need to avoid infection. (PsycINFO Database Record (c) 2009 APA, all rights reserved) (journal abstract)	
Murphy et al. (2002)	Objective. To describe human immunodeficiency virus (HIV) testing patterns among high-risk, uninfected adolescents and HIV-infected adolescents, and factors associated with testing. Methods. HIV-infected adolescents (N = 246) and high-risk, uninfected adolescents (N = 141) at 15 sites nationwide were asked about the number of times they were tested for HIV, the type of agency at which testing occurred, and reasons for testing. Results. The majority of participants reported being influenced to obtain testing by health care providers (53.1% of the HIV-infected group and 66.1% of the HIV-uninfected group, respectively). Female participants were somewhat more likely to have used a confidential or anonymous site for the most recent test, compared with male participants (73.5% and 67.5%, respectively). Among the HIV-infected group, feeling sick was the only factor associated with number of tests. Among the HIV-uninfected group, having more male partners, marijuana use in the past 3 months, white race, and having had same-gender partners in their lifetime (males only) were associated with number of tests. Multivariate analyses identified 2 significant models. Modeling the probability of having been tested 3 or more times, black participants were less likely to be tested than white participants (odds ratio [OR] = 0.4), and participants who felt sick were more likely to be tested than those who did not (OR = 1.7). Modeling the probability that the last test would be positive, black participants were more likely than white participants to test positive (OR = 2.3); those who were tested because they thought they might have gotten HIV from sex (OR = 3.0) or they felt sick (OR = 3.9) were more likely to test positive; participants who were tested because a health care professional recommended it were actually less likely (OR = 0.5) to test positive. Conclusions. Overall, these findings highlight the importance of making HIV testing more routinely available to sexually active adolescents. More work needs to be done to normalize HIV testing among adolescents, and more innovative approaches need to be implemented on a wide scale	EX_1
Myersa et al. (2008)	African and Caribbean communities in Canada and other developed countries are disproportionately affected by HIV/AIDS. This qualitative study of African and Caribbean communities in Toronto sought to understand HIV-related stigma, discrimination, denial and fear, and the effects of multiple intersecting factors that influence responses to the disease, prevention practices and access to treatment and support services. Semi-structured interviews were conducted with 30 HIV-positive men and women and focus groups were conducted with 74 men and women whose HIV status was negative or unknown. We identified a range of issues faced by African and Caribbean people that may increase the risk for HIV infection, create obstacles to testing and treatment and lead to isolation of HIV-positive people. Our findings suggest the need for greater sensitivity and knowledge on the part of healthcare providers; more culturally specific support services;	EX_1

	community development; greater community awareness; and expanded efforts to tackle housing, poverty, racism and settlement issues. copyright 2008 Taylor & Francis	
n.a. (1997)	Twenty thousand HIV-antibody home blood testing kits have been sold, primarily to customers in high risk groups, gays, blacks, and Hispanics. The telephone counseling provided by the test makers gets high grades from the Centers for Disease Control and Prevention (CDC) Division for HIV/AIDS Prevention, with test buyers staying on the phone from 20 minutes to over an hour. Using the lancet for blood collection is working well, with 99 percent of cases getting a large enough volume to sample. There are 3 approved test kits: Confide, Home Access, and Home Access Express	EX_1
n.a. (2007)	Prevention efforts need to evolve to challenge changing perceptions and behaviors in men having sex with men (MSM). Interventions targeted at white populations need to be tailored to, and tested in, different ethnic groups. And, importantly, regular testing for HIV and other sexually transmitted infections must be integrated into routine health care accessed by MSM. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	EX_7
Norton et al. (1997)	Objective: To compare the characteristics of repeat HIV testers with first-time testers in a National Health Service HIV testing clinic in London. Subjects and methods: A self-administered questionnaire was distributed to clinic attenders between September 1995 and January 1996. The sample was stratified by gender and sexual orientation. Repeat and first-time testers were compared with respect to recent sexual risk behaviour, reasons for taking the HIV test, condom use, knowledge of sex partner's HIV status, and sociodemographic and psychosocial variables. Results: Of 965 clinic attenders surveyed, 404 (41.9%) reported at least one previous HIV test outside the window period and were classified as repeat testers: homosexual men, 62.5% (178 out of 285); heterosexual men, 35.1% (126 out of 359); heterosexual women, 31.2% (100 out of 321). Among homosexual men, repeat testers were more likely to report the following: two or more partners in the previous 6 months for both unprotected anal sex (25.8 versus 9.3%; $P < 0.01$) and unprotected oral sex (53.9 versus 37.4%; $P < 0.01$); ever having had a sexually transmitted disease (STD) other than HIV (49.4 versus 29.0%; $P < 0.01$); taking the present test 'as part of a regular health check' (48.9 versus 28.0%; $P < 0.01$); and knowing others who had tested for or been infected with HIV. Repeat testing heterosexual men were more likely to report the following: two or more partners in the previous 6 months for unprotected vaginal sex (42.9 versus 30.9%; $P < 0.05$) and unprotected oral sex (41.3 versus 25.3%; $P < 0.01$); ever having had an STD other than HIV (31.7 versus 20.6%; $P < 0.05$); taking the present test 'as part of a regular health check' (36.5 versus 26.2%; $P < 0.05$); and knowing others who had tested for or been infected with HIV. For heterosexual women, repeat testers were more likely to report ever having had an STD other than HIV (25.0 versus 14.5%; $P < 0.05$), and knowing others who had tested for or been infected with HIV. Conclusions: Repeat testing was associated with high-risk sexual behaviour, a previous STD, knowledge of others who have tested for or been infected with HIV, and seeking the test as part of a regular health	EX_quant. views

	check. Factors contributing to repeat testing are multi-faceted and vary between groups of different sexual orientation. Use of the impact of knowledge of others infected by HIV and the experience of contracting an STD other than HIV may guide the development of HIV counselling interventions aimed at reducing sexual risk behaviour	
Osmond et al. (2000)	Objectives: To test the feasibility of obtaining HIV test results by home collection kit from a probability telephone sample of men who have sex with men (MSM). Methods: A quota sample of 615 MSM previously interviewed by the Urban Men's Health Study phone survey in Chicago, Los Angeles, New York City, and San Francisco were re-contacted and offered an HIV test using an oral specimen (Orasure) home collection kit. Results: Eighty percent consented to be mailed a kit, and 84% returned a specimen, for a 67% participation rate. All self-reported HIV-positive persons tested positive (77 of 77); 4 of 266 (1.5%) with a prior negative test and 2 of 69 (2.9%) with no prior positive HIV test result. Participation was associated with self-reported prior HIV test status-HIV-positive (83%), HIV-negative (68%), or no prior HIV test result (54%)-and marginally associated with New York City residence after adjustment for HIV status (odds ratio = 0.7; 95% confidence interval, 0.4-1.1; p = .08). Conclusions: These results suggest that urban MSM identified and interviewed by telephone will participate in home collection HIV testing. This methodology could be used to produce population-based estimates of HIV seroprevalence and seroincidence in MSM and could probably be extended to other populations and other viral infections	EX_quant. views
Owens et al. (1996)	Background: Although screening inpatients for human immunodeficiency virus (HIV) in acute care hospital settings has been recommended, the cost-effectiveness of screening is not known. Objective: To estimate the cost-effectiveness of a voluntary screening program in acute care hospitals and associated clinics. Results: During the first year, an HIV screening program implemented in acute care hospital settings in which the seroprevalence of HIV infection is 1% or more would result in the identification of approximately 110 000 undetected cases of HIV infection. The program would result in expenditures of approximately $171 million for testing and counseling, and expenditures of approximately $2 billion for incremental medical care for the patients identified as having HIV infection during the first year of screening. When the seroprevalence of HIV is 1%, the cost-effectiveness of screening is $47 200 per year of life saved. When the effect of early identification of HIV infection on the patient's quality of life also is considered, screening is less cost-effective. Screening-induced reductions in risk behavior improve the cost-effectiveness of screening by preventing the transmission of HIV. Conclusion: The cost-effectiveness of screening for HIV in acute care settings in which the seroprevalence rate is 1% is within the range of other accepted interventions, exclusive of the effect of screening on duality of life. However, the cost-effectiveness of screening is affected substantially by the effect of screening on quality of life and by the degree to which persons identified as having HIV infection reduce risk behaviors that may transmit infection	EX_1

Pajonk and Naber (1998)	Infection with HIV is correlated with increased psychiatric morbidity. Even asymptomatic individuals are at higher risk of developing adjustment disorders, cognitive impairment and especially depression. However, as most of the infected individuals belong to risk groups who are themselves particularly vulnerable for psychiatric disturbances, it remains uncertain how much of the illness should be attributed to the HIV-infection. The aim of this article is to present the latest data on psychiatric morbidity, correlation between illness progression and psychiatric symptoms, therapeutic strategies (psychopharmacology and psychotherapy) and the rationale for HIV-testing in psychiatric patients. (C) 1998 Rapid Science Ltd	EX_1
Pedlow and Carey (2003)	Behavior modification This review assessed HIV risk reduction interventions for adolescents. The authors concluded that there was considerable evidence for the effectiveness of these interventions but, owing to methodological limitations of the available research, there is a need to improve the quality of primary research in this area, a conclusion that seems justified. This record is a structured abstract written by CRD reviewers. The original has met a set of quality criteria. Since September 1996 abstracts have been sent to authors for comment. Additional factual information is incorporated into the record. Noted as [A:....]. To provide a review and methodological critique of human immunodeficiency virus (HIV) risk reduction interventions for adolescents. No specific inclusion criteria for the interventions were reported. The multi-component interventions evaluated in the review included group discussions, counselling, communication and negotiation skills, pamphlets on sexually transmitted diseases (STDs), goal setting, social and self-rewards, education, HIV and youth speakers, problem-solving, self-management, cognitive skills training, modelling behavioural rehearsal with feedback, role-play, skills training, story telling, videos and games. Studies evaluating interventions designed to increase the rate of HIV testing were not included in the review unless specific sexual risk reduction outcomes were reported. The interventions were conducted in schools, community sites and health care settings. Studies primarily of teenagers with a mean age of 19 years or less, or an age range within 13 to 19 years, were eligible for inclusion. The participants included in the review were aged from 9 to 20 years. The sample size of the included studies varied greatly, ranging from 34 to 3,869. The review included studies of both general and high-risk populations. Only one study was conducted with homosexual teenagers. Studies assessing sexual behaviour risks such as frequency of unprotected sex and condom use were eligible for inclusion. The included studies reported on condom use, the incidence and treatment of STDs, the frequency of sex (protected and unprotected), the number of partners, delayed onset of sex, and abstinence. Randomised controlled trials (RCTs) were eligible for inclusion. PsycINFO, AIDSLINE, MEDLINE and CINAHL were searched up to September 2000; the search terms were reported. Reference sections from empirical articles and reviews were also checked. Only studies published in peer-reviewed journals were eligible for inclusion. The authors critiqued the literature using six methodological features: use of theory, intervention content and format, measurement, study design, and data analysis. The authors did not state how the papers were assessed for validity, or how many reviewers performed the validity	EX_2

	assessment. The authors did not state how the papers were selected for the review, or how many reviewers performed the selection. The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The studies were combined in a narrative. Differences between the studies in terms of methodology were explored. This included their use of theory, intervention content and format, measurement, study design and data analysis. Twenty-two RCTs (23 comparisons) were included in the review (n=5,356). Sixteen studies evaluated group interventions, with the number of sessions ranging from 1 to 12. Seven evaluated individual interventions, six with a single session and one with five sessions. Of the 23 interventions, 13 achieved a statistically significant reduction in risk. Eight studies (4 individual, 4 group) reported on the contraction of STDs, which was reduced in 29% of the studies (1 individual, 1 group). Fifteen studies (5 individual, 10 group) reported on the number of partners, which was reduced in 27% of the studies (1 individual, 3 group). Fifteen studies (6 individual, 9 group) reported on condom use, which improved in 53% of the studies (2 individual, 6 group). Seven studies (1 individual, 7 group) reported on the frequency of unprotected sex, which was reduced in 75% of the studies (6 group). Seven studies (2 individual, 5 group) reported on abstinence, which increased by 14% in one study (a group intervention of 8 sessions). Four group intervention studies reported on delayed onset of sex, which increased in 50% of the studies. Twelve studies (intervention types unclear) reported on the frequency of sex, which was reduced by 42%. There was considerable evidence for the efficacy and effectiveness of HIV prevention programmes for adolescents. The authors also concluded that there was a need to improve the methodology of research in this area. The review question was defined in terms of the participants, study design and outcomes. Several relevant electronic databases were searched and the search terms reported. Only publications in peer-reviewed journals were considered, and it was not reported whether language restrictions had been applied. These factors may lead to the introduction of language and publication bias, which the authors themselves did not investigate. The authors did not report how the study selection, data extraction or validity assessment processes were carried out, thus precluding an assessment of the methodological rigour of the review. Given the heterogeneity of the included studies, the decision not to combine the studies in a meta-analysis was appropriate. The authors' conclusion, that there is a need to improve the quality of primary research in this area, appears to be justified given the methodological limitations of the available research. Practice: The authors did not state any implications for practice. Research: The authors stated that more research is needed to compare individual and group approaches to HIV prevention, and to develop effective brief, single-session, individualised interventions. The authors also recommended consistent reporting of effect sizes and the discussion of clinically meaningful intervention effects to assist comparisons across studies. 12705104	
Peltzer et al. (2004)	CONTEXT: Stigmatizing attitudes toward persons with AIDS (PWAs) may reduce people's willingness to have themselves tested for Human Immunodeficiency Virus (HIV)--thereby increasing the risk of transmission.	EX_1

	AIMS: To examine attitudes towards (HIV) testing and determinants of attitudes towards PWAs. SETTINGS AND DESIGN: A cross-sectional. MATERIAL AND METHODS: 600 first-year university students from South India, South African and America filled in a self-administered questionnaire. Main outcome measures included an Attitudes towards HIV-Antibody Testing Scale and Readiness to engage in personal forms of contact with People With AIDS. RESULTS indicate that the majority of American and South African students and only 10 percent of the Indian students had been sexually active in the past 12 months. Almost one fifth of the American and South African participants but only 10% of the Indian students admitted to having had an HIV test. American students had a much more positive attitudes toward HIV testing than South African and Indian students. Regression analysis for the Indian student sample identified blaming, irritation and negative attitudes toward homosexuals as independent predictors of readiness to engage in personal contact with PWAs, while the regression analyses for both South African and American students identified pity and irritation as independent predictors of contact readiness with PWAs. Positive HIV testing attitudes were positively associated with contact readiness with PWAs. CONCLUSION: The findings are important for the role of HIV testing and counselling in campus AIDS programmes. The findings reveal important factors related to HIV testing and suggest strategies for developing effective HIV/AIDS counselling programmes in universities	
Petroll et al. (2009)	African-American men bear a disproportionate burden of HIV infection in the United States. HIV testing is essential to ensure that HIV-infected persons are aware of their HIV-positive serostatus, can benefit from early initiation of antiretroviral therapy, and can reduce their risk of transmitting the virus to sex partners. This cross-sectional study assessed HIV testing history and healthcare utilization among 352 young African-American men recruited in urban neighborhoods in a Midwestern city. The self-administered survey measured sexual risk behaviors, factors associated with HIV testing, and barriers to testing. The acceptability of community venues for HIV testing was also assessed. Of the respondents, 76% had been tested for HIV at some time in their lives, 52% during the prior 12 months. Of the participants, 70% had unprotected intercourse during the prior 12 months, 26% with two or more partners. Nearly three-quarters (72%) of participants had seen a healthcare provider during the prior year. In univariate analyses, those who had at least one healthcare provider visit during the prior 12 months and those who had a primary doctor were more likely to have been tested in the prior 12 months. In multivariate analyses, having a regular doctor who recommended HIV testing was the strongest predictor of having been tested [OR = 7.38 (3.55, 15.34)]. Having been diagnosed or treated for a sexually transmitted disease also was associated with HIV testing [OR = 1.83 (1.04, 3.21)]. The most commonly preferred testing locations were medical settings. However, community venues were acceptable alternatives. Having a primary doctor recommend testing was strongly associated with HIV testing and most HIV testing occurred at doctors' offices. But, a substantial proportion of persons were not tested for HIV, even if seen by a doctor. These results suggest that HIV testing could be increased within the healthcare system by increasing the number of recommendations made by	EX_1

	physicians to patients. The use of community venues for HIV testing sites could further increase the number of persons tested for HIV	
Pinkerton et al. (1998)	American Journal of Public Health This record was compiled by CRD commissioned reviewers according to a set of guidelines developed in collaboration with a group of leading health economists. Community-level HIV prevention intervention using peer leaders to support risk reducing behaviour amongst gay men. To determine whether the utilisation of peer leaders to influence the sexual behaviour of gay men within the community is cost-effective when compared with undertaking no prevention schemes. The choice of the comparator was justified by the authors. Cost-effectiveness analysis and cost-utility analysis. Men frequenting gay bars. Community. The economic study was carried out in Milwaukee, USA. Effectiveness data concerning changes in sexual behaviour were derived from a study undertaken in 1989. Resource and cost data for the intervention relate to 1996 levels. Lifetime costs associated with HIV care were derived from a study published in 1997. The price year was 1996. Effectiveness data concerning changes in sexual behaviour were derived from a single study. The parameters used to extrapolate these changes in behaviour into cases of HIV avoided were derived from published studies and expert opinion. An epidemiological model was used to extrapolate from base results concerning changes in sexual habits to estimates of the number of cases of HIV averted and the number of quality adjusted life years (QALYs) saved due to the prevention intervention. The following parameters, used within the model, were assessed from the literature: the prevalence of HIV in the community, per-act probability of HIV transmission for receptive anal intercourse, condom effectiveness and QALYs saved per prevented infection. The study was a non-randomised trial with concurrent controls. The trial involved one intervention site and two control sites. Follow-up surveys were undertaken at 3 and 6 months following the intervention. The participants completing the surveys were blind to the study intervention. Not stated. Not stated. Not stated. 10 studies were used. Not stated. Not stated Expert opinion. The per-act probability of transmission for insertive anal intercourse was estimated to be 0.09%. For the cost-effectiveness analysis the measure of benefit was given as cases avoided. For the cost-utility analysis quality adjusted life years saved was used as the measure of benefit. Costs associated with staff compensation payments, incentives for peer leaders to get involved with the intervention, materials, travel expenses, rent, catering and overheads were determined retrospectively and included within the analysis. The lifetime medical care costsassociated with HIV and AIDS, determined from a published study, were included in the analysis. The future costs were discounted at an annual rate of 3%. The quantity/cost boundary adopted was that of the health service. All costs were in 1996 dollars. Not assessed. US dollars ($). Not undertaken. Sensitivity analysis was carried out on the number of infections averted, effectiveness of condoms, prevalence of infection in the community and the transmission probabilities. The impact of three discount rates was determined (0%, 3% and 5%). Nine scenarios concerning the levels of HIV medical care required were investigated. Little information was provided concerning the sensitivity analysis itself or its results. The intervention was credited with preventing 0.262 HIV infections	EX_2

	and saving just under 3 quality adjusted life years (discounted at 3%) on the basis of the intervention being effective at altering behaviour for 2 months. The costs associated with the intervention were $17,150, or $65,458 per case of HIV averted. The lifetime costs of care associated with HIV are $87,045 per case (discounted at 3%). An incremental analysis showed that the intervention was cost saving:$5,656 per intervention, $21,587 per case. Costs and benefits were not synthesised as the intervention was associated with lower cost and better outcomes for the patient. Under these assumptions the intervention was the dominant strategy. The results of the sensitivity analysis indicated that the intervention remained cost-saving under all of the assumptions and scenarios examined. Community-level HIV prevention programmes, using peer leaders to endorse risk reducing behaviour, are cost-saving compared to no intervention under a set of reasonable assumptions, with an initial outlay for the intervention which is affordable for most community based AIDS prevention organisations. The authors suggested that further studies are needed to determine the cost-effectiveness of community-level and other HIV prevention interventions within a "real world" context. 9702159	
Poon et al. (2001)	A survey was conducted to assess the needs of men who have sex with men (MSM) of East and Southeast Asian descent who visit bars and/or bath houses in Toronto, Canada. The majority (n= 86) of respondents included in the final analysis (n=90) self-identified as gay or bisexual. The survey questionnaire addressed reasons for visiting bath houses and bars, sexual practices, condom use, HIV testing, willingness to interact with outreach workers and information respondents would like to receive from safer sex educators. Study results suggest that two sub-groups of this population should be the primary targets of bar/bath house outreach: (1) MSM of East and Southeast Asian descent under 39 and (2) bisexual men of East and Southeast Asian descent who visit bath houses. The findings also show that HIV-testing, information about HIV, and information about other sexually transmitted infections (STI) needs to be more accessible to these populations. Moreover, Asian MSM need safe and positive social spaces to meet as well as workshops about topics that concern them (e.g. safer sex negotiation). Evidence from this study also challenges the negative stereotypes that are sometimes attached to gay and bisexual Asian men	EX_quant. views
Porter and Ku (2000)	Purpose: To analyze the extent to which teenage males receive preventive reproductive health services and identify demographic and health factors associated with their receipt. Methods: Bivariate and multivariate analyses of nationally representative data from the 1995 National Survey of Adolescent Males were conducted using logistic regression to determine which factors predicted whether teenagers had a physical examination and whether they discussed reproductive health topics with a medical professional, had a human immunodeficiency virus (HIV) test, or had a sexually transmitted disease (STD) test. Results: Although 71% of males aged 15-19 years received a physical examination in the past year, only 39% of them received any of the three reproductive health services. Less than one-third of all young men discussed reproductive health with their doctor or nurse. Among sexually experienced males, one-sixth had an STD test and one-quarter an	EX_1

	HN test In multivariate analysis, males who had a physical examination were more likely to have an STD or HIV test, but were no more likely to discuss reproductive health topics. Minority and low-income youth were more likely to receive these reproductive health services, as were young men with multiple sex partners and those with health problems. Conclusions: In general, the proportion of teenage men receiving reproductive health services is low although levels are higher among minority youth and certain groups at risk. To reduce rates of teen pregnancy and STDs, physicians and nurses need to incorporate reproductive health fare into routine health services for teen-age males, as well as females. (C) Society for Adolescent Medicine, 2000	
Povinelli et al. (1996)	Objective: To identify temporal trends and predictors of human immunodeficiency virus (HIV) antibody testing in homosexual and bisexual youth, using the Health Belief Model as a conceptual framework. Designs Cross-sectional survey. Subjects: Five hundred one male volunteers, 13 to 21 years old, self-identified as homosexual, bisexual, or as having sex with men, were enrolled from June 1, 1989, to May 30, 1994. Methods: Structured interviews and written instruments, including measures of perceived susceptibility to and severity of HIV disease, benefits and barriers to testing, and cues to action. Based on significant (P<.001) bivariate associations, variables were selected for forward stepwise logistic regression analysis. Outcome Measure: Self-reported HIV antibody testing. Results: Forty-five percent of the subjects had undergone HIV antibody testing, with no significant differences between annual cohorts. Predictors of testing were having discussed same-sex feelings or experiences with a physician or counselor, a history of unprotected receptive anal intercourse, substance abuse, younger age at self-identification as bisexual or homosexual, ever having had a steady male partner, having many friends who understand sexual orientation, living away from family, and older age. Conclusions: Testing practices did not change significantly across time. Human immunodeficiency virus testing was related to age, risky behaviors, living situation, bisexual or homosexual acculturation, and contacts with health professionals, corresponding to Health Belief Model dimensions of perceived susceptibility, barriers, and cues to action	EX_7
Rees et al. (2004)	Report This review evaluated the effectiveness of HIV-related health promotion interventions in men who have sex with men. The authors concluded that cognitive-behavioural-based counselling or workshops can reduce incidences of unprotected anal intercourse with partners of unknown or sero-discordant HIV status. The authors' conclusions are reliably derived, but the primary recommendation might be overstated given the small number of included studies. This record is a structured abstract written by CRD reviewers. The original has met a set of quality criteria. Since September 1996 abstracts have been sent to authors for comment. Additional factual information is incorporated into the record. Noted as [A:....]. To evaluate the effectiveness of human immunodeficiency virus (HIV)-related health promotion interventions. The following abstract focuses on this evaluation. In the same report, the authors explored intervention processes, and the views and experiences of men who have sex with men	EX_sys rev

	(MSM) on the same topic. The evaluations were subsequently combined in a cross-study synthesis. Studies of HIV-related health promotion interventions (defined as those aiming to reduce or prevent new cases of HIV infection) were eligible for inclusion. Of particular interest were those delivered during or after 1996. The included interventions were generally multicomponent structures delivered by more than one type of provider. All interventions involved direct contact (as defined by the Community HIV and AIDS Prevention Strategy) on an individual or group basis. None of the included studies evaluated organisational, facilitation or equality interventions. Full details of the various interventions were provided in the report. Studies of gay or bisexual men, or MSM (who did not identify as being gay or bisexual) were eligible for inclusion. Of particular interest were men who were sero-positive for HIV, younger men (16 to 25), men from black and minority ethnic groups, men with lower educational achievement, and injecting drug users. Some of the included studies described HIV status; only one was directed at HIV-positive men. None of the included studies specifically targeted the other subgroups of interest, although individuals from these groups were represented in many cases. The included studies were conducted in the UK, USA, Canada and Australia. The primary outcome of interest was sero-discordant or unknown status unprotected anal intercourse (sdUAI). The secondary outcomes of interest were the incidence of casual unprotected anal intercourse (UAI); the incidence of sexually transmitted infection (STI); HIV incidence and test use; outcomes relating to attitudes, awareness, practical and interpersonal skills; and structural outcomes. None of the included studies measured interpersonal skills, structural outcomes, or HIV incidence. Outcomes were largely determined by self-report. Follow-up (baseline and post-intervention) ranged from 6 weeks to 3 years. Randomised controlled trials (RCTs) or controlled trials (CTs) were eligible for inclusion in the review. Eligible studies written in English were sought from electronic databases: MEDLINE, EMBASE and ERIC from 1992 to February 2003, and CINAHL, the Social Science Citation Index, PsycINFO and the British Education Index from 1992 to March 2003. The search terms were reported. Specialist registers were also searched to 2003. These included Bibliomap, PrevRev, DARE, HealthPromis, the Cochrane Controlled Trials Register, the Cochrane Database of Systematic Reviews, the Cochrane HIV/AIDS Group's trials register, the African Trials Register, the Health Scotland Library Catalogue, National Guidelines Clearinghouse, and the database of the CDC HIV/AIDS Prevention Research Synthesis project. The authors searched SIGLE (1992 to 2002) and consulted Sigma Research (University of Portsmouth, London, UK) specifically to identify unpublished material. The reference lists of retrieved papers and systematic reviews were screened; handsearches were carried out in the Social Aspects of AIDS book series (dates supplied in the report), and various website searches were conducted (details supplied in the report). Reports with publication dates prior to 1996 were excluded. Authors were contacted for additional reports where necessary. Two independent reviewers carried out the validity assessment, using an established framework incorporating 4 criteria: the provision of pre-intervention data for all individuals; the provision of post-intervention data for each group; the reporting of results for each outcome measure as defined in the aims of the	

	study; and the use of an equivalent control/comparison group. Those studies satisfying all 4 criteria were considered to be 'sound' or (where there was doubt regarding other sources of bias) 'sound despite discrepancies'. Any disagreements were resolved by consensus. Two independent reviewers selected the studies for inclusion in the review. Any disagreements were resolved by consensus. Two independent reviewers carried out the data extraction. Any disagreements were resolved by consensus. Mean differences and odds ratios (ORs) were calculated where necessary. Intention-to- treat analysis was not carried out. Authors were contacted for additional information where necessary. Where no significant heterogeneity existed and complete data were available, studies rated 'sound' or 'sound without discrepancies' were combined by outcome in a meta-analysis, using a random-effects model. Standardised weighted mean differences or pooled ORs and 95% confidence intervals (CIs) were calculated as appropriate. A narrative synthesis was used where statistical pooling was not possible. Publication bias was reported to have been explored using funnel plots. Statistical heterogeneity was explored using the chi-squared test. Where this was significant, potential (pre-determined) sources of variation were explored, including socio-economic/educational status, age, HIV status, country, differences in intervention intensity, and setting. Sensitivity analysis was planned to explore the influence of study design, quality and publication bias. Eight of 12 outcome evaluations (5 RCTs and 3 controlled cluster trials, n in excess of 3,978 participants) were included in the synthesis. The results reported here are for the synthesis of 8 studies that were judged to be 'sound' (2 studies) or 'sound with discrepancies' (6 studies). The results for publication bias and the planned sensitivity analysis were not reported. sdUAI. Two of the 5 studies measuring this outcome compared cognitive- behavioural-based counselling, or workshops using an individual allocation design, with standard HIV counselling (n=591). Pooled results at 6 months showed that cognitive-behavioural techniques were significantly more effective (OR 0.49, 95% CI: 0.29, 0.84) in reducing reported UAI with partners of unknown or sero-discordant HIV status. This trend continued at 12 months, but failed to maintain statistical significance. The loss to follow-up (18 and 16%, and 34 and 24% in the two studies intervention and control groups, respectively) was not addressed at either time point. Of the 3 remaining studies, a narrative synthesis of 2 cluster trials (n in excess of 2,687) involved peer-delivered community interventions. Neither study showed any evidence of effect, although both were reported as being not delivered as planned. UAI with casual partners. Two of the 6 studies measuring this outcome compared counselling or workshops that contextualised sexual risks with 'usual practice', defined as a waiting-list group and the provision of an HIV prevention video, respectively (n=525). Pooled results showed no evidence of effect on behaviour. A narrative synthesis of 3 cluster trials (n in excess of 2,753) focusing on peer-delivered information and outreach services compared with usual practice also showed no evidence of effect. This was attributed to differences and possible structural and cultural barriers in the implementation process. Other outcomes. There was no evidence of effect in any of the studies measuring HIV testing, or on practical skills. Limited reporting precluded any judgement	

	on the effect of interventions upon knowledge and attitudes. STI incidence was measured in 1 study which concluded that a potentially harmful intervention effect may have been linked to the possible increase of UAI in sero-concordant partners. Counselling, or workshops based on cognitive-behavioural techniques, can be effective for MSM who are at high risk of engaging in UAI with partners of unknown or sero-discordant HIV status. There is no evidence to suggest that community peer- delivered interventions should be discontinued. The review question was clear and supported by a comprehensive list of inclusion criteria. The search strategy was extensive and attempts to retrieve unpublished material should have reduced the potential for publication bias, although results for the latter were not reported. As the authors acknowledged, the restriction to English language papers means that language bias might have been introduced and relevant material might have been missed. A validity assessment was carried out and only the higher quality studies were synthesised. All aspects of the review process were carried out with adequate steps to minimise bias and error. Extensive details were provided on the primary studies, and the chosen methods of synthesis (based on tests for heterogeneity) appeared appropriate. The authors acknowledged the potential limitation of including a small number of studies in the meta-analysis, and the conclusions are reliably derived. However, the primary recommendation may be overstated given the small number of studies and the other potential limitations described. Practice: The authors stated that policy makers should consider implementing counselling or workshops using cognitive-behavioural techniques for MSM at risk of engaging in UAI with partners of unknown or sero-discordant HIV status. STIs should be addressed in all future interventions. Research: The authors stated that well-reported, rigorously conducted trials, with clearly defined outcome measures, are needed. Potential areas of focus include different intervention delivery modes involving knowledge building; the development of communication and decision-making skills; a clearer understanding of the complexities associated with attitudes and behaviours in the MSM population; and the provision of practical help and adequate support systems. Further evaluation of community peer- delivered interventions in the post-1996 UK context is recommended, as is the evaluation of sdUAI on STI incidence. Future research should include adequate piloting, and evaluate the implementation and acceptability of interventions in different settings. 1. Oakley A, Oliver S, Peersman G. Review of effectiveness of health promotion interventions for men who have sex with men. London: University of London, Institute of Education, Social Science Research Unit, EPPI-Centre; 1996. 2. Johnson WD, Hedges LV, Diaz RM. Interventions to modify sexual risk behaviours for preventing HIV infection in men who have sex with men (Cochrane Review). In: The Cochrane Library, Issue 1, 2003. Oxford: Update Software	
Reynolds et al. (2008)	Objectives. Bundling human immunodeficiency virus (HIV) testing with tests for other infectious diseases such as hepatitis C, syphilis, or gonorrhea has been proposed as a method to recruit at-risk individuals into HIV testing. The objectives of this study were to determine (1) the types of at-risk clients who choose the rapid vs. standard HIV test when bundled with hepatitis and sexually transmitted infection (STI) tests, and (2) whether clients receiving a	EX_11

	rapid HIV test are more likely to return on time for hepatitis and STI test results. Methods. We recruited individuals from drug treatment programs, methadone maintenance programs, needle-exchange programs, a community-based agency serving the gay and lesbian community, and the Center for Behavioral Research and Services' office-based testing facility at California State University, Long Beach from January 2005 through November 2007. Results. A total of 2,031 clients from a multiple morbidities testing program in Long Beach, California, were tested between January 2005 and November 2007. For clients receiving hepatitis and STI testing, the majority chose the standard HIV test. Clients who received a rapid HIV test returned in signifi-cantly fewer days than clients who received a standard HIV test. Injection drug users and sex traders were more likely to choose the standard HIV test and more likely to fail to return for test results on time. Conclusion. The rapid HIV test, in conjunction with hepatitis and STI tests, results in clients being more likely to return on time for hepatitis and STI results. Public health efforts should focus on acquainting high-risk clients with rapid HIV testing. copyright2008 Association of Schools of Public Health	
Rhodes (2004)	This study sought to explore an online intervention that was initiated by an AIDS service organization to reduce sexual risk within a geographically-oriented chat room frequented by men who have sex with men (MSM). Analyses of bio lines, user profiles, and chat room discussions were used to understand and characterize the online prevention intervention. Six predominate discussion topics were identified, including (a) sexual risk reduction strategies (e.g., safer "bare backing"), (b) HIV testing options, (c) local alternatives for nonsexual social support, (d) referrals for youth, (e) resources related to "coming out," and (f) access to risk reduction materials and supplies. The perceived anonymity promoted by the Internet and the health educator's established relationship with the men in the chat room contributed to the success of this intervention. This analysis suggests that an online HIV/AIDS prevention intervention may reach MSM inaccessible in traditional venues typically used for intervention delivery	EX_7
Riess et al. (2001)	This article examines gender differences related to why 66 injection and noninjection drug users tested for HIV. Study participants from three northern California counties underwent an open-ended qualitative interview covering: access to HIV testing, the meaning of HIV testing and test results, drug and sexual risk behaviors, and behavior changes associated with HIV testing, as well as a brief quantitative survey. The responses were analyzed using the following categories: (a) financial incentives for testing, (b) concerns related to family members and significant others, and (c) personal anxieties due to lack of knowledge of HIV status. Analyses showed that gender differences exist regarding reasons for HIV testing. The most significant finding was that women were motivated to test with regard to concerns related to family and significant others in their life more so than men, particularly during pregnancy. The impetus to test for many individuals was dependent on a social setting, such as jail, hospital, or drug rehabilitation program. Further research examining the motivational factors why drug users test for HIV can provide valuable information for outreach and marketing of HIV counseling-and-testing services	EX_1

Ross and Goldberg (1997)	General practitioners are one of the largest groups who offer HIV testing but little is known about the patient group who present for HIV counselling and testing in primary care. This study describes the risk factors, positivity rate, temporal trends and demographic profile of patients presenting to their general practitioner for HIV testing in central Scotland. Of 8,466 tests taken 1% (84) were positive with an independent association between a positive result and age group, history of drug misuse, homosexuality and region of testing. The majority of tests were performed in those who were at low risk and because of patient concern about HIV. No increase in the number of positive tests was apparent over the five-year study period. Variations between GP testing for HIV occurs in different regions and may reflect the underlying HIV positivity rate. General practitioners performing HIV tests are well placed to educate their patients about HIV and encourage low risk sexual behaviour patterns	EX_7
Rotheram-Borus et al. (1997)	Purpose: We examined HIV testing behavior and its predictors among adolescents considered at high risk for HIV. Methods: Self-reports of HIV testing, knowledge, attitudes, and high-risk acts were examined among 272 adolescents aged 13-23 years (M = 18.7; SD = 2.3) attending community-based agencies that serve youth at high risk for HIV in Los Angeles, New York City, and San Francisco. Results: Evidence of adolescents' risk for HIV is reflected in a rate of 4.8% seropositivity, 24% injecting drug use, a mean of 4.3 (SD = 11.6) sexual partners during the previous 3 months, and 71% condom use during vaginal/anal sex. HIV testing was common (63%) and often repeated (M = 3.6, SD = 4.0). Knowledge of the meaning and consequences of testing was high (84% correct). Contrary to service providers' expectations, youth were likely to return for their test results (90% returned). Youth who were older, labeled themselves gay or bisexual, lived in Los Angeles or San Francisco, and those who injected drugs were significantly more likely, compared to peers, to get tested for HIV. Conclusions: These results suggest a need for more detailed observational studies of HIV testing behavior that include evaluation of characteristics of the youth, the testing site, and the attitudes and beliefs of providers offering HIV testing	EX_7
Rotheram-Borus et al. (2001)	HIV-testing behaviors and intentions and attitudes toward HIV testing, particularly toward home tests, were assessed among 385 adults recruited in a street intercept survey from a gay-identified agency, a substance-abuse treatment program, and inner-city community venues (a shopping mall and community center). Across these Los Angeles sites, the proportion of persons reported being tested for HIV in their lifetime (77%) was higher than the national estimate. Gay-identified agency (88%) and substance-abuse treatment program participants (99%) were more likely to have been tested than were the community participants (67%). Participants from a gay-identified agency were more likely to have had an anonymous test (51%) than were those from a substance-abuse treatment program (25%) or community sites (24%). Attitudes toward HIV testing, including mail-in home-test kits and instant home tests, were very positive. Most participants were willing to pay about $20 for a home-test kit. Participants from the community sites (82%) and the substance-abuse treatment program participants (87%)	EX_quant. views

	endorsed notification of HIV status to health departments and sexual partners more than did participants from the gay identified agency (48%). (PsycINFO Database Record (c) 2009 APA, all rights reserved)	
Rothman (2004)	Although the rate of new cases of HIV infection has been relatively stable during the past decade, it remains unacceptably high, with 40,000 individuals newly infected each year. In 2001, the Centers for Disease Control and Prevention (CDC) issued revised guidelines for HIV counseling, testing, and referral directed toward promoting further reduction of HIV acquisition and transmission. The guidelines give explicit emphasis to the role of emergency physicians, according to recognition that the emergency department (ED) represents the only source of medical care for many patients and often serves as the primary site for routine health care to communities at risk for HIV. Despite the time and practical limitations inherent in ED practice, many studies suggest that routine HIV counseling, testing, and referral in the ED may be feasible and effective. This article reviews those studies in the context of the most up-to-date CDC HIV counseling, testing, and referral guidelines	EX_11
Rothman et al. (2003)	Objective: To perform a systematic review of the emergency medicine literature to assess the appropriateness of offering routine HIV screening to patients in the emergency department (ED). Methods: The systematic review was conducted with the aid of a structured template, a companion explanatory guide, and a grading and methodological scoring system based on published criteria for critical appraisal. Two reviewers conducted independent searches using OvidR, PubMed, MD Consult, and Grateful Med. Relevant abstracts were reviewed; those most pertinent to the stated objective were selected for complete evaluation using the structured template. Results: Fifty-two relevant abstracts were reviewed; of these, nine were selected for detailed evaluation. Seven ED-based prospective cross-sectional seroprevalence studies found HIV rates of 2-17%. Highest rates of infection were seen among patients with behavioral risks such as male homosexual activity and intravenous drug use. Two studies demonstrated feasibility of both standard and rapid HIV testing in the ED, with more than half of the patients approached consenting to testing by either method, consistent with voluntary testing acceptance rates described in other settings. Several cost-benefit analyses lend indirect support for HIV screening in the ED. Conclusions: Multiple ED-based studies meeting the Centers for Disease Control and Prevention Guideline threshold to recommend routine screening, in conjunction with limited feasibility trials and extrapolation from cost-benefit studies, provide evidence to recommend that EDs offer HIV screening to high-risk patients (i.e., those with identifiable risk factors) or high-risk populations (i.e., those where HIV seroprevelance is at least 1%)	EX_1
Sadler et al. (2006)	The pilot aim was to assess the feasibility and acceptability of undertaking anonymous HIV testing using oral fluid samples as part of a community-based survey of sexual attitudes and lifestyles of black African communities in London. The three components of the study were administered in various venues across London: (1) a cross-sectional self-completion anonymous	EX_1

	questionnaire survey, (2) an optional oral fluid sample for anonymous HIV testing and (3) a nested in-depth interview study in a sub-set of respondents. A total of 114 black African men and women were recruited. A large number of African countries were represented among respondents from newly-migrant and well-established communities. The response rate to the oral fluid sample was high at 82% ad all samples collected were of sufficient quality to be tested for HIV. In-depth interviews with respondents revealed positive views and experiences about participating in the study whilst understanding of the questionnaire was good. We therefore conclude that anonymous HIV testing as part of a community-based survey is feasible and acceptable, whilst a set of recommendations was produced to refine the survey methodology and questionnaire. Participatory research methods are essential for achieving successful community-based surveys among black Africans in Britain	
Salt et al. (2001)	Objectives: To evaluate factors that predict HIV testing using the model of health care utilisation as its conceptual framework and to analyse some of the factors that encourage or inhibit seeking an HIV test in this population. Method: A cross sectional questionnaire study in two Genito-Urinary Medicine (GUM) clinics in central Scotland. A final sample of 195 represented a 91% response rate. Participants were categorised by their HIV testing status (already tested, planning to be tested, no intention to seek testing). Results: The 'already tested' and 'planning to be tested' groups were combined as there were no significant differences on reported risk behaviours. Analysis therefore compared two groups those 'testing' (n = 66) and 'not testing' (n = 129). 67% of those not tested for HIV reported at least one HIV risk factor. Perceived risk was the strongest predictor of HIV testing using our model. Perception of risk and actual risk were not correlated. Those not seeking testing endorsed less benefits of testing and more denial of the need to be tested. Same day testing and testing without an appointment were endorsed as factors to promote testing. Conclusion: To encourage people who have high risk factors to access HIV testing, programmes should: (1) highlight the benefits of testing which would be lost if people do not test, eg. effective drug treatments (2) increase the range of HIV testing services available leg. same day testing). Furthermore, studies to determine the main predictors of perceived risk are needed if we are to increase testing in relevant populations	EX_1
San Antonio-Gaddy et al. (2006)	Objectives: To assess rapid and conventional HIV test use, client satisfaction, and counselors' comfort. Methods: At 61 HIV test sites in New York State, we compared HIV test use during the first 6 months of rapid testing in 2003 with the same time period in 2002. We administered surveys to clients at each site during the first 30 days of rapid testing and to counselors before and after training and after 12 weeks of using rapid tests in the field. Results: Almost all (1249 [96.5%] of 1294) clients surveyed selected rapid over conventional HIV testing. During the evaluation period, 6187 HIV tests were reported, 1667 (36.9%) more than during the same period in 2002. All 5771 (100%) of 5771 clients received their rapid HIV test results compared with 333 (85.8%) of 388 clients (P < 0.0001) who had elected conventional testing. After performing rapid testing for 12 weeks, 32	EX_1

	(80%) of 40 trained counselors reported feeling "very comfortable" delivering reactive rapid test results compared with 14 (35%) of 40 trained counselors (P < 0.001) before training. Conclusions: Rapid testing presents a key opportunity to increase the number of people undergoing HIV testing and the proportion receiving their test results	
Sanders et al. (2008)	New England Journal of Medicine This record was compiled by CRD commissioned reviewers according to a set of guidelines developed in collaboration with a group of leading health economists. The study examined a screening and counselling programme for human immunodeficiency virus (HIV). Different screening intervals (i.e. one-time or recurrent screening every 5 years) were also evaluated. The testing strategy consisted of a serum enzyme-linked immunosorbent assay followed by confirmatory Western blotting. The objective of the study was to evaluate the cost-effectiveness of voluntary HIV screening in health care settings. A further objective was to assess how incorporating the costs and benefits associated with reductions in HIV transmission would influence the cost-effectiveness of a screening programme. The baseline comparator was no screening. This represented a strategy in which symptomatic HIV-infected patients were detected through symptom-based case finding. The economic perspective of the study was not stated. Cost-utility analysis. The target population for the model was 43-year-old males or females whose HIV status was unknown. The setting was the community and primary care. The economic study was carried out in Durham (NC), USA. The effectiveness data were derived from studies published between 1988 and 2004. The resource use data were collected from two studies published in 1996 and 2004. The price year was 2004. The effectiveness data were derived from a review or synthesis of published studies, augmented by authors' assumptions. A Markov model (Decision Maker software, version 2003.11.1) was used to compare the quality-adjusted life expectancy and costs of the three strategies. The cycle of the model was 1 month. A lifetime horizon was used. The authors made several assumptions in their model: the benefits of testing and counselling accrued only if patients received their test results and entered care; the frequency with which case finding occurred was constant and high below a CD4 count of 50 cells/mm3, linearly related to the CD4 count between 50 and 350 cells/mm3, and not relevant with a CD4 count of more than 350 cells/mm3 when patients were assumed to be asymptomatic; highly active antiretroviral therapy (HAART) was started when the CD4 count of an identified HIV-infected patient was at or below 350 cells/mm3; patients who had drug-related adverse effects switched to a new antiretroviral regimen; if resistance developed to three successive antiretroviral regimens, only partial virologic suppression was possible; such patients continued to receive HAART and this partial suppression was sustained, reflecting the use of additional nonsuppressive regimens over time; all patients received prophylaxis against opportunistic infections when appropriate. The outcomes assessed were: annual incidence; the proportion of infected population who are men; the proportion of infected men who have sex with men; the CD4 count when infected with HIV; the CD4 count at onset of symptoms; adherence to the HIV-screening programme; the sensitivity of the screening test; the specificity of the entire sequence of screening tests; the CD4 count	EX_7

	triggering HAART; the transition rate (events/100 patient-years) from HIV to acquired immune deficiency syndrome (AIDS) and from AIDS to death; the probability of virologic suppression; intolerance requiring discontinuation of first regimen; the annual probability of infecting a sexual partner; the reduction in the annual transmission rate; and quality of life estimates. Not reported. Not reported. Not reported. Approximately 152 studies were included in the review. Not reported. Not reported. The authors made assumptions to derive estimates of effectiveness. The authors assumed a prevalence of unidentified HIV infection of 1%, a value consistent with the Centers for Disease Control and Prevention recommendation for screening. The authors assumed that 80% of patients who screened positive for HIV would enter care and receive appropriate treatment. On the basis of trials of counselling to prevent transmission of HIV by increasing condom use, the authors assumed a 20% reduction in transmission for patients with identified HIV infection. The measures of benefits used were the number of life-days saved and the quality-adjusted life-years (QALYs) or quality-adjusted life-days gained from adopting each of the strategies examined. Quality of life estimates were derived from completed studies. The costs considered were for testing and counselling, follow-up, and treatment for patients identified through screening or case finding. Costs for the care of HIV-infected patients receiving HAART were separated into drug-related and non-drug-related costs. The cost of multi-drug HAART was estimated from published wholesale costs of recommended drug regimens. The non-drug-related annual cost of treating patients varied on the basis of the CD4 count and clinical status. Discounting was appropriately carried out, owing to the long-term horizon of the study, at a rate of 3%. Estimations of the quantities and costs were derived using modelling and published studies. All the costs were adjusted to year 2004 US dollars. The authors reported the total discounted costs per patient Indirect costs were not included in the analysis. US dollars ($). The costs were treated deterministically. No statistical tests were performed. Several one-way sensitivity analyses were performed on health parameters. The parameters were varied within clinically significant ranges. In addition, the impact of transmission from injection-drug users to their partners was evaluated. Life expectancy was 21.063 years with no screening, 21.073 years with one-time screening and 21.076 years with recurrent screening. Compared with no screening, 3.92 life-days were saved with one-time screening and 0.97 with recurrent screening. The QALYs obtained were 18.626 with no screening, 18.634 with one-time screening and 18.636 with recurrent screening. Compared with no screening, 2.92 QALYs were gained with one-time screening and 0.70 with recurrent screening. No screening had a cost of $51,517; one-time screening cost $51,850 (incremental cost $333); and recurrent screening cost $52,086 (incremental cost $236). Both screening strategies were compared with no screening. The incremental cost-effectiveness ratios (ICERs) were expressed as $ per life-years saved (LYS) or QALYs gained. For one-time screening, the ICER was $31,084/LYS compared with no screening. For recurrent screening, the ICER was $88,328/LYS compared with one-time screening. For one-time screening, the ICER was $41,736/QALY gained compared with no screening. For recurrent screening, the ICER was $123,614/QALY gained compared with one-time screening. When the costs	

	and benefits to partners were incorporated, the ICERs were $12,919/LYS and $15,078/QALY gained for one-time screening compared with no screening, and $49,509/LYS and $57,138/QALY gained for recurrent screening compared with one-time screening. When a 1-log decrease in viral load reduced transmission by a factor of 1.5, screening cost $24,800/QALY compared with no screening. If counselling resulted in a reduction in risk behaviour of only 10%, screening cost $20,500/QALY. If men who have sex with men had only 1 partner at risk and heterosexuals had only 0.5 partner at risk, screening cost $25,300/QALY compared with no screening. If infectivity varied from a factor of 2 per 1-log decrease in viral load to no change, the cost-effectiveness ratio was $15,900/QALY. If the proportion of injection-drug users among HIV-infected patients varied from 25 to 35%, the cost-effectiveness ratio was $9,700/QALY. If the effectiveness of counselling in reducing high-risk injections varied from 25 to 50%, the cost-effectiveness ratio was $8,800/QALY. If HAART was started at a lower CD4 count (e.g. 300 cells/mm3), screening cost $14,200/QALY. Even if the identification of false positives took 3 years, the cost of screening would be less than $45,000/QALY gained at a prevalence of 0.1%. Screening for human immunodeficiency virus (HIV) infection is cost-effective relative to other commonly accepted screening programmes and medical treatments, even when the prevalence of HIV infection is substantially lower than 1% (a prevalence that the Centers for Disease Control and Prevention has used as general guidance for the initiation of routinely recommended as opposed to targeted screening). The authors suggested that in many health care settings, HIV screening will provide important health benefits for a reasonable investment in health care resources. The authors suggested that their finding has potential public health implications in that screening for HIV infection is likely to be cost-effective in a much broader range of health care settings than has previously been recognised. They also highlighted the importance of the public health benefit afforded by the identification of HIV infection. 15703422	
Schrappe and Lauterbach (1998)	OBJECTIVE: Systematic review on cost-effectiveness of public health interventions for primary HIV-prevention programs. DESIGN: Rating of publications using the guidelines for economic studies in medicine of the British Medical Journal Economic Evaluation Working Party. METHODS: Studies with defined nondrug intervention, defined study population, identifiable method of analysis and at least one endpoint for evaluation of intervention were included. One publication could consist of more than one study. Methods to generate effectiveness data, inclusion of human costs and kind of outcome parameters for economic evaluation were documented. To avoid bias in performing the review, the British Medical Journal guidelines were applied. Cost-effectiveness data were reviewed according to outcome parameters used in economic evaluation. RESULTS: Forty studies were identified in 34 publications, 30/40 from the United States and 22 supported by public funding; only five studies were directed to men who have sex with men, intravenous drug users and persons with HIV-infected partners. Screening programs and counseling with testing accounted for 30/40 studies. Complete research question (intervention and outcome) was presented in 29/40 studies (72.5%). Thirty-four studies were conducted from	EX_7

	the societal perspective and the viewpoint was clearly stated in 31/40 studies. Incremental analysis was performed in 21 studies, correction for inflation in two and discounting when appropriate in 23/29 studies; sensitivity analysis was performed in 23/40. Effectiveness data were presented in 38 studies. Diagnosis of previously unknown HIV infection (n = 11), sexual (n = 7) and vertical transmission (n = 6), infection of patients by healthcare workers and life years saved (both n = 6) served as the most common outcome parameters. In 21 studies, human costs were included in the estimation of costs (52.5%) and nine studies used the human capital approach. Cost-effectiveness data revealed costs between US$460 and US$1.2 million per case of previously unknown HIV infection prevented, strongly depending on prevalence. Studies on sexual and vertical transmission demonstrated lower costs when the benefits of treatment were included. Costs for 1 life-year saved varied between $29,000 and $458,000. CONCLUSIONS: The British Medical Journal guidelines for economic analysis in medicine are a feasible instrument for systematic reviews of cost-effectiveness studies on primary HIV infection. The quality of published studies varies widely. A clear definition of outcome parameters as an object of economic evaluation can be regarded as crucial, besides incremental analysis, discounting, and inclusion of human costs. Further work is needed to develop and evaluate a specific rating system for cost-effectiveness analysis in this field. [References: 57]	
Schwappach and Bruggmann (2008)	Background. As other countries, Switzerland experiences a high or even rising incidence of HIV and sexually transmitted infections (STI) among men who have sex with men (MSM). An outpatient clinic for gay men (" Checkpoint") was opened in 2006 in Zurich (Switzerland) in order to provide sexual health services. The clinic provides counselling, testing, medical treatment and follow-up at one location under an "open-door-policy" and with a high level of personal continuity. We describe first experiences with the new service and report the characteristics of the population that utilized it. Methods. During the 6-month evaluation period, individuals who requested counselling, testing or treatment were asked to participate in a survey at their first visit prior to the consultation. The instrument includes questions regarding personal data, reasons for presenting, sexual behaviour, and risk situations. Number and results of HIV/STI tests and treatments for STI were also recorded. Results. During the evaluation period, 632 consultations were conducted and 247 patients were seen by the physician. 406 HIV tests were performed (3.4% positive). 402 men completed the entry survey (64% of all consultations). The majority of respondents had 4 and more partners during the last 12 months and engaged in either receptive, insertive or both forms of anal intercourse. More than half of the responders used drugs or alcohol to get to know other men or in conjunction with sexual activity (42% infrequently, 10% frequently and 0.5% used drugs always). The main reasons for requesting testing were a prior risk situation (46.3%), followed by routine screening without a prior risk situation (24.1%) and clarification of HIV/STI status due to a new relationship (29.6%). A fifth of men that consulted the service had no history of prior tests for HIV or other STIs. Conclusion. Since its first months of activity, the service achieved high levels of recognition, acceptance and demand in the MSM community. Contrary to	EX_quant. views

	common concepts of "testing clinics", the Checkpoint service provides post-exposure prophylaxis, HIV and STI treatment, psychological support and counselling and general medical care. It thus follows a holistic approach to health in the MSM community with the particular aim to serve as a "door opener" between the established system of care and those men that have no access to, or for any reason hesitate to utilize traditional health care. copyright 2008 Schwappach and Bruggmann; licensee BioMed Central Ltd	
Schwarcz et al. (1997)	Objectives: To determine the predictors of prior or current, and repeat human immunodeficiency virus (T-HV) testing. Study Design: Cross-sectional survey. Methods: Sexually transmitted disease (STD) clinic patients who participated in a blinded HIV seroprevalence survey completed a voluntary questionnaire regarding their reasons for accepting or declining HIV testing. Results: Eighty-seven percent of participants reported a previous HN test or were HN testing the day they completed the questionnaire. African Americans were less likely to have been HIV tested (adjusted odds ratio 0.3, 95% confidence limits 0.1, 0.8). The most common reasons for testing were to be reassured and to receive medical care if infected. The most common reason for not testing was that nontesters did not think that they were infected. Repeat testing was reported by 51% of the participants and was more frequent among patients who were older or members of high-risk groups (P < 0.05). Patients tested repeatedly to confirm a prior HIV test result or because of continued risky behavior. Conclusions: Testing for HIV is frequent among STD clinic patients but less so among African Americans. Receipt of medical care appears to be an important motivation for HIV testing, whereas lack of perceived risk may discourage testing. Continued high-risk behavior contributes to repeat HIV testing	EX_1
Schwarcz et al. (2004)	Objective: Name-based HIV reporting has been recommended as a method to track the HIV epidemic but may deter or delay at-risk persons from HIV testing. Previous studies of a deterrent effect of HIV reporting were not conducted in areas with high HIV infection rates and politically active populations. Methods: In a cross-sectional survey, men who have sex with men (MSM) recruited from gay bars, heterosexuals recruited from the sexually transmitted disease clinic, and injection drug users (IDUs) recruited from street venues were administered a face-to-face anonymous questionnaire. Results: Ninety-four percent of the 118 MSM, 76% of the 99 heterosexuals, and 97% of 105 IDUs surveyed were tested. Six percent of MSM, 9% of heterosexuals, and none of the IDUs correctly identified California's HIV reporting regulations. Of the 75 (25%) participants who thought California had a name-based HIV reporting system, 2 were never tested and 23 had not been tested in the past 12 months. None of those who had never been tested and 2 of those who had not been tested in the past 12 months cited fear of being reported as a reason for not testing recently. Conclusion: Fear of reporting is an infrequently cited reason for delaying testing	EX_quant. views
Segovia-Tadehara et al.	A sample of 98 men who cruised for sex in public places completed survey questionnaires related to: public sex background, HIV testing, interaction	EX_7

(2005)	with police, HIV risk behaviors, and demographic information. Fifty-two percent had their first public sex encounter between the ages of 13-23, 76% had been tested for HIV, 15% were HIV-positive, 27% had been arrested, and some men engage in sexual behaviors that pose a significant risk for HIV and other sexually transmitted infections, e.g., anal sex w/o condoms. However, outreach efforts and harm reduction methods, where individuals are taught to reduce harmful behaviors, appear to have helped some research participants engage in better decision-making regarding public sex encounters. Continued intervention efforts are needed to assist men who have sex with men (MSM) in making healthful decisions in public sex environments	
Shapiro and Vives (1999)	although AIDS is spreading rapidly in minority communities, little is known about attitudes, knowledge, and behavior related to AIDS and HIV in the Asian community. The purpose of this study was to examine these variables in a sample of gay Asian males, as well as to investigate the relationship between knowledge, sources of information, culturally influenced attitudes and high-risk behaviors in this population. Results from a sample of 60 young Asian men who self-identified as "having sex with other men" indicated they were generally knowledgeable about methods of transmission and prevention, and appeared linked to a large information network that included informal sources such as peers and formal sources. However, significant percentages held culturally biased views of AIDS, such as believing race of partner or one's own gender role in the sexual encounter determined level of risk; and one third of the sample did not use condoms regularly. Having been tested for HIV was associated with holding less traditional cultural beliefs and a higher sexual activity level. Open communication about safer sexual practices was:associated with monogamous as opposed to multiple relationships and with decreased tendency to engage in alcohol-related unprotected sex. Variance in overall risk was predicted by demographic variables such as education, age, and:level of sexual activity, rather than by the attitudinal factors measured. Limitations of this exploratory study include a time-limited subject recruitment period and consequent small sample size, a homogeneous sample weighted toward young, well-educated, and middle-class respondents, and the exclusion of non-English speaking individuals. Nevertheless, study findings suggest that educational outreach targeting Asians who have sex with other men needs to address inaccurate cultural beliefs about HIV/AIDS, emphasize consistent condom use, and encourage models of open communication with partners about safer sexual practices	EX_7
Sherr et al. (2009)	n/a	EX_quant. views
Shin et al. (2007)	Although the documented incidence and prevalence of HIV/AIDS in South Korea are relatively low in comparison with other counties, rates are steadily rising. It is believed that many cases have not been diagnosed because of the extreme stigma associated with HIV/AIDS in South Korea that serves as a barrier to voluntary counseling and testing (VCT). Little is currently known about individuals who present for counseling and testing. The purpose of this	EX_quant. views

	study was to explore the characteristics of individuals who sought VCT at the Korean Alliance to Defeat AIDS (KADA). Data were collected from 264 individuals who presented for VCT between October I and December 30, 2005, using self-administered questionnaires. More men than women (218 and 46, respectively) participated in this study. A large majority (85.3%) reported never using condoms and/or inconsistent condom use. The major reasons given for seeking HIV testing were unprotected sexual intercourse with commercial sex workers, premarital sex, and extramarital sex. Although none of the participants were HIV-positive, most were engaged in high risk sexual behaviors. Additionally, participants sought HIV testing at KADA because the results were rapidly available and their anonymity was ensured. The results suggest the need for interventions focused on safer sex practices and the importance of rapid HIV testing and assurance of anonymity to those in need of testing	
Shoveller et al. (2009)	Objectives: To analyse the experiences of youths accessing sexually transmitted infection (STI) services and to examine the perspectives of service providers in four British Columbia communities. Methods: In-depth qualitative interviews were completed with 70 young men and women (15-24 years). In total, 22 service providers (for example, clinicians, staff) were interviewed about their experiences providing STI testing services as well as the policies and practice guidelines that inform their work with youths. In addition, naturalistic observation was conducted at 11 clinic sites, including: youth clinics, doctors' offices, public health units and a large clinic specialising in STI testing. Results: "Youth-friendly" STI testing services were rare despite being strongly desired by youth and service providers. Participants identified five barriers to accessing and/or providing youth-friendly STI testing: geography isolates many youths from testing service times or services, and presents privacy concerns, especially for rural youths. Clinic decor was perceived to be tailored for women and most service providers were female. Disclosing risky sexual behaviour to clinicians may be difficult for youths, especially for lesbian, gay, bisexual and transgender youths-particularly in contexts that are perceived to be homophobic. Many young women mistakenly believe that Pap smears include STI testing procedures, while many young men avoid testing because they fear the urethral swab and are unaware of alternative methods of specimen collection. Conclusion: This research reveals how structural and socio-cultural forces (for example, gender, place, physical space, culture) interact to shape the experiences of youths accessing STI testing services	EX_1
Skotniski et al. (1996)	To determine whether physicians are knowledgeable about the risk factors associated with HIV and whether perceived testing practices coincide with testing guidelines, 1,236 physicians were surveyed about which patients they would recommend for HIV testing. A total of 480 usable responses were obtained (response rate of 50% of the eligible sample). Most would suggest testing to partners of intravenous drug users, patients who received blood transfusions between 1978 and 1985, homosexuals and bisexuals, and patients with more than two sexually transmitted diseases. Only 46.4% would suggest testing to patients with more than two sexual partners, and 65.8% would test anyone who asks. Other patients to whom physicians	EX_quant. views

	would recommend testing were listed by 16.2%. Logistic regression (F-step) was used to examine the relationship between physician characteristics and likelihood of recommending testing. As a rule, physicians are knowledgeable about the major risk factors and would recommend testing according to guidelines. However, there may be a difference between questionnaire responses and actual practice	
Smith et al. (2006)	Rapid HIV testing allows same-day results, increasing the number of persons who learn their HIV status. Understanding how clients in different settings perceive rapid testing may increase acceptance of this technology. From June 1999 to August 2001 we interviewed 256 clients at a publicly funded urban sexually transmitted disease (STD) clinic and 1201 clients at a community- based HIV counseling, testing, and referral center (Los Angeles Gay and Lesbian Center; LAGLC) about their posttest satisfaction with rapid HIV testing. HIV prevalence was 3.9% at the STD clinic and 5.3% at the LAGLC. In multivariate analysis, adjusting for age, sexual orientation, race/ethnicity, history of STDs, self-perceived HIV risk, prior HIV test and HIV testing results, clients at the STD clinics (versus LAGLC) were more likely to find testing stressful (adjusted odds ratio [AOR]: 1.75, 95% confidence limits [CL]: 1.27, 2.42) and feel that they received their results too quickly (AOR: 2.05, 95% CL: 1.39, 3.03). Latinos (versus whites) were more likely to report that they received their results too quickly (AOR: 4.99, 95% CL: 3.48, 7.14) and that it would be better to wait a week for HIV test results (AOR: 2.48, 95% CL: 1.51, 4.09). Further research may elucidate the reasons why some groups prefer to wait for results, and enable policymakers to better design strategies to reach high-risk groups with rapid HIV testing	EX_quant. views
Solomon et al. (1999)	The authors report that individuals who are at highest risk of contracting HIV indicated the greatest concern about confidentiality and the greatest knowledge of local reporting laws. Although concern about confidentiality may not be cited as the most common reason to delay or defer testing, it is an important consideration for a minority of individuals--the very segment who are at highest risk of contracting HIV and are the most important targets of campaigns to encourage HIV testing. The particular concerns of this critical segment of the population at risk must be directly and carefully addressed and not lost in a general assessment of population-wide attitudes/concerns about HIV testing. Studies that examine individuals' concerns about HIV testing and privacy and do not stratify by level of HIV risk may obscure the important and heightened concerns of this most important subpopulation	EX_quant. views
Spielberg et al. (2003a)	Bathhouses are important Venues for providing HIV counseling and testing to high-risk men who have sex with men (MSM), yet relatively few bathhouses routinely provide this service, and few data are available to guide program design. We examine numerous logistic considerations that had been identified in the HIV Alternative Testing Strategies Study and that influenced the initiation, effectiveness, and maintenance of HIV testing programs in bathhouses for MSM. Key programmatic considerations in the design of a bathhouse HIV Counseling and testing program included building alliances with community agencies, hiring and training staff, developing	EX_11

	techniques for offering testing, and providing options For Counseling, testing. and disclosure of results. The design included ways to provide client Support and follow-up for partner notification and treatment Counseling and to maintain relationships with bathhouse management For support of prevention activities. Early detection of HIV infection and HIV prevention can be achieved for some high-risk MSM through an accessible and acceptable HIV counseling and testing program in bathhouses. Keys to success include establishing Community prevention collaborations between bathhouse personnel and testing agencies, ensuring that testing staff are supported in their work, and offering anonymous rapid HIV testing. Use of FDA approved., new rapid tests that do not require venipuncture, centrifugation, or laboratory oversight will further decrease barriers to testing and facilitate implementation of bathhouse testing programs in other Communities. (C) 2003 by he Haworth Press, Inc. All rights reserved	
Spielberg et al. (2003b)	Objective: To determine strategies to overcome barriers to HIV testing among persons at risk. Methods: We developed a survey that elicited testing motivators, barriers, and preferences for new strategies among 460 participants at a needle exchange, three sex venues for riten who have sex with men, and a sexually transmitted disease clinic. Results: Barriers to testing included factors influenced by individual concern (fear and discrimination); by programs, policies, and laws (named reporting and inability to afford treatment); and by counseling and testing strategies (dislike of counseling. anxiety waiting for results, and venipuncture). The largest proportions of participants preferred rapid testing strategies, including clinic-based testing (27%) and home self-testing (20%); roughly equal proportions preferred oral fluid testing (18%), urine testing (17%), and standard blood testing (17%). One percent preferred home specimen collection. Participants who had never tested before were significantly more likely to prefer home self-testing compared with other strategies. Blacks were significantly more likely to prefer urine testing. Conclusions: Strategies for improving acceptance of HIV counseling and testing include information about access to anonymous testing and early treatment. Expanding options for rapid testing, urine testing, and home self-testing; providing alternatives to venipuncture; making pretest counseling, optional; and allowing telephone results disclosure may encourage more persons to learn their HIV status	EX_quant. views
Striley et al. (2006)	This study tested whether having racially and gender-matched counsellors for HIV Post-test counselling were preferred. In the NIDA-funded EachOneTeachOne study, 115 African American respondents (19-68) were asked would they rather talk to someone of the same sex and race. Forty-three percent of the counsellor-respondent pairs were race concordant, and 58% were gender concordant. Chi-square statistics examined effects of gender, race and match. Out of those who desired a gender-match, 89% were men compared to 11% of women. Only 9% of African-Americans reported that they would feel more comfortable talking to an African-American counsellor. The sample size dropped due to non-response of the matching reference questions. Among the 39 race-counsellor concordant respondents (n=98), 23% expressed a preference for a race matched counsellor while no one with a race discordant counsellor expressed such a	EX_1

	preference. Among the 56 respondents with a gender concordant counsellor (n=102), 27% said they would prefer a gender matched counsellor in the future; only 7% of those with a gender discordant counsellor expressed such as preference. Previously matched respondents were more likely to desire matched counsellors, but the majority still did not. Assumptions that race and gender matching are imperative are not supported by these findings.	
Sullivan (1996)	This article reports findings from an exploratory study of HIV knowledge and risk behaviors among 60 teenagers and young men engaged in the street life of Hollywood, California. The sample was composed largely of youths of homosexual or bisexual orientation who were substance abusers, prostitutes, or both. The data suggest that although community-based education efforts may be associated with lower-risk behavior among this population, the overall risk profiles of these socially marginalized youths remained high. Inferences are drawn about the cofactors of risk that must be addressed and the education needed to enhance the health prospects of these youths.; This article opens with a review of the literature on research on HIV risk among adolescents in the US, which is organized into the following topics: adolescents and social contexts, social marginalization, sexual orientation, and developmental factors. The article then presents results of an exploratory study of HIV knowledge and risk behaviors found in 60 teenagers and young men 13-29 years old who were part of the street culture in Hollywood, California. Potential participants were included in the sample if they exhibited any combination of the following risk factors: unstable housing, involvement with illicit drugs, engagement in prostitution, or identification as gay or bisexual. Data were collected through 20-minute long structured interviews. It was found that 60% were White, 30% Black, 5% Hispanic, and 5% other; 90% were gay or bisexual; 80% were not traditionally employed; 25% were registered in school; 44% had no stable housing arrangement; and 57% used drugs. While 76% could identify a correct source of HIV infection, 75% of these also mentioned an incorrect source. Means of prevention mentioned were condom use (82%), not sharing needles (42%), and reducing the number of sexual partners (13%), but this knowledge did not translate into safe behavior (19% shared needles, 53% had intercourse without a condom, and 67% had multiple sex partners). Consistent condom use was reported by only 20%, 7% were celibate, and 63% had not undergone HIV testing. It was concluded that youth living at this level of marginalization are at very high risk of contracting HIV/AIDS and are unlikely to be served by available health promotion strategies. The distinct developmental needs of this population must be recognized in order to design programs to protect them from HIV/AIDS	EX_quant. views
Sullivan et al. (2004)	Background: Voluntary counseling and testing is an important strategy for HIV prevention. For optimal impact, however, clients must return for HIV test results and counseling. The goal of this study was to document the frequency of self-reported failure to return for HIV test results (FTR) and associated reasons among persons at high risk for HIV infection. Methods: Respondents were recruited at gay bars (men who have sex with men [MSM]), by street intercept (injection drug users [IDUs]), or at sexually transmitted disease clinics (high-risk heterosexuals [HRHs]) in 7 US states in	EX_7

	2000. Self-reported history of and reasons for FTR were evaluated. Results: FTR was commonly reported among 2241 respondents: 10% of MSM, 20% of HRHs, and 27% of IDUs reported FTR at least once. FTR was significantly (P < 0.05) more common among those with higher perceived risk of HIV infection and significantly less common among HRHs who had completed more than high school (vs. high school or General Education Development certificate) or were employed part time (VS. unemployed). About one fourth of respondents cited fear of getting test results as an important reason for FTR. Conclusion: Self-reported occurrences of FTR in our venue-recruited sample were similar to proportions of FTR previously reported from publicly funded venues. Increased pretest counseling on fear of learning HIV status and on the availability of rapid testing may help to reduce FTR	
Sy et al. (1998)	BACKGROUND: One barrier for individuals desiring human immunodeficiency virus (HIV) antibody testing has been the lack of alternatives to blood HIV testing. Oral fluid HIV testing provides another testing option. OBJECTIVES: To evaluate the acceptability of oral fluid testing for HIV antibodies in a gay bar outreach setting. STUDY DESIGN: This pilot study was conducted using the HIV Risk Behavior Survey (HRBS) and OraSure acceptability survey in gay bars in Columbia, South Carolina during July and August, 1997. RESULTS: Of the 118 HRBS participants, 54% agreed to take the oral fluid test with 6% testing positive. A majority (91%) of participants felt comfortable with the oral HIV antibody testing in gay bars. Also, 21.8% of individuals in the OraSure study were tested for the first time. CONCLUSION: This study indicates that oral fluid testing for HIV antibodies in an outreach setting is acceptable and effective in reaching individuals who do not usually access traditional testing sites	EX_quant. views
Tao and Remafedi (1998)	Journal of acquired immune deficiency syndromes This record was compiled by CRD commissioned reviewers according to a set of guidelines developed in collaboration with a group of leading health economists. An HIV prevention programme for gay and bisexual male adolescents; the prevention programme consisted of individual risk assessment and risk reduction counselling, peer education, optional HIV antibody testing and counselling, referral to medical and psychosocial services as needed, and longitudinal follow-up. The aim of the study was to assess the cost-effectiveness of an HIV prevention programme for gay and bisexual male adolescents. A 'do nothing' policy was regarded as the comparator. Cost-utility analysis. 13 to 21 year-old men who were self-identified as gay or bisexual or who had sex with men. Hospital. The economic study was carried out in Minnesota, USA. The main effectiveness data were collected between 1989 and 1994. Some of the clinical probabilities were obtained from published studies or reports between 1987 and 1997. The date to which the resource use data related was not explicitly specified. Some cost data were extracted from the published literature between 1993 and 1997. Some price data related to 1990 and 1992, and these were adjusted to 1994 using the consumer price index. Effectiveness data were derived from a single study, a review of the literature, and assumptions made by the authors. A mathematical model was used to	EX_7

	project the observed behavioural effects into future outcomes. The published literature was used to provide clinical probabilities, including a parameter to adjust HIV prevalence at each year end due to general ageing in and out of the 13 to 21 year-old cohort, the probability of HIV transmission in each infected-uninfected partnership, and the percentage of gay and bisexual adolescents recruited into the intervention. The study was a case series, carried out in a single centre. The mean duration of follow-up was 4.5 months. Loss to follow up was 25%. The principle (intention to treat or treatment completers only) used in the analysis of effectiveness was not explicitly specified. The health outcomes and clinical probabilities were the frequency of anal intercourse, the consistent use of condoms, substance abuse severity scores, use of amphetamines and amyl nitrite, quarterly average number of risky partners of uninfected non-participants, quarterly average number of risky partners of infected non-participants, quarterly average number of risky partners of uninfected participants, quarterly average number of risky partners of infected participants, and initial HIV prevalence. The health outcomes were derived using initial and follow-up interviews Not reported. Not reported. Not reported. A total of 8 studies or reports were included. Not reported. Not reported. Assumptions about effectiveness were also made by the authors. It was assumed that: (1) without intervention, no changes would occur in risky behaviours in the target population over time; (2) less risky behaviour due to the intervention would last for only 1 year before relapsing to the previous level of risk; (3) the selection of partners would occur without consideration to their HIV serostatus; (4) the age distribution in the target population was equal; (5) a zero growth rate was assumed for the target population during the 10-year period. The benefit measure was quality-adjusted life years (QALYs) saved. HIV seroprevalence in the target population by the end of a 10-year period, and number of infections averted were also reported. Benefits were discounted at a rate of 3%. Costs were discounted. Quantities were generally reported separately from the costs. Cost items were reported separately from the costs. The cost analysis covered the operative and overhead costs and medical savings due to the intervention programme. A societal perspective was adopted in the study. The sources of cost data were medical records of the study centre and the literature. 1994 price data were used. The cost data from 1990 and 1992 were adjusted to 1994 using consumer price indices. Costs were discounted. Quantities and costs were not reported separately. Human capital gains (the present value of expected lifetime earnings minus the productivity gains over the 10 year time frame of the study) were calculated using the human capital approach. Details were given for the method of estimation of the productivity gains. The price year was 1994. US dollars ($). One-way simple sensitivity analyses were performed on almost all parameters of the model. The prevalence at the end of a 10-year period without intervention was estimated to be 6.1% versus 5.6% with intervention. 13 infections were averted. 180 QALYs were saved, equivalent to 16.9 QALYs saved per HIV infection averted. The discount rate was 3%. The discount rate was 3%. The total cost of the intervention was $1.1 million for a 10-year period. The human capital gains were estimated to be $1,112,466. The incremental cost per QALY and total benefit minus total cost were used to combine the costs and benefits. The incremental cost-	

	utility ratio was $6,180 per QALY saved. The net benefit to society was about $10 million over the 10-year time frame of the study. The sensitivity analysis established the relative robustness of the results to changes in the parameters of the model in reasonable ranges. This study highlights that an HIV prevention programme can be cost-effective even if the effects on behaviour are partial and short term. As stated by the authors, further research based on more data when they become available, would be very useful to decision makers in the process of allocating resources to those HIV prevention interventions, which produce the greatest benefits to society. 9436764	
Task force on community preventive services (2007)	Partner counseling and referral services are one aspect of care available to HIV-positive people and the partners with whom they have sex and/or share hypodermic needles. The accompanying systematic review (M. Hogben et al; see record 2007-12322-005) found sufficient evidence that provider referral partner notification (PRPN) identifies a high-prevalence target population for HIV screening. The Task Force on Community Preventive Services therefore recommends the use of PRPN. In addition, the Task Force on Community Preventive Services also recommends the use of individual-, group-, or community-level person-to-person interventions to change sexual behaviors associated with HIV or sexually transmitted disease transmission among men who have sex with men. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	EX_1
Taylor et al. (2005)	Objective/Goal. The objective of this study was to evaluate the use of written protocols for sexually transmitted disease (STD) screening, the frequency and types of STD tests performed, and the occurrence and frequency of obtaining sexual risk assessments among HIV clinics. Study: A survey was administered to 36 medical directors, clinic directors, and HIV providers representing 48 HIV healthcare clinics in Los Angeles. Results: The use of a written or electronic protocol for STD testing was reported by 50% of clinics. Clinics with written or electronic STD protocols were significantly more likely to report questioning patients at each visit regarding their sexual practices (prevalence ratio, 2.2; 95% confidence interval, 1.4-3.4). Clinics with written or electronic protocols were not more likely to report more frequent STD testing. Conclusions: Written or electronic protocols for STD testing may promote sexual risk assessment questioning among HIV healthcare providers and may help to ensure STD testing per Centers for Disease Control and Prevention/IDSA guidelines for HIV-positive persons at sexual risk	EX_quant. views
Theodore and Koegel (2002)	This study examined how depression in HIV-negative gay men is related to risky sexual behavior and other psychosocial variables. It further explored how participation in a community-based HIV peer prevention counseling program influenced the attitudes and moods of gay men. The self-selected convenience sample consisted of 287 (18-66 yrs old) demographically diverse HIV-negative gay men. After 10 sessions of individual peer counseling, gay men had significantly less depression, less daily cognitive preoccupation with HIV, less anxiety about taking an HIV test, greater internal locus of control regarding HIV prevention, greater commitment to	EX_7

	maintaining safer sexual practices, and more frequent use of protection during anal intercourse. These findings suggest that gay men struggling with issues of sexual safety may reduce their risk of HIV infection by engaging in brief, intensive, psycho-educational, supportive peer counseling. (PsycINFO Database Record (c) 2009 APA, all rights reserved)	
Thompson and Smith (2001)	The risk factors, referral pattern and presence/absence of genital tract symptoms and/or sexually transmitted infections (STIs) in 189 patients having HIV counselling and/or testing at genitourinary medicine (GUM) clinics are reviewed. Eighty per cent were concerned about heterosexual transmission, 9.5% men who have sex with men (MSM) and 4.8% intravenous drug users (IDUs). Heterosexuals and first-time GUM attenders were more likely to have sought prior advice from their general practitioner (GP). The majority were asymptomatic for genital tract infections, but 83% accepted an STI screen, with 44 STIs being diagnosed. Only one individual who had attended primarily for HIV screening was found to have an STI. About half of individuals presented within the window period, and of those stating that they wished to proceed with deferred testing, half subsequently failed to return, resulting in wasted health adviser appointments	EX_7
Thorvaldsen (2001)	n/a	EX_7
Tierney (1998)	Despite the President's directive on youth and HIV in 1997 to focus the nation's attention on adolescents and the battle against AIDS, prevention programs continue to be ineffective. The number of seropositive youth, ages 13 to 24 years old, is unclear due to inconsistent definitions of age ranges and inadequate access to testing. Youth have not sought testing for many reasons, including failing to perceive their vulnerability to HIV, confidentiality concerns, and not realizing the effectiveness of early treatment. Adolescents are creating independence, establishing relationships, and learning about drugs and alcohol. Young gay and bisexual men, drug-using youth, and youth of color are at high risk of HIV transmission. Identifying the population involved in risk-taking behavior and eliminating the behavior is an ineffective strategy for adolescent HIV prevention programs. Complicating the issue further, the goals and expectations of adolescents differ from the adults who design and deliver prevention programs. HIV education and prevention efforts need to address solutions to hopelessness, isolation, and violence, rather than focusing on the negative effects risky behaviors will have in the future. Effective programs combine a youth/adult partnership to take advantage of the strengths of each individual. Strategies for implementing prevention programs that address the specific needs of adolescents are suggested	EX_7
Tipnis and Fox (2006)	We audited the practice of offering, and the uptake of, an HIV antibody test in new genitourinary medicine clinic attenders. We aimed to determine if we have reached targets set in the National Strategy for Sexual Health and HIV for 2006. We also aimed to determine whether patients at higher risk of acquiring HIV infection reached these targets. We found that nearly all patients were offered an HIV lest (94.7%) and uptake was 60.5%,	EX_11

	demonstrating that we have already reached our target. However, in this audit, the 60% uptake targets were not met by patients at increased risk of HIV, with 52.9% uptake in men who have sex with men and 50% uptake in Black Africans	
Torian et al. (2008)	We investigated whether there were racial/ethnic differences among young men who have sex with men (MSM) in their use of, perceived importance of, receipt of, and satisfaction with HIV prevention services received at health care providers (HCP) and HIV test providers (HTP) that explain racial disparities in HIV prevalence. Young men, aged 23 to 29 years, were interviewed and tested for HIV at randomly sampled MSM-identified venues in six U.S. cities from 1998 through 2000. Analyses were restricted to five U.S. cities that enrolled 50 or more black or Hispanic MSM. Among the 2,424 MSM enrolled, 1,522 (63%) reported using a HCP, and 1,268 (52%) reported having had an HIV test in the year prior to our interview. No racial/ethnic differences were found in using a HCP or testing for HIV. Compared with white MSM, black and Hispanic MSM were more likely to believe that HIV prevention services are important [respectively, AOR, 95% confidence interval (CI): 3.0, 1.97 to 4.51 and AOR, 95% CI: 2.7, 1.89 to 3.79], and were more likely to receive prevention services at their HCP (AOR, 95% CI: 2.5, 1.72 to 3.71 and AOR, 95% CI: 1.7, 1.18 to 2.41) and as likely to receive counseling services at their HTP. Blacks were more likely to be satisfied with the prevention services received at their HCP (AOR, 95% CI: 1.7, 1.14 to 2.65). Compared to white MSM, black and Hispanic MSM had equal or greater use of, perceived importance of, receipt of, and satisfaction with HIV prevention services. Differential experience with HIV prevention services does not explain the higher HIV prevalence among black and Hispanic MSM	EX_quant. views
Valdiserri et al. (1999)	n/a	EX_11
Van de Ven et al. (2000)	The aim of this research was to develop a brief scale of gay men's optimism-scepticism in the context of new HIV treatments. Following comprehensive literature search and communicatior with other researchers, 34 items about viral load testing, HIV therapies and concern about HIV infection were generated. By way of anonymous, self-complete questionnaires, these items were put to 532 gay men recruited at the Sydney Gay and Lesbian Mardi Gras Fair Day in February 1999. Principal axes factor analysis and item refinement yielded an optimism-scepticism scale based on 12 items (range 12-48, with higher scores indicating greater optimism). The sample mean was 19.8 (SD = 4.7). The scale had high internal consistency reliability (Cronbach's alpha = 0.79). Providing preliminary evidence of validity, men who reported unprotected anal intercourse with a casual partner 'in the past six months' had a significantly higher mean score (21.3) than those who did not report this risk practice (19.5, p < 0.001). Similar validation was provided from separate samples of gay men in Queensland and Sydney. Our scale of optimism-scepticism in the context of new HIV therapies is a brief, reliable instrument which can be incorporated within broader questionnaires and interview schedules. It is a useful tool to monitor attitudes toward HIV	EX_2

	therapies and possible associations with risk practices	
Varghese et al. (1999)	AIDS This record was compiled by CRD commissioned reviewers according to a set of guidelines developed in collaboration with a group of leading health economists. Testing for HIV and risk reduction counselling (pre-test and post-test) of people attending Sexually Transmitted Diseases (STD) clinics and adding partner notification to the testing and counselling programme. Are programmes for HIV testing and counselling cost effective? If partner identification is added to such programmes are they cost effective? The comparator was stated as 'no intervention', which represents the status quo. Cost-effectiveness analysis. The study consisted of patients attending STD clinics. Primary care, community clinics for STD in the USA. Epidemiological and effectiveness data were derived from a non systematic review of the literature and were retrieved from studies published between 1991 and 1998. Resource use data were also taken from studies published between 1991 and 1998. The price year was 1997. Effectiveness data were derived form a review of the literature plus authors' assumptions. Two decision trees (Treeage DATA) were used to model the cost-effectiveness of the intervention, to determine how many HIV cases would occur with and without the treatment. The first tree compared counselling and testing to no counselling and testing. The second tree compared partner notification to no partner notification. The review assessed probabilities associated with HIV prevalence, the uptake of counselling, the effects of counselling on behaviour and the rate of transmission of HIV with and without counselling, referrals to the clinic when the patient notifies partners and when the clinic notifies partners. Not reported. Not reported. Not reported. Approximately 16 studies were included in the review. A point estimate was chosen from the range identified in the literature, but the basis for choosing the point estimate was not always reported. Not reported. In the modelling exercise the authors assumed that each index patient (IP), (the person who had been tested and found to have HIV) was assumed to have only one partner. The partner of the IP was assumed to have no more than one other partner apart from the IP. Heterosexual transmission and infection rates, rather than the rates applicable to men who have sex with men and injecting drug users, were used in the model. Also the HIV incidence among STD clinic patients, rather than the general population, was used. The number of HIV cases prevented was used as the measure of benefit. A decision tree was adopted to estimate the probability of HIV infection with and without the programme. Health states were not valued. Costs were taken from the literature and were discounted when necessary, i.e. for the costs of treating someone with HIV. Quantities and costs were not reported separately. The costs were valued at 1997 prices, the years of the original data were 1992 and 1996. The medical care services component of the Consumer Price Index (CPI) was used to reflate the cost data. No difference between marginal cost and average cost was reported. Costs included counselling, testing, finding and notifying partners, and treatment costs of HIV. The perspectives adopted were that of both society and the provider of the services. To take account of all costs incurred by society, patient time involved in the counselling and testing for HIV was included as an indirect cost, and was reflated to 1997 prices. No discounting took place because the	EX_1

	costs were not incurred over an extended period of time. Quantities and costs were not analysed separately. The data source was published literature, but the details of how the sources were chosen were not given. US dollars ($). A series of one-way sensitivity analyses was carried out with respect to the following parameters: risk of HIV transmission, risk of acquiring HIV, effectiveness of counselling on behaviour, treatment cost of HIV. All other parameters were also subjected to sensitivity analysis but the authors stated that the results were not sensitive to changes in these parameters. The generalisability of the results was not addressed. The benefit of testing for HIV and risk reduction counselling (pre-test and post-test) of people attending STD clinics was a reduction of 7.77 (per 10,000 people) in the number of HIV cases in comparison with the do nothing option. The benefit of adding partner notification to the testing and counselling was a reduction of 7.94 cases when the patient notifies their partner, and 9.01 when the clinic notifies the partner. The reduction is for the year following the intervention. No side effects were considered. The initial cost, for 10,000 people was $248,196 for counselling and testing only, and $283,000 when partner notification was added (when partner notified by clinic). The cost of the programme was assumed to be unchanged if the patient notified their partner. For 10,000 people tested, the cost of treating people with HIV was $6,984,779 for counselling and testing only, and $6,768,492 when partner notification was added (partner notified by clinic). The cost was $6,960,597 when the patient notified the partner. Had there been no testing and counselling programme the cost of treating people with HIV was taken to have been $8,222,935. The costs of treating people with HIV were discounted by 3% and all costs were expressed in 1997 prices. The incremental cost of testing for HIV and risk reduction counselling (pre-test and post-test) of people attending STD clinics was -$989,960, -$1,014,142 when partner notification was added to the testing and counselling programme (when the patient informed their partner), and -$1,071,443 when the clinic informed the partner. Thus both testing for HIV and risk reduction counselling (pre-test and post-test) of people attending STD clinics and adding partner notification to the testing and counselling programme would result in a lowering of total health-care expenditure. Each type of intervention was shown to reduce the number of HIV cases and to reduce the total health expenditure on HIV. For the clinic providing the intervention to 10,000 people, the cost of a reduction of 8 in the number of HIV cases would be $248,196, for testing for HIV and risk reduction counselling (pre-test and post-test) of people attending STD clinics. Adding partner notification to the testing and counselling programme would reduce the number of HIV cases by 9 and cost $283,000. Total health care costs for society would go down by $989,960 with testing for HIV and risk reduction counselling (pre-test and post-test) of people attending STD clinics and by an extra $181,483 for adding partner notification to the testing and counselling programme. The reduction in expenditure resulting from treating fewer people with HIV would be greater than the cost of providing the intervention. The results were shown to be sensitive to certain key parameters. If the treatment costs of HIV went down to $40,000, if infection risks go down, (from 3.5/1000 to 1/1000) and if the risk of transmission goes down (from 7/100 to 1/100) then total healthcare costs would not go down	

	under testing for HIV and risk reduction counselling (pre-test and post-test) of people attending STD clinics. If treatment costs went down to $20,000 and infection risk went down to 1.6/100 then adding partner notification to the testing and counselling programme would not result in a reduction in health costs. The authors point out the sensitivity of the results to assumptions about the effectiveness of counselling on changing risky behaviour, 10-70% was the range of possible values for infected people, and 10-50% for uninfected people. They report that if the 70% value is chosen for the former, 10 fewer people would acquire HIV, if 50% is chosen for the latter, 15 fewer people would become infected with HIV. The authors did not specify for which of the interventions these results were obtained. Counselling and testing for HIV would reduce total costs for the healthcare system as a whole and reduce HIV cases by 8 (per 10,000 people tested). If the programme is extended to include partners of infected persons, HIV cases would be reduced by 9. The authors regard this evidence as sufficient to justify expenditure on counselling and testing for HIV. The authors recommend that society would be better off with programmes of testing and counselling for HIV. They say that their research would have been more reliable with better information on the effectiveness of counselling. The large range in the estimates of effectiveness of counselling shows how important it is to find out why there is such a big variation and to establish the characteristics of successful counselling. They point out the need for further research on the lifetime probability of HIV infection; with that research their own research would be more useful. Despite the limitations of the study, the overall conclusion seems robust. 10509577	
Vargo et al. (2004)	The authors describe a community-based pilot study to boost HIV testing in a minority community through social network recruitment and a noninvasic HIV testing methodology. Over an 11-month period, the number of test takers at the intervention site increased by 71.7%, and the proportions of test takers with risk factors similar to those of peer recruiters (heterosexual sex and multiple partners) increased by 24.2% and 19.5% respectively. At a comparison site, testing remained stable, while the proportion of test takers reporting heterosexual sex and multiple partners decreased by 42.5% and 21.8%, respectively. The use of a social network recruitment strategy in combination with an oral HIV test shows promise in increasing testing and in targeting populations. Cites three references. [Journal abstract]	EX_1
Vernon et al. (2001)	Purpose: The study sought to understand the HIV testing patterns of low-income drug users. Methods: Sixty-seven low-income drug users were recruited from street outreach venues in three San Francisco Bay Area counties. Participants were interviewed using an open-ended questionnaire eliciting information on HIV testing histories, sexual behavior, and drug use. Transcripts from interviews were coded and anlayzed using methods consistent with the grounded theory approach of qualitative research. Results: Participants identified four themes related to HIV testing: (1) anticipating positive results, (2) belief in a 10-year window period during which the virus is undetectable, (3) regular HIV testing as part of self-care, and (4) the HIV test as a means of control. These themes did not relate to personal risk behavior but rather to the community experience of HIV in	EX_1

	small, dense populations of low-income drug users with high rates of HIV infection. Implications: Participants used HIV testing like regular mammograms or blood pressure checks, as if it were a screening procedure for a chronic illness. This is a reasonable response given the context of HIV within their communities. HIV testing in this population should not be limited. (C) 2001 Elsevier Science Inc. All rights reserved	
Vidanapathirana et al. (2006)	BACKGROUND: Use of the mass media is one of the important strategies in communicating behavioral change in relation to HIV/AIDS prevention. Mass media are used to promote voluntary HIV counseling and testing and to sustain test-seeking behavior. OBJECTIVES: To assess the effect of mass media interventions and the most effective form of mass media intervention at a general population level or in specific target populations, in relation to changes in HIV testing, compared with a control group or with pre-intervention levels. SEARCH STRATEGY: We searched the Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 2, 2004), MEDLINE (1966 to April 2004), EMBASE (1980 to April 2004), NLM Gateway, CINAHL (1982 to April 2004), AIDSearch (1980 to April 2004), and PsycINFO (1974 to April 2004), Sociological abstracts (1982 to April 2004), and Communication studies (1982 to April 2003). The reference lists of related reviews were searched and experts in the field were contacted to identify ongoing research. Relevant web sites of international agencies (UNAIDS, WHO, UNFPA, World Bank, and Centers for Disease Control and Prevention) were also searched. All these searches were done without language restriction. All databases were searched up to April 2004. SELECTION CRITERIA: Randomized controlled trials, including cluster-randomized trials and controlled clinical trials, that compared either multimedia interventions or one type of media strategy with a control in relation to promotion of HIV testing were included. Interrupted time series analyses that assessed the effect of mass media against no media or an alternative intervention to promote HIV testing were also included. DATA COLLECTION AND ANALYSIS: Two reviewers independently assessed trial quality and extracted data. Study authors were contacted for additional information. Types of mass media interventions, participants, and outcomes were extracted in every possible instance. MAIN RESULTS: Of the 35 references that were identified, two randomized controlled trials, three non-randomized controlled studies, and nine interrupted time series were included in the final analysis. All individual studies concluded that mass media were effective, and this was confirmed by reanalysis of the interrupted time series studies which all had initial impact. Mass media interventions for promotion of HIV testing showed significant immediate (Random effect: Estimated mean = 5.487, 95%CI = 2.370 to 8.605) and overall (Random effect: Estimated mean = 6.095, 95%CI = 1.812 to 10.378) effect. No long-term effects were seen on mass media interventions for promotion of HIV testing (Random effect: Estimated mean = 4.447, 95%CI = -0.188 to 9.082). AUTHORS' CONCLUSIONS: Mass media interventions have immediate and overall effects in promotion of HIV testing. No long-term effects were seen. There was no significant impact of detecting seropositive status after mass media intervention for promoting HIV testing, and this finding was limited to a small number of studies. Further research is required to identify possible	EX_sys rev

	effects on seropositivity status after mass media intervention for promotion of HIV testing among high-risk groups in epidemic countries. Additional research is needed to identify the effectiveness of different types of mass media interventions, the cost effectiveness of the interventions, and characteristics of messages. MASS MEDIA CAMPAIGNS DESIGNED TO RAISE AWARENESS OF HIV AND AIDS HAVE SHOWN IMMEDIATE AND SIGNIFICANT EFFECTS IN THE PROMOTION OF VOLUNTARY COUNSELING AND TESTING FOR HIV.: According to UNAIDS, 42 million people in the world have HIV infection. Notably, the majority of new infections are preventable and are spread through unsafe sex. Voluntary counseling and testing (VCT) can lead to the practice of safe sexual behaviors and increased condom use, thus preventing spread of the disease.While mass media campaigns have shown an immediate and significant overall effect on VCT, no significant long-term effect was demonstrated. This may have been due to the shor duration of the campaigns. Further research is needed to identify the impact of mass media campaigns, their cost effectiveness, and types of campaigns and message characteristics. In addition, more studies are needed to explore new media strategies for the long term	
Watson et al. (2003)	Prevention of infection with the blood-borne pathogens (BBPs) HIV and hepatitis B and C remains a major public health challenge. The aim of this study was to assess the activity, knowledge and attitudes of community pharmacists in Grampian in prevention of HIV and hepatitis B and C. A questionnaire survey of community pharmacies was carried out in Grampian, a mixed urban-rural Health Board area in NE Scotland with a population of 532-432. The results were 99 out of 128 (77%) community pharmacies responded. Many pharmacies were providing services for drug misusers. Nearly all pharmacies stocked condoms, 57 pharmacists stated that they stocked extra-strong condoms, and two stocked dental dams. Two-thirds had leaflets relating to safer sex, HIV or hepatitis. Less than half stated that they had lists of local agencies dealing with drug-related or sexual health problems. Knowledge of the BBPs, and confidence in giving advice, were greater for HIV than for hepatitis B and C. Few were aware of recommendations for hepatitis B vaccination. The majority felt that in the future pharmacists could have a greater role in prevention of these infections. Principal barriers to preventive activity were described as time pressure, lack of a private area and lack of training. The conclusions were there is untapped potential for community pharmacists to be a focus for advice and information relating to prevention of HIV and hepatitis B and C; however, resources are needed to address the current barriers identified. Cites 19 references. [Journal abstract]	EX_2
Williams et al. (2001)	Our objectives were (1) to assess the number of young people aged under 16 years attending genitourinary medicine (GUM) departments in the UK in 1998; (2) to identify clinical activity and policy; (3) to determine the knowledge and training needs of healthcare professionals within GUM providing care for this client group. In July 1999 a questionnaire was circulated via the 18 regional British Co-operative Clinical Group (BCCG) representatives to the consultants in charge of all 197 main GUM	EX_1

	departments in the UK. One hundred and sixty out of 197 (81%) completed questionnaires were returned and analysed. The reported number of under-16-year-olds attending in 1998 varied considerably between clinics; for females ranging from 0 to 256 and for males between 0 and 50, with a male to female ratio of 1:4.4. The majority of responding clinics, 139/160 (87%) had been involved in the screening of abused children/adolescents for sexually transmitted infections (STIs). Most clinics were prepared to screen for STI (86%), HIV test (79%) and assess contraceptive needs (50%) in this age group. Staff involved in care included health advisers (74), nurses (59), and doctors (138) in the responding clinics. Only 31/160 clinics (19%) had a written policy for the management of children/ adolescents attending their clinic. The majority of respondents were aware of their child protection policy [122/ 154 (79%)] and designated child sexual abuse doctor, [125/157 (80%)] in their district. When questioned on previous and current training needs, 134/160 (84%) respondents identified their need for further training in the area of adolescent sexual health and 124/160 (78%) in child sex abuse. The publication Physical Signs of Sexual Abuse in Children(1), was known to 112/160 (70%) respondents, of whom 58/112 (52%) who answered this question had read the publication. Genitourinary physicians in the UK are aware of the increasing number of children and adolescents accessing their services, and recognize the need to identify those in abusive situations. Written policies dealing with children and adolescents in GUM clinics in the UK are lacking. This needs to be rectified urgently. This survey identifies that further training in the field of child sexual abuse and adolescent sexual health would be welcomed by the respondents	
Williamson et al. (2001)	Objective: To assess the impact of a peer education intervention, based in the "gay" bars of Glasgow, which sought to reduce sexual risk behaviours for HIV infection and increase use of a dedicated homosexual men's sexual health service, and in particular increase the uptake of hepatitis B vaccination. Design: Self completed questionnaires administered to men who have sex with men (MSM) in Glasgow's gay bars. Subjects: 1442 men completed questionnaires in January 1999, 7 months after the end of the 9 month sexual health intervention. Main outcome measures: Self reported contact with the peer education intervention, reported behaviour change, and reported sexual health service use. Results: The Gay Men's Task Force (GMTF) symbol was recognised by 42% of the men surveyed. Among men who reported speaking with peer educators 49% reported thinking about their sexual behaviour and 26% reported changing their sexual behaviour. Logistic regressions demonstrated higher levels of HIV testing, hepatitis B vaccination, and use of sexual health services among men who reported contact with the intervention. These men were more likely to have used the homosexual specific sexual health service. Peer education dose effects were suggested, with the likelihood of HIV testing, hepatitis B vaccination, and use of sexual health services being greater among men who reported talking to peer educators more than once. Conclusion: The intervention had a direct impact on Glasgow's homosexual men and reached men of all ages and social classes. Higher levels of sexual health service use and uptake of specific services among men who had contact with the intervention are suggestive of an intervention effect. Peer education, as a form of health	EX_11

	outreach, appears to be an effective intervention tool in terms of the uptake of sexual health services, but is less effective in achieving actual sexual behaviour change among homosexual men	
Wolitski et al. (2000)	Sources of HIV information were examined for 774 male and female injecting drug users (IDUs). The majority (80.7%) had received HIV information from one or more sources in the prior 3 months. The most frequently mentioned sources were television (39.9%) and friends or family (22.2). There were few differences in source of HIV information with regard to gender, ethnicity, or age. Differences were more frequently observed between cities. The relationship of information source and subject characteristics with HIV knowledge, perceived risk, drug-related and sexual practices was examined using logistic regression. For men, exposure to mass media sources (OR = 1.48) and small media materials (OR = 2.03) were related to HIV knowledge. Small media and interpersonal information were related to HIV testing for men (OR = 1.95 and 1.85, respectively) and women (OR = 2.25 and 2.54). Interpersonal sources of information were also associated with increased sharing of injection equipment (OR = 2.04) and bleach use (OR = 2.23) among female IDUs. Significant differences in HIV knowledge and risk-related practices were also observed for ethnicity, city, men who have sex with men, and women who had traded sex for money or drugs. Implications for targeting HIV prevention efforts for IDUs are discussed	EX_7
Woods et al. (2000)	The purpose of this study was to evaluate a programme of human immunodeficiency virus (HIV) antibody testing at gay sex clubs. Conducting secondary analyses with 2 datasets, we evaluated HIV-testing preferences of patrons at 2 sex clubs and compared their risks to testers at a standard testing clinic. Sex club testers had significantly more partners and were significantly older than their clinic peers. Sixteen per cent of sex club testers reported that they would not test if tasting were not available at the sex club. Gay sex clubs offer an opportunity to reach men at high risk for HIV, some who otherwise may not test	EX_quant. views

12.0 Appendix E. Studies located through the call for evidence

As part of the guidance development process, a call for evidence was carried out. Table 8 shows the studies located through the call for evidence and the results of the screening process carried out on these studies.

Table 8. Studies located through the call for evidence

Full Reference	Abstract	Exclusion code
BHIVA 2005-6 mortality audit (presentation) available from www.bhiva.org.uk/files/file1001379.ppt	n/a	EX_7
Bos, J. M., J. S. Fennema, et al. (2001). "Cost-effectiveness of HIV screening of patients attending clinics for sexually transmitted diseases in Amsterdam." Aids. 15(15): 2031-6.	Objective: To estimate the cost-effectiveness of universal HIV screening of patients attending a clinic for sexually transmitted diseases (STD) in Amsterdam. Design: Cost effectiveness analysis. A Bernoulli model for the secondary transmission of HIV was linked with epidemiological data on infection with HIV and other STD in patients attending a STD clinic in Amsterdam from 1991 to 1997. This gave estimates of the number of secondary HIV infections caused by attenders of the STD clinic. Combined with data on the health and monetary benefits of averting HIV infection and costs of HIV screening, we assessed the cost-effectiveness of HIV-screening of attenders of the STD clinic. Increased risk for HIV infection was found in STD clinic attendees infected with other STD. (odds ratio, 2.07). The risk differed for specific STD: the highest odds ratios were found for syphilis and gonorrhoea. Screening of all attendees was estimated at net costs of €82 552 per secondary infection averted. The cost-effectiveness ranges between €680 and €9335 per life-year gained, depending on the value of key parameters used in the model. Conclusion: Compared to other interventions in infectious diseases control in the Netherlands, screening of STD clinic attendees for HIV has an acceptable cost-effectiveness.	EX_1
Bos, J. M., W. I. van der Meijden, et al. (2002). "Routine HIV screening of sexually transmitted disease clinic attenders has favourable cost-effectiveness ratio in low HIV prevalence settings." Aids. 16(8): 1185-7.	HIV screening for attenders of clinics for sexually transmitted disease (STD) may identify individuals with high-risk sexual behaviour and avert HIV infections in partners. Extending our previous analysis in AIDS, we performed an economic evaluation of HIV screening of STD-clinic attenders in Rotterdam, the Netherlands. The results, at euro 2987 per life-year gained, display a favourable economic profile. Routine HIV screening in STD clinics should be considered as a highly cost-effective prevention measure even in countries with a low HIV prevalence.	EX_1
Clinical Effectiveness Group of the British Association for Sexual Health and HIV and the HIV Testing Guidelines Group. HIV testing for patients attending general	n/a	EX_11

medical services. Royal College of Physicians of London 2005. Available from http://www.rcplondon.ac.uk/pubs/books/hivtesting/HIVguidelines.pdf		
Dodds, C. et al., 2008. *BASS Line 2007 survey: Assessing the sexual HIV prevention needs of African people in England*, Sigma Research. Available at: www.sigmaresearch.org.uk/go.php/reports/report2008b	n/a	EX_1
Elam G et al (2006) *Intentional and unintentional UAI among gay men who HIV test in the UK: qualitative results from an investigation into risk factors for seroconversion among gay men who HIV test (INSIGHT).* HIV Med 7 (supplement 1), abstract 027.	n/a	EX_7
Elam, G., Macdonald, N., Hickson, F. C. I., Imrie, J. et al. (2008). Risky sexual behaviour in context: qualitative results from an investigation into risk factors for seroconversion among gay men who test for HIV. *Sexually Transmitted Infections*, *84*(6), 473-477	Objectives: The INSIGHT case-control study confirmed that HIV serodiscordant unprotected anal intercourse (SdUAI) remains the primary risk factor for HIV infection in gay men in England. This paper uses qualitative follow-up data to examine the contexts of SdUAI and other risk factors among the case-control study participants. Methods: In-depth interviews were conducted with 26 recent HIV seroconverters and 22 non-converters. Purposive selection was used to provide diversity in demographics and sexual behaviour and to facilitate exploration of risk factors identified in the case-control study. Results: Condoms were perceived as barriers to intimacy, trust and spontaneity. The potential consequences of the loss of these were traded off against the consequences of HIV infection. Previous negative HIV tests and the adoption of risk reduction strategies diminished the perceived threat of HIV infection, supporting beliefs that HIV was something that happened to others. Depression and low self-esteem, often combined with use of alcohol or other drugs, led to further risk taking and loss of control over risk reduction strategies. Conclusions: A range of psychosocial reasons led some men to engage in UAI with serodiscordant or unknown partners, despite high levels of risk awareness. Men in their mid-life, those in serodiscordant relationships and men that had experienced bereavement or other significant, negative, life events revealed factors related to these circumstances that contributed to increases in risky UAI. A diverse portfolio of interventions is required to build confidence and control over safer sex practices that are responsive to gay men's wider emotional needs.	EX_7

Elford J *New research on ethnic minority MSM living in Britain.* Workshop R5 from The Invisible Men: Gay Men and Other MSM in the Global HIV/AIDS Epidemic, pre-conference satellite to the Mexico World AIDS Conference 2008. Available from http://www.msmandhiv.org/documents/Elford.pdf	n/a	EX_2
Farnham, P. G., R. D. Gorsky, et al. (1996). "Counseling and testing for HIV prevention: costs, effects, and cost-effectiveness of more rapid screening tests." Public Health Reports. 111(1): 44-53; discussion 54.	New rapid human immunodeficiency virus (HIV) antibody tests permit many individuals to receive test results and appropriate counseling at one clinic visit. Because currently used tests require significant time for processing, all individuals must return for a second visit for test results and counseling. Since return rates for the second visit are low, the more rapid tests present an opportunity to improve the efficiency of HIV counseling and testing. The authors compared the costs and effectiveness of the currently used counseling and testing procedure and a streamlined procedure made possible by the new, more rapid screening tests. When test-positive clients are given preliminary screening test results, the rapid procedure is more cost-effective than the current procedure. Since over 90% of the clients in most clinics will test negative, the rapid counseling and testing procedure allows the vast majority of clients to be counseled and tested and to receive their results and posttest counseling in one visit. However, in the case where the goal of HIV counseling and testing is to focus only on infected individuals, if information regarding a positive result from the rapid screening test is not given to clients at the initial visit before a confirmatory test is performed, then the rapid counseling and testing procedure is not more cost-effective than the current procedure.	EX_1
Flowers, P., & Church, S. (2002). To test or not? HIV - antibody testing amongst gay men. *Culture, Health & Sexuality: An International Journal for Research, Intervention and Care*, *4*(1), 43.	This paper reviews the literature regarding levels of HIV antibody testing amongst gay men and rationales both for and against testing. Whilst marked differences in levels of reported testing were identified (regionally, nationally and across time), some consensus was found regarding reasons both for and against HIV antibody testing. Reasons for testing included accessing medical treatments, planning for the future and hoping for peace of mind. Reasons against testing included the negative psychological and social consequences of positive test results. The findings of the review are discussed in terms of recent medical discourses, which provide a powerful rationale for the uptake of HIV antibody testing amongst all gay men where treatments are available. Critically, we illustrate the lack of current research that seeks to reappraise HIV testing in the light of new HIV treatments, and discuss the implications for both research and practice.	EX_11
Flowers, P., Duncan, B., & Frankis, J. (2000). Community, responsibility and culpability: HIV risk-management amongst Scottish gay men. *Journal*	This paper draws upon a qualitative study of Scottish gay men's understandings of HIV testing to explore the importance and changing understandings of 'community' within gay men's HIV risk-management. Nineteen men took part in one-to-one interviews, and 18 men took part in focus group discussions concerning HIV testing, HIV status and HIV risk-management.	IN [dup]

of Community and Applied Social Psychology, *10*(4), 285-300.	These discussions were subsequently analysed for recurrent themes using Interpretive Phenomenological Analysis. We focus on the ways in which new health technologies have afforded a process of 'othering': creating the social exclusion of known or assumed HIV positive men, and thus contributing to the fragmenting of the gay community. Further, we argue that, through shifting HIV avoidance mechanisms from their originally collective level to that of the individual, such technologies have had the unintended consequence of facilitating inadequate lay constructions of risk-management, potentially putting gay men at risk of HIV infection.	
Flowers, P., Duncan, B., & Knussen, C. (2003). Re-appraising HIV testing: An exploration of the psychosocial costs and benefits associated with learning one's HIV status in a purposive sample of Scottish gay men. *British Journal of Health Psychology*, *8*(2), 179-194.	OBJECTIVE: This study explored contemporary understandings of the psychosocial costs and benefits associated with learning one's HIV status within a purposive sample of Scottish gay men. It seeks to provide insight into the psychosocial factors associated with decision-making processes relating to the HIV antibody test. METHOD: Transcripts of one-to-one interviews (N = 19) and four focus groups (N = 18) were analysed using Interpretative Phenomenological Analysis. Participants had varied HIV testing histories, and the sample included men who identified their HIV status as positive, men who identified it as negative, and men who did not know. RESULTS: The HIV test could resolve doubt and anxiety for some men, but only when 'not knowing' was experienced as less tolerable than an imagined positive result. Many participants were deterred from seeking an HIV test because of their fears of the implications of a positive result. The decision to take an HIV test could be understood as a choice between living with uncertainty and the perceived impact of ascertaining HIV status. CONCLUSION: For the participants in this study, the decision to test or not involved many complex medical, psychological and social factors. It is argued that the development of HIV testing policy must start with a perspective grounded in an understanding and appreciation of these complexities.	IN [dup]
Flowers, P., Knussen, C., & Church, S. (2003). Psychosocial factors associated with HIV testing amongst Scottish Gay men. *Psychology & Health*, *18*(6), 739.	This article describes the relationship between HIV testing and a range of psychosocial, sexual and socio-demographic variables. Trained research staff distributed a self-report questionnaire in the gay bars of Glasgow and Edinburgh, in May 2000. Questionnaires were completed by 803 men (a response rate of 78%). We present the results of both bivariate and multivariate analyses identifying key variables associated with never having had an HIV test. Thus we outline some psychosocial barriers to HIV testing. Multivariate analysis indicated that the most important factor associated with never having tested was fear of a positive result; this was particularly true for those men who reported higher levels of risky sexual conduct. We discuss the relevance of these findings in terms of presenting a psychosocial agenda which demands that stigma and the social exclusion of HIV positive people should be addressed before gay men are encouraged to seek HIV testing.	EX_quant views
Flowers, P., Knussen, C., & Duncan, B. (2001). Re-appraising HIV testing among Scottish gay men: the impact of new HIV	This paper explores Scottish gay men's understandings of HIV testing within the context of changes stemming from the availability of new treatments for HIV. Transcripts of one-toone interviews with 18 gay men were analysed together with those from four focus groups (*n*= 19) concerning HIV testing, HIV	IN [dup]

treatments. *Journal of Health Psychology*, *6*(6), 665-678.	status and HIV risk management. Interpretative Phenomenological Analysis was employed to identify recurrent themes. We focus upon a rise of HIV-optimism, risk-complacency and HIV fatigue and chart the apparent transformation of HIV diagnosis from 'deathsentence' to 'life sentence'. In turn, we explore how these changes have impacted upon HIV testing. As HIV management becomes increasingly medicalized, we highlight the ongoing need to attend to psychological and social issues.	
Forsyth, S.F. et al., 2008. Would offering rapid point-of-care testing or non-invasive methods improve uptake of HIV testing among high-risk genitourinary medicine clinic attendees? A patient perspective. *Int J STD AIDS*, 19(8), 550-552.	While most genitourinary (GU) medicine clinics achieve a high uptake for testing HIV in new patients, they may still miss testing those at highest risk. Point-of-care testing (POCT) and salivary samples are acceptable and feasible but have not yet been shown to increase uptake among high-risk patients (HRP). This study aimed to describe reasons why HRP decline HIV testing and whether offering POCT along with standard testing would increase the uptake of testing HIV in two London GU medicine clinics. Anonymous self-administered questionnaires were offered to all new and rebooked patients. Eight hundred and ninety-nine questionnaires were analysed of which 598 were HRP. Uptake of HIV testing was 77.1% among HRP and 65.8% among the rest. A total of 51.1% of HRP who declined HIV testing said they would be more likely to accept a POCT and 32.8% a salivary test. Introduction of rapid POCT for HIV would increase patient's choice and may increase the likelihood of HRP accepting an HIV test.	EX_quant views
Frith, L., 2007. HIV self-testing: a time to revise current policy. *Lancet*, 369(9557), 243-245.	n/a	EX_1
Gold, R.S. & Karantzas, G., 2008. Thought processes associated with reluctance in gay men to be tested for HIV. *Int J STD AIDS*, 19(11), 775-779.	This study explored the thought processes that are associated with reluctance in gay men to be tested for HIV antibodies. The sample comprised 97 men who had not been tested for at least four years; 69 had never been tested. They were asked to imagine that someone had suggested that they be tested very soon and to identify, from the list provided, any negative thoughts prompted by this suggestion. The most commonly reported thoughts were that testing was unnecessary because risks had not been taken, that it was unnecessary because there were no symptoms, and that there was no urgency to be tested. Data were explored by means of factor analysis and comparisons across subgroups differing in risk level. The results are interpreted as indicating the use of rationalizations to buttress a decision not to be tested, the powerful influence on HIV decision-making exerted by salient perceptible features, and the 'status quo bias'. Techniques that could be used to encourage testing in gay men are discussed.	EX_quant views
Hart GJ, Williamson LM, Flowers P, Frankis JS, Der GJ. Gay Men's HIV Testing Behaviour in Scotland. *AIDS Care* 2002; 14(5):665-674.	This paper reports on the social and demographic factors associated with HIV testing in gay men in Scotland. Trained sessional research staff administered a short self-complete questionnaire to men in gay bars during January and February 1999 in Glasgow and Edinburgh, Scotland. Questionnaires were completed by 2,498 men (response rate of 77.5%). Half (1,190; 50%) reported ever having been HIV antibody tested, with men in Edinburgh more likely to report testing. Testing was associated with being older (26 years plus), higher	EX_7

	education, reporting one unprotected anal intercourse (UAI) partner, or six or more UAI partners, in the last year, genitourinary medicine clinic service use, and lifetime experience of sexually transmitted infections. There was no relationship between HIV testing and treatment optimism, or evidence of a 'post-Vancouver' effect. Over a fifth of men who said that they knew their own HIV status at last UAI had never been tested. Current testing policy needs to be challenged if there is to be an increase in the number of gay men who know their HIV status and, if tested HIV-positive, to then access antiretroviral treatments.	
Hickson, F., Weatherburn, P., Reid, D., Jessup, K., & Hammond, G. (2009). *Testing Targets: Findings from the United Kingdom Gay Men's Sex Survey 2007* (p. 64). London: Sigma Research. Available from www.sigmaresearch.org.uk/files/report2009f.pdf	n/a	EX_7
HPA HIV in the United Kingdom 2008. Available from www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1227515298354	n/a	EX_11
Madden H, Jones L, Hargreaves S et al. Introduction and review of epidemiology policy and treatment, Liverpool John Moores University, available from www.nwpho.org.uk	n/a	EX_7
Munro, H.L. et al., 2008. National study of HIV testing in men who have sex with men attending genitourinary clinics in the United Kingdom. *Sexually Transmitted Infections*, 84(4), 265-270.	Objectives: To determine what proportion of men who have sex with men (MSM) attending genitourinary medicine (GUM) clinics are offered and accept an HIV test and to examine clinic and patient characteristics associated with offer and uptake. Methods: A cross-sectional study of all GUM clinics in the United Kingdom, involving a case note review of up to 30 patient records per clinic and the completion of a clinic policy form. Results: Overall, 86% of MSM were offered a test and of those 82% accepted a test. Attending with symptoms of a sexually transmitted infection (STI), fewer numbers of partners in the past three months and having tested previously were all independently associated with a decreased likelihood of being offered a test. Attending with symptoms of an STI, increasing age, never having had a risk from unprotected anal intercourse or a previous HIV test and increasing time to wait for results were all independently associated with a decreased likelihood of a patient accepting a test. Only a quarter of clinics reported a written policy for HIV testing intervals among MSM; however, all clinics reported offering testing to all new MSM patients at first screening. The testing policy for re-attending patients was	EX_11

	less clear. Conclusions: Testing must reach those at most risk and those less likely to test in order to reduce further the proportion of undiagnosed HIV infection. This study suggests that opportunities to detect infection may be being missed and a move towards universal testing of all MSM attending with a new episode, as well as testing within the window period, is recommended.	
NAT (July 2008) *Primary HIV Infection*, www.nat.org.uk	n/a	EX_11
Owens, D. K., R. F. Nease, Jr., et al. (1996). "Cost-effectiveness of HIV screening in acute care settings."Archives of Internal Medicine. 156(4): 394-404.	BACKGROUND: Although screening inpatients for human immunodeficiency virus (HIV) in acute care hospital settings has been recommended, the cost-effectiveness of screening is not known. OBJECTIVE: To estimate the cost-effectiveness of a voluntary screening program in acute care hospitals and associated clinics. RESULTS: During the first year, an HIV screening program implemented in acute care hospital settings in which the seroprevalence of HIV infection is 1% or more would result in the identification of approximately 110,000 undetected cases of HIV infection. The program would result in expenditures of approximately $171 million for testing and counseling, and expenditures of approximately $2 billion for incremental medical care for the patients identified as having HIV infection during the first year of screening. When the seroprevalence of HIV is 1%, the cost-effectiveness of screening is $47,200 per year of life saved. When the effect of early identification of HIV infection on the patient's quality of life also is considered, screening is less cost-effective. Screening-induced reductions in risk behavior improve the cost-effectiveness of screening by preventing the transmission of HIV.	EX_1
Paltiel, A.D. et al., 2005. Expanded screening for HIV in the United States--an analysis of cost-effectiveness. *The New England Journal of Medicine*, 352(6), 586-595.	Background Although the Centers for Disease Control and Prevention (CDC) recommend routine HIV counseling, testing, and referral (HIVCTR) in settings with at least a 1 percent prevalence of HIV, roughly 280,000 Americans are unaware of their human immunodeficiency virus (HIV) infection. The effect of expanded screening for HIV is unknown in the era of effective antiretroviral therapy. Methods We developed a computer simulation model of HIV screening and treatment to compare routine, voluntary HIVCTR with current practice in three target populations: "high-risk" (3.0 percent prevalence of undiagnosed HIV infection; 1.2 percent annual incidence); "CDC threshold" (1.0 percent and 0.12 percent, respectively); and "U.S. general" (0.1 percent and 0.01 percent). Input data were derived from clinical trials and observational cohorts. Outcomes included quality-adjusted survival, cost, and cost-effectiveness. Results In the high-risk population, the addition of one-time screening for HIV antibodies with an enzyme-linked immunosorbent assay (ELISA) to current practice was associated with earlier diagnosis of HIV (mean CD4 cell count at diagnosis, 210 vs. 154 per cubic millimeter). One-time screening also improved average survival time among HIV-infected patients (quality-adjusted survival, 220.7 months vs. 219.8 months). The incremental cost-effectiveness was $36,000 per quality-adjusted life-year gained. Testing every five years cost $50,000 per quality-adjusted life-year gained, and testing every three years cost $63,000 per quality-adjusted	EX_1

	life-year gained. In the CDC threshold population, the cost-effectiveness ratio for one-time screening with ELISA was $38,000 per quality-adjusted life-year gained, whereas testing every five years cost $71,000 per quality-adjusted life-year gained, and testing every three years cost $85,000 per quality-adjusted life-year gained. In the U.S. general population, one-time screening cost $113,000 per quality-adjusted life-year gained. Conclusions In all but the lowest-risk populations, routine, voluntary screening for HIV once every three to five years is justified on both clinical and cost-effectiveness grounds. One-time screening in the general population may also be cost-effective.	
Phillips, K. A. and S. Fernyak (2000). "The cost effectiveness of expanded HIV counselling and testing in primary care settings: a first look." Aids. 14(14): 2159-69.	OBJECTIVE: To estimate the cost-effectiveness of approaches to expanded HIV counselling and testing. DESIGN: A cost-effectiveness analysis. SETTING: Primary care practices in the USA. PARTICIPANTS: New patient visits. INTERVENTIONS: Two approaches were examined: (i) requesting all patients to complete an HIV-risk screening instrument, with counselling as well as testing offered only to patients disclosing risk factors ('risk histories' option); and (ii) routine offering of voluntary testing to all patients, with consent obtained but no pre-test counselling ('routine testing'). MAIN OUTCOME MEASURES: The primary outcome was the cost per infection identified. We also examined: (i) the costs and numbers of infections averted if individuals change their risk behaviours; and (ii) the additional years of life and quality-adjusted life years (QALY) gained as a result of earlier HIV testing and treatment for infected individuals. RESULTS: Routine testing is the most cost-effective approach to identifying infected individuals at an incremental cost of US$4200 per infection identified. Although using risk histories is more costly and less effective than routine testing, it becomes similarly cost-effective using plausible ranges for sensitivity analyses. If at least 10% of HIV-positive individuals change their behavior, both routine testing and using risk histories would save money. If testing identifies infected individuals one year earlier than they otherwise would have been diagnosed, routine testing would cost US$22000 per QALY gained. CONCLUSION: Routine testing is the most cost-effective approach to identifying new HIV infections. However, using risk histories may be similarly cost-effective under various assumptions. Both routine testing and using risk histories are more cost-effective than current practices.	EX_1
Pinkerton, S.D., Holtgrave, D.R. & Galletly, C.L., 2008. Infections prevented by increasing HIV serostatus awareness in the United States, 2001 to 2004. *Journal of Acquired Immune Deficiency Syndromes (1999)*, 47(3), 354-357.	BACKGROUND: Persons living with HIV (PLWH) who are aware of their HIV status are more likely than serostatus-unaware PLWH to take precautions to prevent HIV transmission to their partners. The estimates of the Centers for Disease Control and Prevention (CDC) indicate that the proportion of PLWH who were aware of their serostatus increased between 2001 and 2004. The epidemiologic consequences of this increase in serostatus awareness are unknown. METHODS: We developed a basic model of the US HIV epidemic from 2001 to 2004. Using this model, we calculated the number of incident infections that would have occurred in 2002 to 2004 had the proportion of PLWH who were aware of their serostatus remained at its 2001 level rather than increasing between 2001 and 2004. We then compared this incidence estimate with the CDC's estimated total of 120,000 incident infections in 2002 to 2004 to	EX_2

	determine the number of infections prevented by the increase in serostatus awareness. RESULTS: The increase from 2001 to 2004 in the proportion of PLWH who were aware of their serostatus can be credited with preventing nearly 6000 incident HIV infections in the 3-year period from 2002 to 2004. Sensitivity analyses indicated a plausible range of 4000 to 8700 prevented infections. CONCLUSION: This analysis demonstrates the important epidemiologic benefits of increasing the proportion of PLWH who are aware of their HIV status.	
Reid, D. et al., 2004. *On the move: Findings from the United Kingdom Gay Men's Sex Survey 2003*, London: Sigma Research. Available at: www.sigmaresearch.org.uk/files/report2004g.pdf	n/a	EX_quant views
Richter, A., M. L. Brandeau, et al. (1999). "An analysis of optimal resource allocation for prevention o infection with human immunodeficiency virus (HIV) in injection drug users and non-users." Medical Decision Making 19(2): 167-179	Millions of dollars are spent annually to prevent infection with human immunodeficiency virus (HIV) without a thorough understanding of the most effective way to allocate these resources. The authors' objective was to determme the allocation of new resources among prevention programs targeted to a population of injection drug users (IDUs) and a population of non-injection drug users (non-IDUs) that would minimize the total number of incident cases of HIV infection over a given time horizon. They developed a dynamic model of HIV transmission in IDUs and non-IDUs and estimated the rela tionship between prevention program expenditures and reductions in HIV transmission. They evaluated three prevention programs: HIV testing with routine counseling, HIV testing with intensive counseling, and HIV testing and counseling linked to methadone maintenance programs. They modeled a low-risk IDU population (5% HIV prevalence) and a moderate-risk IDU population (10% HIV prevalence). For different available budgets, they determined the allocation of resources among the prevention programs and populations that would minimize the number of new cases of HIV infection over a five-year period, as well as the incremental value of additional prevention funds. The study framework provides a quantitative, systematic approach to funding programs to prevent HIV infection that accounts for HIV transmission dynamics, population size, and the costs and effectiveness of the interventions in reducing HIV transmission. The approach is general and can be used to evaluate a broader group of prevention pro grams and risk populations. This framework thus could enable policy makers and cli nicians to identify a portfolio of programs that provide, collectively, the most benefit for a given budget. Key words: HIV; AIDS; HIV-1; resource allocation; prevention; cost- benefit analysis.	EX_1

Rivera-Alsina, M. E., et al., 2001. Voluntary screening program for HIV in pregnancy. Cost effectiveness. *Journal of Reproductive Medicine*, 46(3), 243-8.	OBJECTIVE: To determine the effectiveness of a voluntary human immunodeficiency virus (HIV) screening program in pregnancy. STUDY DESIGN: Using a business decision theory analysis model, we estimated the outcomes and costs of the two possible decisions by our patients (test/no test). Patients with a positive HIV screen would undergo evaluation and possible prophylactic antiviral therapy. The model was utilized to evaluate the Naval Medical Center San Diego Program from 1995-1997. RESULTS: Prevalence of HIV in active duty Navy personnel during the years evaluated were 1995, 0.024%; 1996, 0.028%; and 1997, 0.022%. Patients screened for HIV during these years were 1995, 3,874; 1996, 3,924; and 1997, 4,127 (n = 11,925). Incidence of HIV seroprevalence in patients screened during the study period was zero. The number of patients declining HIV screening was: 1995, 10; 1996, 8; and 1997, 5. During the same period, reported HIV seroprevalence among pregnant patients in the United States was 1.5/1,000. CONCLUSION: HIV seroprevalence in our pregnant population (zero) was lower than expected, considering the national pregnancy prevalence and Navy prevalence. The expected number of cases of positive HIV screens was 17.8. The cost of the program for the study period was $103,748. The cost of care for one positive neonate ranges between $100,000 and $200,000.	EX_1
Roberts J, Ottewill M, Alfrangis C. et al. Diagnosing HIV: better late than never…but better never late, 12th BHIVA Conference 2006, Oral abstract P30.3	n/a	EX_1
Sanders, G.D. et al., 2005. Cost-effectiveness of screening for HIV in the era of highly active antiretroviral therapy. *New England Journal of Medicine*, 352(6), 570-585.	BACKGROUND: The costs, benefits, and cost-effectiveness of screening for human immunodeficiency virus (HIV) in health care settings during the era of highly active antiretroviral therapy (HAART) have not been determined. METHODS: We developed a Markov model of costs, quality of life, and survival associated with an HIV-screening program as compared with current practice. In both strategies, symptomatic patients were identified through symptom-based case finding. Identified patients started treatment when their CD4 count dropped to 350 cells per cubic millimeter. Disease progression was defined on the basis of CD4 levels and viral load. The likelihood of sexual transmission was based on viral load, knowledge of HIV status, and efficacy of counseling. RESULTS: Given a 1 percent prevalence of unidentified HIV infection, screening increased life expectancy by 5.48 days, or 4.70 quality-adjusted days, at an estimated cost of 194 dollars per screened patient, for a cost-effectiveness ratio of 15,078 dollars per quality-adjusted life-year. Screening cost less than 50,000 dollars per quality-adjusted life-year if the prevalence of unidentified HIV infection exceeded 0.05 percent. Excluding HIV transmission, the cost-effectiveness of screening was 41,736 dollars per quality-adjusted life-year. Screening every five years, as compared with a one-time screening program, cost 57,138 dollars per quality-adjusted life-year, but was more attractive in settings with a high incidence of infection. Our results were sensitive to the efficacy of behavior modification, the benefit of early identification and therapy, and the	EX_7

	prevalence and incidence of HIV infection. CONCLUSIONS: The cost-effectiveness of routine HIV screening in health care settings, even in relatively low-prevalence populations, is similar to that of commonly accepted interventions, and such programs should be expanded.	
Sanders, G.D. et al., 2008. Cost-effectiveness of HIV screening in patients older than 55 years of age. *Annals of Internal Medicine*, 148(12), 889-903.	BACKGROUND: Although HIV infection is more prevalent in people younger than age 45 years, a substantial number of infections occur in older persons. Recent guidelines recommend HIV screening in patients age 13 to 64 years. The cost-effectiveness of HIV screening in patients age 55 to 75 years is uncertain. OBJECTIVE: To examine the costs and benefits of HIV screening in patients age 55 to 75 years. DESIGN: Markov model. DATA SOURCES: Derived from the literature. TARGET POPULATION: Patients age 55 to 75 years with unknown HIV status. TIME HORIZON: Lifetime. PERSPECTIVE: Societal. INTERVENTION: HIV screening program for patients age 55 to 75 years compared with current practice. OUTCOME MEASURES: Life-years, quality-adjusted life-years (QALYs), costs, and incremental cost-effectiveness. RESULTS OF BASE-CASE ANALYSIS: For a 65-year-old patient, HIV screening using traditional counseling costs $55,440 per QALY compared with current practice when the prevalence of HIV was 0.5% and the patient did not have a sexual partner at risk. In sexually active patients, the incremental cost-effectiveness ratio was $30,020 per QALY. At a prevalence of 0.1%, HIV screening cost less than $60,000 per QALY for patients younger than age 75 years with a partner at risk if less costly streamlined counseling is used. RESULTS OF SENSITIVITY ANALYSIS: Cost-effectiveness of HIV screening depended on HIV prevalence, age of the patient, counseling costs, and whether the patient was sexually active. Sensitivity analyses with other variables did not change the results substantially. LIMITATIONS: The effects of age on the toxicity and efficacy of highly active antiretroviral therapy and death from AIDS were uncertain. Sensitivity analyses exploring these variables did not qualitatively affect the results. CONCLUSION: If the tested population has an HIV prevalence of 0.1% or greater, HIV screening in persons from age 55 to 75 years reaches conventional levels of cost-effectiveness when counseling is streamlined and if the screened patient has a partner at risk. Screening patients with advanced age for HIV is economically attractive in many circumstances.	EX_1
Scholey, R (2008) *Sector Summary Report: Undiagnosed Infection*. Terrence Higgins Trust, London. Available from Http://www.tht.org.uk/informationresources/publications/gaymenshealthpromotion/undiagnosedinfectionssr951.pdf	Undiagnosed HIV infection has serious implications for the quality of life and life expectancy of people with HIV. This report, however, looks at what undiagnosed infection means for HIV prevention. Although focusing on gay men, much of its content also applies to other groups. Central to curbing the spread of HIV is diagnosing those unaware they have it. This report summarises key findings and debates at a time when reducing undiagnosed infection is moving up the agenda of funders and health promoters and the HIV sector is reappraising its approach to testing.	EX_11
Tao, G. Y. and G. Remafedi (1998). Economic evaluation of an HIV prevention intervention for gay and bisexual male	The objective of this study was to evaluate the cost-effectiveness of an HIV prevention intervention for gay and bisexual male adolescents. The intervention included individualized risk assessment and counseling, peer education, optional HIV testing, and referrals to needed services. From	EX_7

adolescents. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology* 17(1): 83-90	1989 to 1994, 501 male volunteers, 13 to 21 years of age, who self-identified as gay/bisexual or as having had sex with men, completed preintervention and postintervention surveys to assess changes in HIV risk behavior. An HIV transmission model was constructed to project the HIV seroprevalence in the target population over a 10-year period from the self-reported number of partners for unprotected anal intercourse. Cost-effectiveness was analyzed from a societal perspective. Total costs of the intervention, including medical treatment costs saved, were projected to be $1.1 million U.S. for the 10-year period. The number of HIV infections averted and the quality-adjusted life years (QALYs) saved were projected to be 13 and 180, respectively. An incremental cost-effectiveness ratio was projected to be $6180 U.S. per QALY saved. The intervention was found to be cost-effective from the societal perspective. In addition, HIV prevalence in the target population was projected to be 6.1% without and 5.6% with intervention by the end of the 10-year period. This study highlights that an HIV prevention program can be cost-effective even if the effects on behavior are partial and short term.	
Varghese, B. and T. A. Peterman (2001). "Cost-effectiveness of HIV counseling and testing in US prisons." Journal of Urban Health. 78(2): 304-12.	The prevalence of human immunodeficiency virus (HIV) in correctional facilities is much higher than in the general population. However, HIV prevention resources are limited, making it important to evaluate different prevention programs in prison settings. Our study presents the cost-effectiveness of offering HIV counseling and testing (CT) to soon-to-be-released inmates in US prisons. A decision model was used to estimate the costs and benefits (averted HIV cases) of HIV testing and counseling compared to no CT from a societal perspective. Model parameters were HIV prevalence among otherwise untested inmates (1%); acceptance of CT (50%); risk for HIV transmission from infected individuals (7%); risk of HIV acquisition for uninfected individuals (0.3%); and reduction of risk after counseling for those infected (25%) and uninfected (20%). Marginal costs of testing and counseling per person were used (no fixed costs). If infected, the cost was $78.17; if uninfected, it was $24.63. A lifetime treatment cost of $186,900 was used to estimate the benefits of prevented HIV infections. Sensitivity and threshold analysis were done to test the robustness of these parameters. Our baseline model shows that, compared to no CT, offering CT to 10,000 inmates detects 50 new or previously undiagnosed infections and averts 4 future cases of HIV at a cost of $125,000 to prison systems. However, this will save society over $550,000. Increase in HIV prevalence, risk of transmission, or effectiveness of counseling increased societal savings. As prevalence increases, focusing on HIV-infected inmates prevents additional future infections; however, when HIV prevalence is less than 5%, testing and counseling of both infected and uninfected inmates are important for HIV prevention	EX_1
Varghese, B., Peterman, T.A. & Holtgrave, D.R., 1999. Cost-effectiveness of counseling and testing and partner notification: a decision analysis. *AIDS*, 13(13), 1745-1751.	OBJECTIVE: Counseling and testing and partner notification are effective HIV prevention strategies, but they can be resource intensive. This paper evaluates the cost-effectiveness of partner notification and counseling and testing offered in HIV and sexually transmitted disease (STD) clinics in preventing future HIV infections in the United States of America. METHODS: Decision trees were developed from both societal	EX_1

	and provider perspectives. The counseling and testing and partner notification models incorporate estimates of HIV prevalence, return rates for counseling, risk of HIV transmission within 1 year, and the effectiveness of counseling. Cost estimates for counseling and testing and partner notification programs and lifetime treatment cost of HIV for the United States of America were obtained from published literature. Extensive sensitivity analyses of model parameters were conducted. RESULTS: For a cohort of 10,000 individuals at a clinic with an HIV seroprevalence of 1.5%, we estimate that counseling and testing prevents eight HIV infections and saves society almost $1,000,000. We estimate that partner notification for the 113 infected persons identified by counseling and testing, prevents another 1.2 HIV infections and saves an additional $181,000. To the provider (HIV and STD clinics), this translates to a cost of $32,000 per case prevented by counseling and testing and an additional $28,000 for partner notification. Model results are most sensitive to assumptions of HIV prevalence, risk of transmission, and treatment cost of HIV. CONCLUSIONS: Counseling and testing and partner notification are cost effective in preventing HIV transmission in this setting. This model can be adapted to assess the cost-effectiveness of counseling and testing and partner notification in other settings.	
Walensky, R.P. et al., 2005. Routine human immunodeficiency virus testing: an economic evaluation of current guidelines. *American Journal of Medicine*, 118(3), 292-300.	BACKGROUND: The Centers for Disease Control and Prevention guidelines recommend human immunodeficiency virus (HIV) counseling, testing, and referral for all patients in hospitals with an HIV prevalence of >or=1%. The 1% screening threshold has not been critically examined since HIV became effectively treatable in 1995. Our objective was to evaluate the clinical effect and cost-effectiveness of current guidelines and of alternate HIV prevalence thresholds. METHODS: We performed a cost-effectiveness analysis using a computer simulation model of HIV screening and disease as applied to inpatients in U.S. hospitals. RESULTS: At an undiagnosed inpatient HIV prevalence of 1% and an overall participation rate of 33%, HIV screening increased mean quality-adjusted life expectancy by 6.13 years per 1000 inpatients, with a cost-effectiveness ratio of 35,400 dollars per quality-adjusted life-year (QALY) gained. Expansion of screening to settings with a prevalence as low as 0.1% increased the ratio to 64,500 dollars per QALY gained. Increasing counseling and testing costs from 53 dollars to 103 dollars per person still yielded a cost-effectiveness ratio below 100,000 dollars per QALY gained at a prevalence of undiagnosed infection of 0.1%. CONCLUSION: Routine inpatient HIV screening programs are not only cost-effective but would likely remain so at a prevalence of undiagnosed HIV infection 10 times lower than recommended thresholds. The current HIV counseling, testing, and referral guidelines should now be implemented nationwide as a way of linking infected patients to life-sustaining care.	EX_1
Weatherburn, P., Reid, D., Hickson, F., Hammond, G., & fasTest study group. (2006a). *Evaluation of the Department of Health funded fasTest HIV testing*	n/a	EX_11

in the community pilot (p. 44). London: Sigma Research. Available from http://www.sigmaresearch.org.uk/files/report2006f.pdf		
Weatherburn, P., Reid, D., Hickson, F., Hammond, G., & fasTest study group. (2006b). *Evaluation of the gsk funded fasTest HIV testing in the community pilot* (p. 39). London: Sigma Research. Retrieved from http://www.sigmaresearch.org.uk/files/report2006g.pdf	n/a	EX_11
Williamson LM, Dodds JP, Mercey DE, Johnson AM, Hart GJ (2006). Increases in HIV-related sexual risk behaviour among community samples of gay men in London and Glasgow: how do they compare? *Journal of Acquired Immune Deficiency Syndromes* 2006;42:238-241.	OBJECTIVE: In this paper, we compare trends in sexual risk among gay men in the largest city in England (London) and the largest city in Scotland (Glasgow). METHODS: Self-complete questionnaires administered to representative samples of men visiting the commercial gay scenes in London and Glasgow in 1996, 1999, and 2002 (N = 8247). RESULTS: Multivariate logistic regression was used to assess the trends in unprotected anal intercourse (UAI), UAI with partners of unknown/discordant HIV status, and UAI with more than 1 partner. Each increased significantly in 1999 and 2002 in London, but only in 2002 in Glasgow. Testing for HIV also increased significantly in London, but not in Glasgow. Overall, HIV testing levels were considerably lower in Glasgow (in 2002, 49.1% vs. 74.6% in London). Overall, sexual risk was higher in London, but UAI with partners of unknown/discordant HIV status was higher in Glasgow (in 2002, 27.4% vs. 21.3%). CONCLUSIONS: Although the same pattern of increase in HIV-related sexual risk behavior was apparent in the cities, differences in HIV testing and nonconcordant UAI suggest different HIV prevention needs and that targeted health promotion interventions are required in London and Glasgow. City-specific factors should be considered in the development of appropriate sexual health interventions.	EX_7
Williamson LM, Flowers P, Knussen C, Hart GJ. HIV testing trends among gay men in Scotland (1996-2005): implications for HIV testing policies and prevention. *Sexually Transmitted Infections* 2009; 85:550-554.	OBJECTIVE: To examine trends in the HIV testing behaviour of gay men in Scotland over a 10-year period. METHODS: Seven cross-sectional surveys in commercial gay venues in Glasgow and Edinburgh (1996-2005). 9613 men completed anonymous, self-completed questionnaires (70% average response rate). RESULTS: Among 8305 respondents included in these analyses, HIV testing increased between 1996 and 2005, from 49.7% to 57.8% (p<0.001). The proportion of men who had tested recently (in the calendar year of, or immediately before, the survey) increased from 28.4% in 1996 to 33.2% in 2005, when compared with those who have tested but not recently, and those who have never tested (adjusted odds ratio 1.31, 95% CI 1.13 to 1.52). However, among ever testers, there was no increase in rates of recent testing. Recent testing decreased with age: 31.3% of the under 25, 30.3% of the 25-34, 23.2% of the 35-44 and 21.2% of the over 44 years age groups had tested recently. Among men reporting two or more unprotected anal intercourse partners in	EX_7

	the previous year, only 41.4% had tested recently. CONCLUSIONS: HIV testing among gay men in Scotland increased between 1996 and 2005, and corresponds with the Scottish Government policy change to routine, opt-out testing in genitourinary medicine clinics. Testing rates remain low and compare unfavourably with near-universal testing levels elsewhere. The limited change and decline across age groups in recent HIV testing rates suggest few men test repeatedly or regularly. Additional, innovative efforts are required to increase the uptake of regular HIV testing among gay men.	
Williamson, L.M. et al., 2008. Sexual risk behaviour and knowledge of HIV status among community samples of gay men in the UK. *AIDS (London, England)*, 22(9), 1063-1070.	OBJECTIVES: Undiagnosed infection presents a potential risk for the onward transmission of HIV and denies men early interventions for their health. Little is known about the differences between men who are, and are not, aware of their HIV status in the UK. METHODS: Cross-sectional surveys of men in commercial gay venues in London, Brighton, Manchester, Glasgow, and Edinburgh (2003-2005). Anonymous, self-completion questionnaires, and oral fluid samples (tested for HIV antibodies) were obtained from 3672 men (61% response rate). RESULTS: Of 3501 men with a confirmed positive or negative oral fluid result, 318 were HIV positive (9.1%). Of these, 131 (41.2%) were undiagnosed; 81.1% of men with undiagnosed HIV had previously tested (92.2% tested negative; the remainder did not know the result); 62.3% still thought that they were negative. Undiagnosed and diagnosed men reported greater sexual risk and sexually transmitted infections than HIV-negative men. Compared with HIV-negative men, the adjusted odds ratio of unprotected anal intercourse with two or more partners was higher among undiagnosed men (odds ratio 2.21, 95% confidence interval 1.17-4.20), but highest among diagnosed men (odds ratio 6.80, 95% confidence interval 4.39-10.52). CONCLUSION: A high proportion of the HIV-positive men were undiagnosed and not receiving benefits of clinical care, but sexual risk and sexually transmitted infections were highest among men who were aware of their HIV-positive status. Clinics should proactively offer testing to reduce undiagnosed HIV, target repeat testing at high-risk men who have previously tested negative, and initiate evidence-based behavioural interventions to reduce sexual risk among men living with diagnosed HIV as well as those testing negative.	EX_7

13.0 Appendix F. Example quality assessment form

13.1 Quantitative study

Wilton et al. 2009

1. Is the source population or source area well described?	**Comments**
++	Good description of population and setting
2. Is the eligible population or area representative of the source population or area?	**Comments**
+	Use of gay media and venues for recruitment may introduce bias
3. Do the selected participants or areas represent the eligible population?	**Comments**
++	Selection is well described. However, no data on those who refused participation.
4. How was confounding minimised?	**Comments**
++	Fully random.
5. Were interventions (and comparisons) well described and appropriate?	**Comments**
++	Very full description of intervention
6. Was the allocation concealed?	**Comments**
++	Computerised allocation
7. Were participants and/or investigators blind to exposure and comparison?	**Comments**
NA	Not possible for behavioural intervention
8. Was the exposure to the intervention and comparison adequate?	**Comments**
++	Rigorous evaluation to ensure fidelity of implementation
9. Was contamination acceptably low?	**Comments**
++	Wait-list control; very little possibility of contamination
10. Were other interventions similar in both groups?	**Comments**
NR	No information

11. Were all participants accounted for at study conclusion? ++	**Comments** 88.5% had at least one follow up assessment. Those lost to follow up were less likely to identify as gay, but otherwise not significantly different.
12. Did the setting reflect usual UK practice? -	**Comments** Residential setting may not be very feasible.
13. Did the intervention or control comparison reflect usual UK practice? -	**Comments** The intervention is very intensive and it is unclear how feasible it may be.
14. Were the outcome measures reliable? +	**Comments** Self-report
15. Were all outcome measurements complete? ++	**Comments** All in study completed survey
16. Were all important outcomes assessed? ++	**Comments** All outcomes relevant to study aims assessed
17. Were outcomes relevant? NA	**Comments** Not proxy measure
18. Were there similar follow-up times in exposure and comparison groups? ++	**Comments** Identical follow-up times
19. Was follow-up time meaningful? ++	**Comments** 6 months is sufficiently long to measure longer-term behaviour change
20. Were exposure and comparison groups similar at baseline? If not, were these adjusted? ++	**Comments** No significant differences on wide range of characteristics (Table 1).
21. Was Intention to Treat (ITT) analysis conducted? ++	**Comments** Yes
22. Was the study sufficiently powered to detect an intervention effect (if one exists)? NR	**Comments** Not reported

23. Were the estimates of effect size given or calculable?	**Comments**
+	Not given, but calculable.

24. Were the analytical methods appropriate?	**Comments**
++	t-test, chi-square, significance level p=0.05.

25. Was the precision of intervention effects given or calculable? Were they meaningful?	**Comments**
+	Not given, but calculable.

26. Are the study results internally valid? (ie unbiased)	**Comments**
++	Overall, highly robust design.

27. Are the study results generalisable to the source population? (ie externally valid)	**Comments**
+	Some concerns relating to potential non-representativeness of sample.

13.2 Qualitative study

Dodge et al. 2008

1. Is a qualitative approach appropriate?	**Comments**
Appropriate	Study aims to understand perceptions and subjective factors influencing behaviour
2. Is the study clear in what it seeks to do?	**Comments**
Clear	See section 'Study aims'
3. How defensible/rigorous is the research design/methodology?	**Comments**
Defensible	Appropriate choice of method and plan of analysis. Some unclear reporting regarding: justification for choice of method; details of sampling; refusal to participate (if any).
4. How well was the data collection carried out?	**Comments**
Not sure/inadequately reported	Limited information on structure of data collection process
5. Is the role of the researcher clearly described?	**Comments**

Not described	No information
6. Is the context clearly described?	**Comments**
Clear	Participants and settings are clearly described.
7. Were the methods reliable?	**Comments**
Reliable	Methods are appropriate for research question. Not multiple data collection methods but this is not required for the study aims (in reviewer's judgement).
8. Is the data analysis sufficiently rigorous?	**Comments**
Rigorous	Analysis procedure is clearly described and appears systematic.
9. Is the data 'rich'?	**Comments**
Rich	Fairly rich. Considerable depth in data; some exploration of diversity. However, NB little data on testing specifically.
10. Is the analysis reliable?	**Comments**
Reliable	100% double coding and process for ensuring reliability is well described. But no "thematic matrix" or table is presented.
11. Are the findings convincing?	**Comments**
Convincing	Clearly reported and coherent
12. Are the findings relevant to the aims of the study?	**Comments**
Relevant	Findings are clearly linked to aims and research question
13. Conclusions	**Comments**
Adequate	Clearly linked to data. Little reflexivity in terms of methods and researchers' status. Good contextualisation of findings.
14. How clear and coherent is the reporting of ethics?	**Comments**
Appropriate	"The Institutional Review Board of the Columbia University Department of Psychiatry and the New York State Psychiatric Institute approved all study protocols; additionally, all participants are protected by a Certificate of Confidentiality from the National Institutes of Health."
15. How well was the study conducted?	**Comments**

++	Overall, methods are reliable and findings are convincing and well-reported.

14.0 Appendix G. Abbreviations used in the report

AIDS	Acquired immune deficiency syndrome
CBA	Cost-benefit analysis
CEA	Cost-effectiveness analysis
GUM	Genito-urinary medicine
HAART	Highly active anti-retroviral therapy
HIV	Human immunodeficiency virus
IDU	Injecting drug user(s)
MSM	Men who have sex with men
nRCT	Non-randomised controlled trial
RCT	Randomised controlled trial
STD	Sexually transmitted disease
STI	Sexually transmitted infection
UAI	Unprotected anal intercourse
VCT	Voluntary counselling and testing